

# FCC TEST REPORT (15.407)

**REPORT NO.:** RF980701H01-1

**MODEL NO.:** WU260-AM

**RECEIVED:** July 01, 2009

**TESTED:** July 27 to Aug. 06, 2009

**ISSUED:** Aug. 25, 2009

**APPLICANT:** AmTRAN Technology Co., Ltd.

**ADDRESS:** 17F, No. 268, Lien Chen Rd. Chung Ho City  
Taipei County 235, Taiwan.

**ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.)  
Ltd., Taoyuan Branch Hsin Chu Laboratory

**ADDRESS:** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen,  
Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

This test report consists of 178 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by TAF or any government agencies. The test results in the report only apply to the tested sample.





A D T

## Table of Contents

|       |                                                              |    |
|-------|--------------------------------------------------------------|----|
| 1.    | CERTIFICATION .....                                          | 4  |
| 2.    | SUMMARY OF TEST RESULTS .....                                | 5  |
| 2.1   | MEASUREMENT UNCERTAINTY .....                                | 6  |
| 3.    | GENERAL INFORMATION .....                                    | 7  |
| 3.1   | GENERAL DESCRIPTION OF EUT .....                             | 7  |
| 3.2   | DESCRIPTION OF TEST MODES .....                              | 9  |
| 3.2.1 | TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL: .....     | 11 |
| 3.3   | GENERAL DESCRIPTION OF APPLIED STANDARDS .....               | 14 |
| 3.4   | DESCRIPTION OF SUPPORT UNITS.....                            | 15 |
| 3.5   | CONFIGURATION OF SYSTEM UNDER TEST .....                     | 15 |
| 4.    | TEST TYPES AND RESULTS .....                                 | 16 |
| 4.1   | CONDUCTED EMISSION MEASUREMENT .....                         | 16 |
| 4.1.1 | LIMITS OF CONDUCTED EMISSION MEASUREMENT .....               | 16 |
| 4.1.2 | TEST INSTRUMENTS.....                                        | 16 |
| 4.1.3 | TEST PROCEDURES .....                                        | 17 |
| 4.1.4 | DEVIATION FROM TEST STANDARD .....                           | 17 |
| 4.1.5 | TEST SETUP .....                                             | 18 |
| 4.1.6 | EUT OPERATING CONDITIONS .....                               | 18 |
| 4.1.7 | TEST RESULTS .....                                           | 19 |
| 4.2   | RADIATED EMISSION MEASUREMENT .....                          | 21 |
| 4.2.1 | LIMITS OF RADIATED EMISSION MEASUREMENT .....                | 21 |
| 4.2.2 | LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS..... | 22 |
| 4.2.3 | TEST INSTRUMENTS.....                                        | 23 |
| 4.2.4 | TEST PROCEDURES .....                                        | 24 |
| 4.2.5 | DEVIATION FROM TEST STANDARD .....                           | 24 |
| 4.2.6 | TEST SETUP .....                                             | 25 |
| 4.2.7 | EUT OPERATING CONDITION.....                                 | 25 |
|       | BELOW 1GHZ TEST DATA.....                                    | 26 |
| 4.2.8 | TEST RESULTS .....                                           | 26 |
|       | ABOVE 1GHZ TEST DATA .....                                   | 27 |
| 4.2.9 | TEST RESULTS .....                                           | 27 |
| 4.3   | PEAK TRANSMIT POWER MEASUREMENT .....                        | 70 |
| 4.3.1 | LIMITS OF PEAK TRANSMIT POWER MEASUREMENT .....              | 70 |
| 4.3.2 | TEST INSTRUMENTS.....                                        | 70 |
| 4.3.3 | TEST PROCEDURE.....                                          | 71 |
| 4.3.4 | DEVIATION FROM TEST STANDARD .....                           | 71 |
| 4.3.5 | TEST SETUP .....                                             | 71 |
| 4.3.6 | EUT OPERATING CONDITIONS .....                               | 71 |
| 4.3.7 | TEST RESULTS .....                                           | 72 |



A D T

|       |                                                                                         |     |
|-------|-----------------------------------------------------------------------------------------|-----|
| 4.4   | PEAK POWER EXCURSION MEASUREMENT .....                                                  | 112 |
| 4.4.1 | LIMITS OF PEAK POWER EXCURSION MEASUREMENT .....                                        | 112 |
| 4.4.2 | TEST INSTRUMENTS.....                                                                   | 112 |
| 4.4.3 | TEST PROCEDURE.....                                                                     | 113 |
| 4.4.4 | DEVIATION FROM TEST STANDARD .....                                                      | 113 |
| 4.4.5 | TEST SETUP .....                                                                        | 113 |
| 4.4.6 | EUT OPERATING CONDITIONS .....                                                          | 113 |
| 4.4.7 | TEST RESULTS .....                                                                      | 114 |
| 4.5   | PEAK POWER SPECTRAL DENSITY MEASUREMENT .....                                           | 130 |
| 4.5.1 | LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT .....                                 | 130 |
| 4.5.2 | TEST INSTRUMENTS.....                                                                   | 130 |
| 4.5.3 | TEST PROCEDURES .....                                                                   | 131 |
| 4.5.4 | DEVIATION FROM TEST STANDARD .....                                                      | 131 |
| 4.5.5 | TEST SETUP .....                                                                        | 131 |
| 4.5.6 | EUT OPERATING CONDITIONS .....                                                          | 131 |
| 4.5.7 | TEST RESULTS .....                                                                      | 132 |
| 4.6   | FREQUENCY STABILITY.....                                                                | 158 |
| 4.6.1 | LIMITS OF FREQUENCY STABILITY MEASUREMENT .....                                         | 158 |
| 4.6.2 | TEST INSTRUMENTS.....                                                                   | 158 |
| 4.6.3 | TEST PROCEDURE.....                                                                     | 158 |
| 4.6.4 | DEVIATION FROM TEST STANDARD .....                                                      | 159 |
| 4.6.5 | TEST SETUP .....                                                                        | 159 |
| 4.6.6 | EUT OPERATING CONDITION .....                                                           | 159 |
| 4.6.7 | TEST RESULTS .....                                                                      | 160 |
| 4.7   | CONDUCTED OUT-BAND EMISSION MEASUREMENT .....                                           | 161 |
| 4.7.1 | TEST INSTRUMENTS.....                                                                   | 161 |
| 4.7.2 | TEST PROCEDURE.....                                                                     | 161 |
| 4.7.3 | EUT OPERATING CONDITION .....                                                           | 161 |
| 4.7.4 | TEST RESULTS .....                                                                      | 162 |
| 4.8   | ANTENNA REQUIREMENT .....                                                               | 176 |
| 4.8.1 | STANDARD APPLICABLE.....                                                                | 176 |
| 4.8.2 | ANTENNA CONNECTED CONSTRUCTION.....                                                     | 176 |
| 5.    | INFORMATION ON THE TESTING LABORATORIES .....                                           | 177 |
| 6.    | APPENDIX-A- MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB ..... | 178 |

## 1. CERTIFICATION

**PRODUCT:** 802.11a/b/g/n Wireless LAN Module  
**BRAND NAME:** VIZIO  
**MODEL NO.:** WU260-AM  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**TESTED:** July 27 to Aug. 06, 2009  
**APPLICANT:** AmTRAN Technology Co., Ltd.  
**STANDARDS:** FCC Part 15, Subpart E (Section 15.407),  
ANSI C63.4-2003

The above equipment (Model: WU260-AM) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY** : Midoli Peng , **DATE:** Aug. 25, 2009  
( Midoli Peng, Specialist )

**TECHNICAL ACCEPTANCE** : Hank Chung , **DATE:** Aug. 25, 2009  
Responsible for RF ( Hank Chung, Deputy Manager )

**APPROVED BY** : May Chen , **DATE:** Aug. 25, 2009  
(May Chen, Deputy Manager )

## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

[For 802.11a](#)

| APPLIED STANDARD: FCC Part 15, Subpart E (Section 15.407) |                                                              |        |                                                                                  |
|-----------------------------------------------------------|--------------------------------------------------------------|--------|----------------------------------------------------------------------------------|
| Standard Section                                          | Test Type                                                    | Result | Remark                                                                           |
| 15.407(b)(5)                                              | AC Power Conducted Emission                                  | PASS   | Meet the requirement of limit.<br>Minimum passing margin is -17.35dB at 0.173MHz |
| 15.407(b/1/2/3)(b)(5)                                     | Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz | PASS   | Meet the requirement of limit.<br>Minimum passing margin is -1.01dB at 5725.0MHz |
| 15.407(a/1/2/3)                                           | Peak Transmit Power                                          | PASS   | Meet the requirement of limit.                                                   |
| 15.407(a)(6)                                              | Peak Power Excursion                                         | PASS   | Meet the requirement of limit.                                                   |
| 15.407(a/1/2/3)                                           | Peak Power Spectral Density                                  | PASS   | Meet the requirement of limit.                                                   |
| 15.407(g)                                                 | Frequency Stability                                          | PASS   | Meet the requirement of limit.                                                   |

### NOTE:

1. The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz and 5.47~5.725GHz. For the 2400 ~ 2483.5MHz and 5.725~5.850GHz RF parameters was recorded in another test report.

## 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

| Measurement                       | Value   |
|-----------------------------------|---------|
| Conducted emissions               | 2.44 dB |
| Radiated emissions (30MHz-1GHz)   | 3.94 dB |
| Radiated emissions (1GHz -18GHz)  | 2.49 dB |
| Radiated emissions (18GHz -40GHz) | 2.70 dB |

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

|                              |                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRODUCT</b>               | 802.11a/b/g/n Wireless LAN Module                                                                                                                                                                                                                                                                                                                                                   |
| <b>MODEL NO.</b>             | WU260-AM                                                                                                                                                                                                                                                                                                                                                                            |
| <b>FCC ID</b>                | MDZSV422XVT-WL                                                                                                                                                                                                                                                                                                                                                                      |
| <b>POWER SUPPLY</b>          | DC 5 V from host equipment                                                                                                                                                                                                                                                                                                                                                          |
| <b>MODULATION TYPE</b>       | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM                                                                                                                                                                                                                                                                                                                     |
| <b>MODULATION TECHNOLOGY</b> | DSSS, OFDM                                                                                                                                                                                                                                                                                                                                                                          |
| <b>TRANSFER RATE</b>         | 802.11b: 11 / 5.5 / 2 / 1Mbps<br>802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps<br>802.11a: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps<br>Draft 802.11n (20MHz): 130 / 117 / 104 / 78 / 52 / 39 / 26 / 13 / 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps<br>Draft 802.11n (40MHz): 270 / 243 / 216 / 162 / 108 / 81 / 54 / 27 / 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5Mbps |
| <b>FREQUENCY RANGE</b>       | For 15.407<br>802.11a: 5.18 ~ 5.32GHz, 5.50 ~ 5.70GHz                                                                                                                                                                                                                                                                                                                               |
|                              | For 15.247<br>802.11b & 802.11g: 2412 ~ 2462MHz<br>802.11a: 5.745 ~ 5.825GHz                                                                                                                                                                                                                                                                                                        |
| <b>NUMBER OF CHANNEL</b>     | <b>For 15.407</b><br>19 for 802.11a, draft 802.11n (20MHz)<br>9 for draft 802.11n (40MHz)                                                                                                                                                                                                                                                                                           |
|                              | <b>For 15.247(2.4GHz)</b><br>11 for 802.11b, 802.11g, draft 802.11n (20MHz)<br>7 for draft 802.11n (40MHz)<br><b>For 15.247(5GHz)</b><br>5 for 802.11a, draft 802.11n (20MHz)<br>2 for draft 802.11n (40MHz)                                                                                                                                                                        |

|                             |                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MAXIMUM OUTPUT POWER</b> | <b>For 15.407</b><br>802.11a: 27.164mW<br>draft 802.11n (20MHz): 50.436mW<br>draft 802.11n (40MHz): 53.113mW<br><b>For 15.247(2.4GHz)</b><br>802.11b: 126.765mW<br>802.11g: 257.632mW<br>draft 802.11n (20MHz): 549.174mW<br>draft 802.11n (40MHz): 482.958mW<br><b>For 15.247(5GHz)</b><br>802.11a: 185.780mW<br>draft 802.11n (20MHz): 229.874mW<br>draft 802.11n (40MHz): 211.977mW |
| <b>ANTENNA TYPE</b>         | Please see note 1                                                                                                                                                                                                                                                                                                                                                                      |
| <b>DATA CABLE</b>           | NA                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>I/O PORTS</b>            | NA                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>ASSOCIATED DEVICES</b>   | NA                                                                                                                                                                                                                                                                                                                                                                                     |

**NOTE:**

1. There are two antennas provided to this EUT, please refer to the following table:

| Chain    | Antenna Gain             |                        | Antenna Type       | Connector   | Cable Length<br>(External only, if any) |
|----------|--------------------------|------------------------|--------------------|-------------|-----------------------------------------|
|          | For 2.4GHz<br>Gain (dBi) | For 5GHz<br>Gain (dBi) |                    |             |                                         |
| Chain(0) | 2                        | 4                      | Printed Board Type | Hirose U.FL | 680cm(black)                            |
| Chain(1) | 2                        | 4                      | Printed Board Type | Hirose U.FL | 950cm(black)                            |

- The EUT incorporates a MIMO function with draft 802.11n. Physically, the EUT provides two completed transmit and three completed receivers.
- The EUT is 2 \* 2 spatial MIMO (2Tx & 2Rx) without beam forming function. The antenna configurations are two transmitter antennas and two receiver antennas, as there are 2 Printed antennas. Spatial multiplexing modes for simultaneous transmission using 2 antennas, and for simultaneous receiver using 2 antennas. The 11a and 11bg legacy mode is limited to single transmitter only.
- When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.
- The EUT complies with draft 802.11n standards and backwards compatible with 802.11a, 802.11b, 802.11g products.
- The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

### 3.2 DESCRIPTION OF TEST MODES

#### Operated in 5150MHz ~ 5350MHz bands:

Eight channels are provided for 802.11a and draft 802.11n (20MHz):

| CHANNEL | FREQUENCY |
|---------|-----------|
| 36      | 5180 MHz  |
| 40      | 5200 MHz  |
| 44      | 5220 MHz  |
| 48      | 5240 MHz  |
| 52      | 5260 MHz  |
| 56      | 5280 MHz  |
| 60      | 5300 MHz  |
| 64      | 5320 MHz  |

Four channels are provided for draft 802.11n (40MHz):

| CHANNEL | FREQUENCY |
|---------|-----------|
| 38      | 5190 MHz  |
| 46      | 5230 MHz  |
| 54      | 5270 MHz  |
| 62      | 5310 MHz  |

**Operated in 5470MHz ~ 5725MHz bands:**

Eleven channels are provided for 802.11a and draft 802.11n (20MHz):

| CHANNEL | FREQUENCY |
|---------|-----------|
| 100     | 5500 MHz  |
| 104     | 5520 MHz  |
| 108     | 5540 MHz  |
| 112     | 5560 MHz  |
| 116     | 5580 MHz  |
| 120     | 5600 MHz  |
| 124     | 5620 MHz  |
| 128     | 5640 MHz  |
| 132     | 5660 MHz  |
| 136     | 5680 MHz  |
| 140     | 5700 MHz  |

Five channels are provided for draft 802.11n (40MHz):

| CHANNEL | FREQUENCY |
|---------|-----------|
| 102     | 5510 MHz  |
| 110     | 5550 MHz  |
| 118     | 5590 MHz  |
| 126     | 5630 MHz  |
| 134     | 5670 MHz  |

### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

| EUT<br>CONFIGURE<br>MODE | APPLICABLE TO |         |         |      | DESCRIPTION |
|--------------------------|---------------|---------|---------|------|-------------|
|                          | PLC           | RE < 1G | RE ≥ 1G | APCM |             |
| -                        | √             | √       | √       | √    | -           |

Where **PLC**: Power Line Conducted Emission

**RE < 1G**: Radiated Emission below 1GHz

**RE ≥ 1G**: Radiated Emission above 1GHz

**APCM**: Antenna Port Conducted Measurement

| COMBINATION<br>MODE | OPERATION MODE                          | TX<br>CHAIN(0) | TX<br>CHAIN(1) |
|---------------------|-----------------------------------------|----------------|----------------|
| <b>A</b>            | <b>802.11 a</b>                         | √              |                |
| B                   | 802.11 a                                |                | √              |
| C                   | DRAFT 802.11n(20MHz) for MCS0~7         | √              | √              |
| <b>D</b>            | <b>DRAFT 802.11n(20MHz) for MCS8~15</b> | √              | √              |
| E                   | DRAFT 802.11n(40MHz) for MCS0~7         | √              | √              |
| <b>F</b>            | <b>DRAFT 802.11n(40MHz) for MCS8~15</b> | √              | √              |

Note:

1. The above information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
2. Mode A, D and F the worst modes, were selected as representative mode for the report.

### POWER LINE CONDUCTED EMISSION TEST:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| MODE    | AVAILABLE<br>CHANNEL | TESTED<br>CHANNEL | MODULATION<br>TECHNOLOGY | MODULATION<br>TYPE | DATA RATE<br>(Mbps) | TX<br>COMBINATION |
|---------|----------------------|-------------------|--------------------------|--------------------|---------------------|-------------------|
| 802.11a | 36 to 140            | 36                | OFDM                     | BPSK               | 6                   | A                 |

### **RADIATED EMISSION TEST (BELOW 1 GHz):**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| MODE    | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) | TX COMBINATION |
|---------|-------------------|----------------|-----------------------|-----------------|------------------|----------------|
| 802.11a | 36 to 140         | 36             | OFDM                  | BPSK            | 6                | A              |

### **RADIATED EMISSION TEST (ABOVE 1 GHz):**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| MODE                  | AVAILABLE CHANNEL | TESTED CHANNEL                        | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) | TX COMBINATION |
|-----------------------|-------------------|---------------------------------------|-----------------------|-----------------|------------------|----------------|
| 802.11a               | 36 to 140         | 36, 40, 48, 52, 60, 64, 100, 120, 140 | OFDM                  | BPSK            | 6                | A              |
| Draft 802.11n (20MHz) | 36 to 140         | 36, 40, 48, 52, 60, 64, 100, 120, 140 | OFDM                  | BPSK            | 13               | D              |
| Draft 802.11n (40MHz) | 38 to 134         | 38, 46, 54, 62, 102, 118, 134         | OFDM                  | BPSK            | 27               | F              |

### **BANDEDGE MEASUREMENT:**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| MODE                  | AVAILABLE CHANNEL | TESTED CHANNEL   | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) | TX COMBINATION |
|-----------------------|-------------------|------------------|-----------------------|-----------------|------------------|----------------|
| 802.11a               | 36 to 140         | 36, 64, 100, 104 | OFDM                  | BPSK            | 6                | A              |
| Draft 802.11n (20MHz) | 36 to 140         | 36, 64, 100, 104 | OFDM                  | BPSK            | 13               | D              |
| Draft 802.11n (40MHz) | 38 to 134         | 38, 62, 102, 134 | OFDM                  | BPSK            | 27               | F              |

### **ANTENNA PORT CONDUCTED MEASUREMENT:**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| MODE                  | AVAILABLE CHANNEL | TESTED CHANNEL                        | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) | TX COMBINATION |
|-----------------------|-------------------|---------------------------------------|-----------------------|-----------------|------------------|----------------|
| 802.11a               | 36 to 140         | 36, 40, 48, 52, 60, 64, 100, 120, 140 | OFDM                  | BPSK            | 6                | A              |
| Draft 802.11n (20MHz) | 36 to 140         | 36, 40, 48, 52, 60, 64, 100, 120, 140 | OFDM                  | BPSK            | 13               | D              |
| Draft 802.11n (40MHz) | 38 to 134         | 38, 46, 54, 62, 102, 118, 134         | OFDM                  | BPSK            | 27               | F              |

※ After verification, bandwidth & peak power excursion as show worst chain in report by investigations.

### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an 802.11a/b/g/n Wireless LAN Module. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart E (15.407)**

**ANSI C63.4-2003**

All test items have been performed and recorded as per the above standards.

**NOTE:** 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.

### 3.4 DESCRIPTION OF SUPPORT UNITS

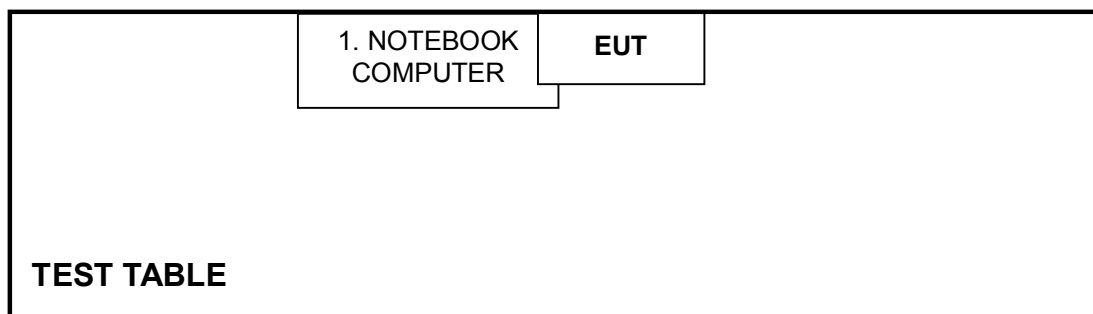
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| NO. | PRODUCT              | BRAND | MODEL NO. | SERIAL NO. | FCC ID  |
|-----|----------------------|-------|-----------|------------|---------|
| 1   | NOTEBOOK<br>COMPUTER | DELL  | PP18L     | 6976685584 | FCC DoC |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|-----|-----------------------------------------------------|
| 1   | NA                                                  |

**NOTE:** All power cords of the above support units are non shielded (1.8m).

### 3.5 CONFIGURATION OF SYSTEM UNDER TEST



## 4. TEST TYPES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

| FREQUENCY OF EMISSION (MHz) | CONDUCTED LIMIT (dB $\mu$ V) |          |
|-----------------------------|------------------------------|----------|
|                             | Quasi-peak                   | Average  |
| 0.15-0.5                    | 66 to 56                     | 56 to 46 |
| 0.5-5                       | 56                           | 46       |
| 5-30                        | 60                           | 50       |

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
  2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
  3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER                           | MODEL NO.                 | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|------------------------------------------------------|---------------------------|------------|-----------------|------------------|
| Test Receiver                                        | ESCS 30                   | 100375     | Mar. 23, 2009   | Mar. 22, 2010    |
| Line-Impedance Stabilization Network(for Peripheral) | ENV-216                   | 100071     | Nov. 26, 2008   | Nov. 25, 2009    |
| Line-Impedance Stabilization Network (for EUT)       | ESH3-Z5                   | 848773/004 | Nov. 05, 2008   | Nov. 04, 2009    |
| RF Cable (JYEBAO)                                    | 5DFB                      | COBCAB-001 | Aug. 15, 2008   | Aug. 14, 2009    |
| 50 ohms Terminator                                   | 50                        | 3          | Nov. 05, 2008   | Nov. 04, 2009    |
| Software                                             | BV<br>ADT_Cond_V7.<br>3.7 | NA         | NA              | NA               |

**Note:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.

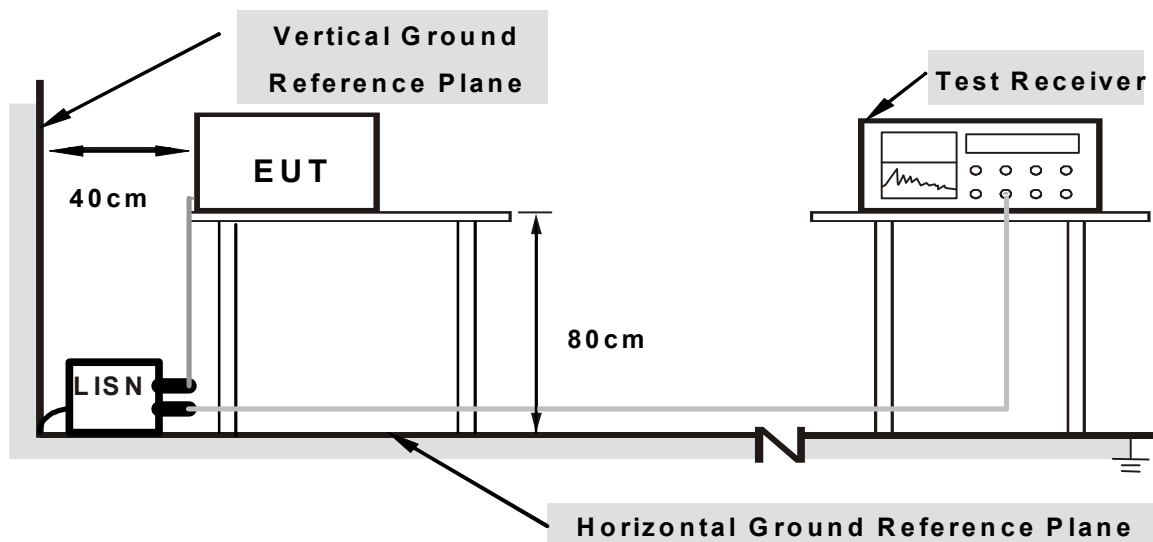
#### 4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs
- b. provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- c. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- d. The frequency range from 150kHz to 30MHz was searched. Emission level under (Limit – 20dB) was not recorded.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.5 TEST SETUP



**Note: 1.Support units were connected to second LISN.**

**2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.1.6 EUT OPERATING CONDITIONS

1. Connect the EUT with the support unit 1 (Notebook computer) which placed on a testing table.
2. Support unit 1 (Notebook computer) run test program “wl command” to enable EUT under transmission condition continuously at specific channel frequency.

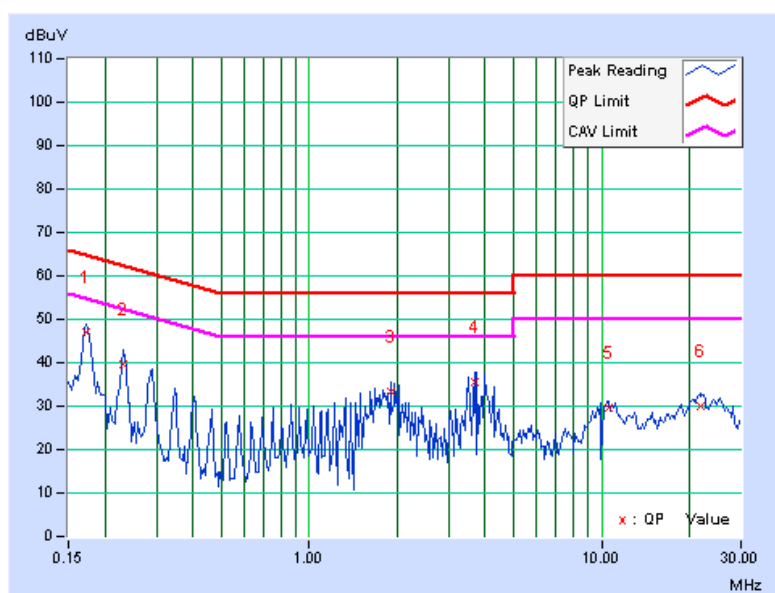
#### 4.1.7 TEST RESULTS

##### 802.11a OFDM MODULATION:

| EUT TEST CONDITION       |                         | MEASUREMENT DETAIL   |               |
|--------------------------|-------------------------|----------------------|---------------|
| CHANNEL                  | Channel 36              | PHASE                | Line (L)      |
| MODULATION TYPE          | BPSK                    | 6dB BANDWIDTH        | 9 kHz         |
| TRANSFER RATE            | 6Mbps                   | INPUT POWER (SYSTEM) | 120Vac, 60 Hz |
| ENVIRONMENTAL CONDITIONS | 28deg. C, 60%RH, 965hPa | TESTED BY            | Rex Huang     |

| No | Freq.  | Corr.       | Reading Value  |               | Emission Level |               | Limit          |               | Margin    |          |
|----|--------|-------------|----------------|---------------|----------------|---------------|----------------|---------------|-----------|----------|
|    | [MHz]  | Factor [dB] | [dB (uV)] Q.P. | [dB (uV)] AV. | [dB (uV)] Q.P. | [dB (uV)] AV. | [dB (uV)] Q.P. | [dB (uV)] AV. | [dB] Q.P. | [dB] AV. |
| +1 | 0.173  | 0.20        | 46.72          | -             | 46.92          | -             | 64.79          | 54.79         | -17.87    | -        |
| 2  | 0.232  | 0.26        | 39.50          | -             | 39.76          | -             | 62.38          | 52.38         | -22.62    | -        |
| 3  | 1.906  | 0.40        | 32.77          | -             | 33.17          | -             | 56.00          | 46.00         | -22.83    | -        |
| 4  | 3.691  | 0.55        | 35.12          | -             | 35.67          | -             | 56.00          | 46.00         | -20.33    | -        |
| 5  | 10.563 | 0.75        | 28.77          | -             | 29.52          | -             | 60.00          | 50.00         | -30.48    | -        |
| 6  | 21.816 | 1.57        | 28.36          | -             | 29.93          | -             | 60.00          | 50.00         | -30.07    | -        |

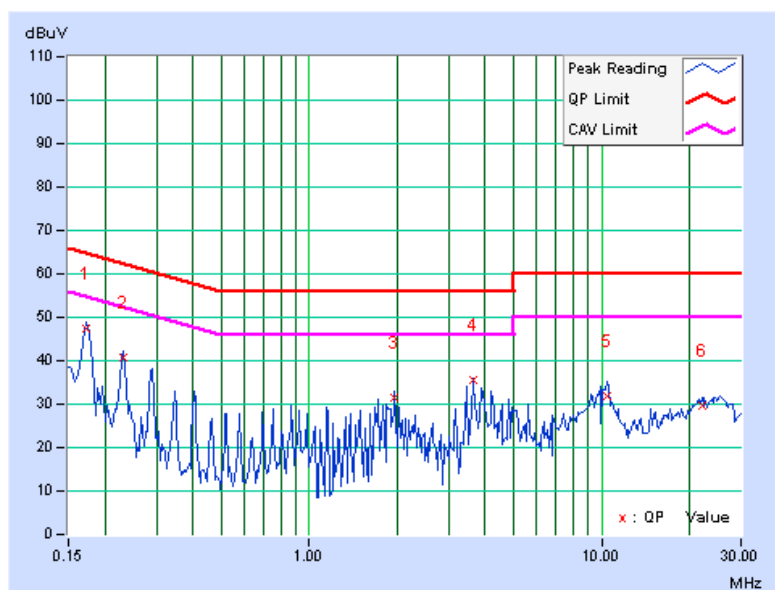
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



| EUT TEST CONDITION       |                         | MEASUREMENT DETAIL   |               |
|--------------------------|-------------------------|----------------------|---------------|
| CHANNEL                  | Channel 36              | PHASE                | Neutral (N)   |
| MODULATION TYPE          | BPSK                    | 6dB BANDWIDTH        | 9 kHz         |
| TRANSFER RATE            | 6Mbps                   | INPUT POWER (SYSTEM) | 120Vac, 60 Hz |
| ENVIRONMENTAL CONDITIONS | 28deg. C, 60%RH, 965hPa | TESTED BY            | Rex Huang     |

| No | Freq.  | Corr.       | Reading Value  |               | Emission Level |               | Limit          |               | Margin    |          |
|----|--------|-------------|----------------|---------------|----------------|---------------|----------------|---------------|-----------|----------|
|    | [MHz]  | Factor [dB] | Q.P. [dB (uV)] | AV. [dB (uV)] | Q.P. [dB (uV)] | AV. [dB (uV)] | Q.P. [dB (uV)] | AV. [dB (uV)] | Q.P. [dB] | AV. [dB] |
| +1 | 0.173  | 0.13        | 47.31          | -             | 47.44          | -             | 64.79          | 54.79         | -17.35    | -        |
| 2  | 0.232  | 0.19        | 40.53          | -             | 40.72          | -             | 62.38          | 52.38         | -21.66    | -        |
| 3  | 1.965  | 0.33        | 31.28          | -             | 31.61          | -             | 56.00          | 46.00         | -24.39    | -        |
| 4  | 3.637  | 0.48        | 35.10          | -             | 35.58          | -             | 56.00          | 46.00         | -20.42    | -        |
| 5  | 10.449 | 0.60        | 31.15          | -             | 31.75          | -             | 60.00          | 50.00         | -28.25    | -        |
| 6  | 22.047 | 1.30        | 28.46          | -             | 29.76          | -             | 60.00          | 50.00         | -30.24    | -        |

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

| Frequencies (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 0.009-0.490       | 2400/F(kHz)                       | 300                           |
| 0.490-1.705       | 24000/F(kHz)                      | 30                            |
| 1.705-30.0        | 30                                | 30                            |
| 30-88             | 100                               | 3                             |
| 88-216            | 150                               | 3                             |
| 216-960           | 200                               | 3                             |
| Above 960         | 500                               | 3                             |

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

#### 4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

| Frequencies (MHz) | EIRP Limit (dBm) | Equivalent Field Strength at 3m (dBμV/m) *note 3 |
|-------------------|------------------|--------------------------------------------------|
| 5150~5250         | -27              | 68.3                                             |
| 5250~5350         | -27              | 68.3                                             |
| 5470~5725         | -27              | 68.3                                             |
| 5725~5825         | -27 *note 1      | 68.3                                             |
|                   | -17 *note 2      | 78.3                                             |

**NOTE:**

1. For frequencies 10MHz or greater above or below the band edge.
2. All emissions within the frequency range from the band edge to 10MHz above or below the band edge.
3. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$

#### 4.2.3 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER           | MODEL NO.                | SERIAL NO.      | CALIBRATED DATE | CALIBRATED UNTIL |
|--------------------------------------|--------------------------|-----------------|-----------------|------------------|
| ROHDE & SCHWARZ Spectrum Analyzer    | FSP40                    | 100036          | Dec. 9, 2008    | Dec. 8, 2009     |
| HP Pre_Amplifier                     | 8449B                    | 3008A01923      | Nov. 10, 2008   | Nov. 9, 2009     |
| ROHDE & SCHWARZ Test Receiver        | ESCS30                   | 847124/029      | Sep. 9, 2008    | Sep. 8, 2009     |
| SCHWARZBECK TRILOG Broadband Antenna | VULB 9168                | 138             | April 29, 2009  | April 28, 2010   |
| Schwarzbeck Horn_Antenna             | BBHA9120                 | D124            | Dec. 09, 2008   | Dec. 08, 2009    |
| Schwarzbeck Horn_Antenna             | BBHA 9170                | BBHA9170153     | Jan. 22, 2009   | Jan. 21, 2010    |
| RF Switches                          | EMH-011                  | 08009           | Oct. 07, 2008   | Oct. 06, 2009    |
| RF CABLE (Chaintek)                  | Sucoflex 106             | 28077           | Aug. 15, 2008   | Aug. 14, 2009    |
| RF Cable                             | 8DFB                     | STCCAB-30M-1GHz | Oct. 07, 2008   | Oct. 06, 2009    |
| Software                             | ADT_Radiated_V7.6.15.9.2 | NA              | NA              | NA               |
| CT Antenna Tower & Turn Table        | NA                       | NA              | NA              | NA               |

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.

3. The test was performed in Open Site No. C.

4. The FCC Site Registration No. is 656396.

5. The VCCI Site Registration No. is R-1626.

6. The CANADA Site Registration No. is IC 7450G-3.

#### 4.2.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

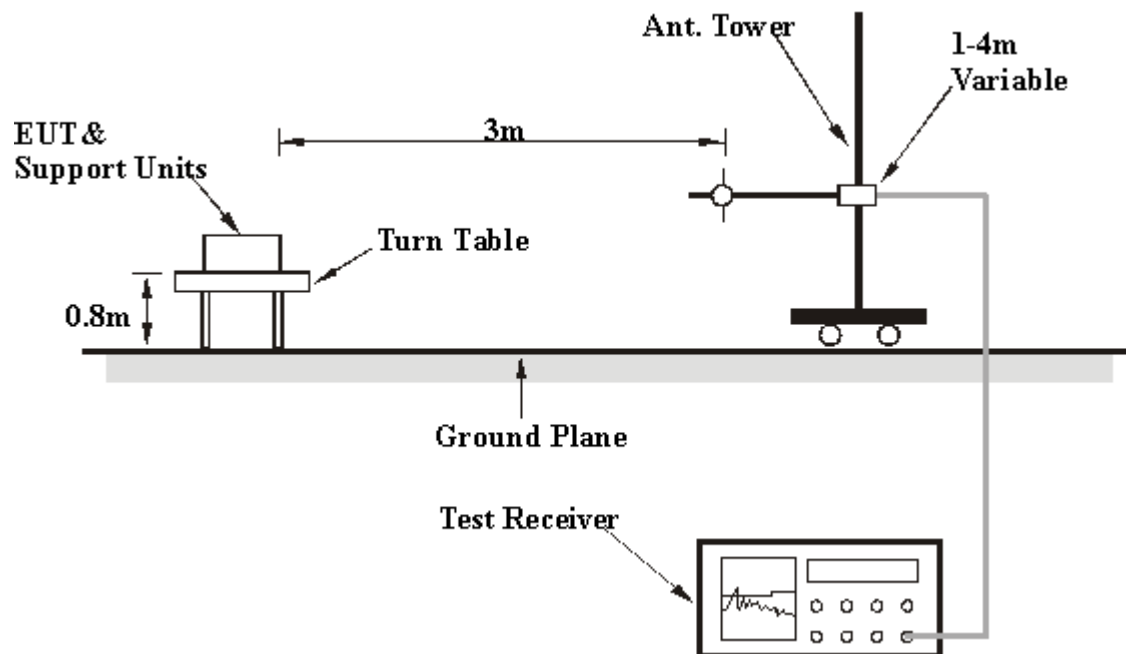
**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

#### 4.2.5 DEVIATION FROM TEST STANDARD

No deviation

#### 4.2.6 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

## Below 1GHz Test Data

### 4.2.8 TEST RESULTS

#### BELOW 1GHz WORST-CASE DATA : 802.11a OFDM MODULATION

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |               |
|--------------------------|-------------------------------|--------------------|---------------|
| CHANNEL                  | Channel 36                    | FREQUENCY RANGE    | Below 1000MHz |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Quasi-Peak    |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 61.0%RH<br>965hPa | TESTED BY          | Eric Lee      |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 166.48      | 30.20 QP                | 43.50          | -13.30      | 1.74 H             | 249                  | 14.97            | 15.23                    |
| 2                                                   | 233.01      | 35.63 QP                | 46.00          | -10.37      | 1.02 H             | 233                  | 22.01            | 13.62                    |
| 3                                                   | 240.01      | 42.10 QP                | 46.00          | -3.90       | 1.02 H             | 23                   | 28.22            | 13.88                    |
| 4                                                   | 299.61      | 38.21 QP                | 46.00          | -7.79       | 1.02 H             | 298                  | 21.45            | 16.76                    |
| 5                                                   | 432.78      | 34.13 QP                | 46.00          | -11.87      | 1.74 H             | 54                   | 13.65            | 20.48                    |
| 6                                                   | 675.01      | 32.13 QP                | 46.00          | -13.87      | 1.65 H             | 52                   | 6.36             | 25.77                    |
| 7                                                   | 960.00      | 42.10 QP                | 46.00          | -3.90       | 1.85 H             | 213                  | 11.79            | 30.31                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 166.49      | 24.25 QP                | 43.50          | -19.25      | 1.01 V             | 245                  | 9.02             | 15.23                    |
| 2                                                   | 233.01      | 24.63 QP                | 46.00          | -21.37      | 1.54 V             | 21                   | 11.01            | 13.62                    |
| 3                                                   | 240.00      | 30.20 QP                | 46.00          | -15.80      | 1.02 V             | 36                   | 16.32            | 13.88                    |
| 4                                                   | 299.57      | 32.13 QP                | 46.00          | -13.87      | 1.32 V             | 62                   | 15.37            | 16.76                    |
| 5                                                   | 433.00      | 29.98 QP                | 46.00          | -16.02      | 1.52 V             | 235                  | 9.50             | 20.48                    |
| 6                                                   | 500.00      | 33.39 QP                | 46.00          | -12.61      | 1.59 V             | 175                  | 10.90            | 22.49                    |
| 7                                                   | 960.00      | 37.20 QP                | 46.00          | -8.80       | 1.40 V             | 72                   | 6.89             | 30.31                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.

## Above 1GHz Test Data

### 4.2.9 TEST RESULTS

#### 802.11a OFDM MODULATION

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 36                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 69.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5147.80     | 59.44 PK                | 74.00          | -14.56      | 1.00 H             | 339                  | 22.18            | 37.26                    |
| 2                                                   | 5147.80     | 44.19 AV                | 54.00          | -9.81       | 1.00 H             | 339                  | 6.93             | 37.26                    |
| 3                                                   | *5180.00    | 105.17 PK               |                |             | 1.00 H             | 165                  | 67.91            | 37.26                    |
| 4                                                   | *5180.00    | 95.60 AV                |                |             | 1.00 H             | 165                  | 58.34            | 37.26                    |
| 5                                                   | #10360.00   | 53.18 PK                | 68.30          | -15.12      | 1.00 H             | 292                  | 6.54             | 46.64                    |
| 6                                                   | 15540.00    | 60.80 PK                | 74.00          | -13.20      | 1.35 H             | 266                  | 13.25            | 47.55                    |
| 7                                                   | 15540.00    | 44.50 AV                | 54.00          | -9.50       | 1.35 H             | 266                  | -3.05            | 47.55                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 4985.30     | 54.09 PK                | 74.00          | -19.91      | 1.20 V             | 159                  | 16.87            | 37.22                    |
| 2                                                   | 4985.30     | 41.21 AV                | 54.00          | -12.79      | 1.20 V             | 159                  | 3.99             | 37.22                    |
| 3                                                   | *5180.00    | 96.37 PK                |                |             | 1.10 V             | 272                  | 59.11            | 37.26                    |
| 4                                                   | *5180.00    | 85.93 AV                |                |             | 1.10 V             | 272                  | 48.67            | 37.26                    |
| 5                                                   | #10360.00   | 57.20 PK                | 68.30          | -11.10      | 1.00 V             | 199                  | 10.56            | 46.64                    |
| 6                                                   | 15540.00    | 62.30 PK                | 74.00          | -11.70      | 1.29 V             | 346                  | 14.75            | 47.55                    |
| 7                                                   | 15540.00    | 49.20 AV                | 54.00          | -4.80       | 1.29 V             | 346                  | 1.65             | 47.55                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.
  6. “#”:The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 40                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 69.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5200.00    | 105.38 PK               |                |             | 1.00 H             | 169                  | 68.12            | 37.26                    |
| 2                                                   | *5200.00    | 95.20 AV                |                |             | 1.00 H             | 169                  | 57.94            | 37.26                    |
| 3                                                   | #10400.00   | 53.42 PK                | 68.30          | -14.88      | 1.00 H             | 341                  | 6.75             | 46.67                    |
| 4                                                   | 15600.00    | 56.40 PK                | 74.00          | -17.60      | 1.41 H             | 24                   | 8.96             | 47.44                    |
| 5                                                   | 15600.00    | 44.65 AV                | 54.00          | -9.35       | 1.41 H             | 24                   | -2.79            | 47.44                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5200.00    | 97.31 PK                |                |             | 1.08 V             | 223                  | 60.05            | 37.26                    |
| 2                                                   | *5200.00    | 84.92 AV                |                |             | 1.08 V             | 223                  | 47.66            | 37.26                    |
| 3                                                   | #10400.00   | 56.90 PK                | 68.30          | -11.40      | 1.23 V             | 137                  | 10.23            | 46.67                    |
| 4                                                   | 15600.00    | 61.20 PK                | 74.00          | -12.80      | 1.30 V             | 347                  | 13.76            | 47.44                    |
| 5                                                   | 15600.00    | 46.90 AV                | 54.00          | -7.10       | 1.30 V             | 347                  | -0.54            | 47.44                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. " \* ": Fundamental frequency.
  6. "#": The radiated frequency is out the restricted band.

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 48                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 69.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5240.00    | 105.94 PK               |                |             | 1.00 H             | 163                  | 68.68            | 37.26                    |
| 2                                                   | *5240.00    | 95.67 AV                |                |             | 1.00 H             | 163                  | 58.41            | 37.26                    |
| 3                                                   | #10480.00   | 54.70 PK                | 68.30          | -13.60      | 1.21 H             | 37                   | 7.97             | 46.73                    |
| 4                                                   | 15720.00    | 60.30 PK                | 74.00          | -13.70      | 1.21 H             | 34                   | 13.09            | 47.21                    |
| 5                                                   | 15720.00    | 46.10 AV                | 54.00          | -7.90       | 1.21 H             | 34                   | -1.11            | 47.21                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5240.00    | 97.21 PK                |                |             | 1.00 V             | 49                   | 59.95            | 37.26                    |
| 2                                                   | *5240.00    | 85.90 AV                |                |             | 1.00 V             | 49                   | 48.64            | 37.26                    |
| 3                                                   | #10480.00   | 55.19 PK                | 68.30          | -13.11      | 1.34 V             | 25                   | 8.46             | 46.73                    |
| 4                                                   | 15720.00    | 60.20 PK                | 74.00          | -13.80      | 1.33 V             | 345                  | 12.99            | 47.21                    |
| 5                                                   | 15720.00    | 46.60 AV                | 54.00          | -7.40       | 1.33 V             | 345                  | -0.61            | 47.21                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. " \* ": Fundamental frequency.  
6. "#": The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 52                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 69.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5260.00    | 106.20 PK               |                |             | 1.02 H             | 158                  | 68.94            | 37.26                    |
| 2                                                   | *5260.00    | 95.92 AV                |                |             | 1.02 H             | 158                  | 58.66            | 37.26                    |
| 3                                                   | #10520.00   | 55.10 PK                | 68.30          | -13.20      | 1.03 H             | 160                  | 8.33             | 46.77                    |
| 4                                                   | 15780.00    | 59.20 PK                | 74.00          | -14.80      | 1.34 H             | 100                  | 12.10            | 47.10                    |
| 5                                                   | 15780.00    | 44.38 AV                | 54.00          | -9.62       | 1.34 H             | 100                  | -2.72            | 47.10                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5260.00    | 97.60 PK                |                |             | 1.04 V             | 134                  | 60.34            | 37.26                    |
| 2                                                   | *5260.00    | 86.20 AV                |                |             | 1.04 V             | 134                  | 48.94            | 37.26                    |
| 3                                                   | #10520.00   | 55.52 PK                | 68.30          | -12.78      | 1.21 V             | 23                   | 8.75             | 46.77                    |
| 4                                                   | 15780.00    | 59.10 PK                | 74.00          | -14.90      | 1.27 V             | 343                  | 12.00            | 47.10                    |
| 5                                                   | 15780.00    | 44.80 AV                | 54.00          | -9.20       | 1.27 V             | 343                  | -2.30            | 47.10                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. " \* ": Fundamental frequency.
  6. "#": The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 60                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 69.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5300.00    | 105.08 PK               |                |             | 1.03 H             | 144                  | 67.82            | 37.26                    |
| 2                                                   | *5300.00    | 95.12 AV                |                |             | 1.03 H             | 144                  | 57.86            | 37.26                    |
| 3                                                   | 10600.00    | 54.23 PK                | 74.00          | -19.77      | 1.00 H             | 138                  | 7.40             | 46.83                    |
| 4                                                   | 10600.00    | 41.31 AV                | 54.00          | -12.69      | 1.00 H             | 138                  | -5.52            | 46.83                    |
| 5                                                   | 15900.00    | 59.60 PK                | 74.00          | -14.40      | 1.21 H             | 123                  | 12.73            | 46.87                    |
| 6                                                   | 15900.00    | 43.71 AV                | 54.00          | -10.29      | 1.21 H             | 123                  | -3.16            | 46.87                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5300.00    | 98.21 PK                |                |             | 1.21 V             | 270                  | 60.95            | 37.26                    |
| 2                                                   | *5300.00    | 85.94 AV                |                |             | 1.21 V             | 270                  | 48.68            | 37.26                    |
| 3                                                   | 10600.00    | 54.80 PK                | 74.00          | -19.20      | 1.24 V             | 107                  | 7.97             | 46.83                    |
| 4                                                   | 10600.00    | 41.55 AV                | 54.00          | -12.45      | 1.24 V             | 107                  | -5.28            | 46.83                    |
| 5                                                   | 15900.00    | 59.70 PK                | 74.00          | -14.30      | 1.29 V             | 346                  | 12.83            | 46.87                    |
| 6                                                   | 15900.00    | 43.10 AV                | 54.00          | -10.90      | 1.29 V             | 346                  | -3.77            | 46.87                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. “ \* ”: Fundamental frequency.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 64                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 69.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5320.00    | 105.76 PK               |                |             | 1.03 H             | 162                  | 68.50            | 37.26                    |
| 2                                                   | *5320.00    | 95.68 AV                |                |             | 1.03 H             | 162                  | 58.42            | 37.26                    |
| 3                                                   | 5352.57     | 60.28 PK                | 74.00          | -13.72      | 1.00 H             | 165                  | 23.02            | 37.26                    |
| 4                                                   | 5352.57     | 45.69 AV                | 54.00          | -8.31       | 1.00 H             | 165                  | 8.43             | 37.26                    |
| 5                                                   | 10640.00    | 55.24 PK                | 74.00          | -18.76      | 1.02 H             | 245                  | 8.38             | 46.86                    |
| 6                                                   | 10640.00    | 42.12 AV                | 54.00          | -11.88      | 1.02 H             | 245                  | -4.74            | 46.86                    |
| 7                                                   | 15960.00    | 60.30 PK                | 74.00          | -13.70      | 1.34 H             | 28                   | 13.54            | 46.76                    |
| 8                                                   | 15960.00    | 44.90 AV                | 54.00          | -9.10       | 1.34 H             | 28                   | -1.86            | 46.76                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5320.00    | 98.47 PK                |                |             | 1.12 V             | 110                  | 61.21            | 37.26                    |
| 2                                                   | *5320.00    | 88.12 AV                |                |             | 1.12 V             | 110                  | 50.86            | 37.26                    |
| 3                                                   | 5352.57     | 54.94 PK                | 74.00          | -19.06      | 1.23 V             | 289                  | 17.68            | 37.26                    |
| 4                                                   | 5352.57     | 41.86 AV                | 54.00          | -12.14      | 1.23 V             | 289                  | 4.60             | 37.26                    |
| 5                                                   | 10640.00    | 55.10 PK                | 74.00          | -18.90      | 1.32 V             | 326                  | 8.24             | 46.86                    |
| 6                                                   | 10640.00    | 41.90 AV                | 54.00          | -12.10      | 1.32 V             | 326                  | -4.96            | 46.86                    |
| 7                                                   | 15960.00    | 60.20 PK                | 74.00          | -13.80      | 1.31 V             | 345                  | 13.44            | 46.76                    |
| 8                                                   | 15960.00    | 43.11 AV                | 54.00          | -10.89      | 1.31 V             | 345                  | -3.65            | 46.76                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 100                   | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 69.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5453.22     | 62.42 PK                | 74.00          | -11.58      | 1.21 H             | 164                  | 25.16            | 37.26                    |
| 2                                                   | 5453.22     | 43.15 AV                | 54.00          | -10.85      | 1.21 H             | 164                  | 5.89             | 37.26                    |
| 3                                                   | #5470.00    | 65.30 PK                | 68.30          | -3.00       | 1.21 H             | 352                  | 28.04            | 37.26                    |
| 4                                                   | *5500.00    | 104.37 PK               |                |             | 1.19 H             | 157                  | 67.11            | 37.26                    |
| 5                                                   | *5500.00    | 95.16 AV                |                |             | 1.19 H             | 157                  | 57.90            | 37.26                    |
| 6                                                   | 11000.00    | 53.24 PK                | 74.00          | -20.76      | 1.17 H             | 312                  | 6.09             | 47.15                    |
| 7                                                   | 11000.00    | 42.13 AV                | 54.00          | -11.87      | 1.17 H             | 312                  | -5.02            | 47.15                    |
| 8                                                   | 16000.00    | 54.31 PK                | 74.00          | -19.69      | 1.21 H             | 134                  | 7.63             | 46.68                    |
| 9                                                   | 16000.00    | 43.11 AV                | 54.00          | -10.89      | 1.21 H             | 134                  | -3.57            | 46.68                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5456.33     | 53.82 PK                | 74.00          | -20.18      | 1.11 V             | 53                   | 16.56            | 37.26                    |
| 2                                                   | 5456.33     | 41.14 AV                | 54.00          | -12.86      | 1.11 V             | 53                   | 3.88             | 37.26                    |
| 3                                                   | #5470.00    | 57.12 PK                | 68.30          | -11.18      | 1.23 V             | 107                  | 19.86            | 37.26                    |
| 4                                                   | *5500.00    | 97.60 PK                |                |             | 1.21 V             | 51                   | 60.34            | 37.26                    |
| 5                                                   | *5500.00    | 86.71 AV                |                |             | 1.21 V             | 51                   | 49.45            | 37.26                    |
| 6                                                   | 11000.00    | 53.90 PK                | 74.00          | -20.10      | 1.54 V             | 107                  | 6.75             | 47.15                    |
| 7                                                   | 11000.00    | 43.14 AV                | 54.00          | -10.86      | 1.54 V             | 107                  | -4.01            | 47.15                    |
| 8                                                   | 16000.00    | 55.21 PK                | 74.00          | -18.79      | 1.95 V             | 153                  | 8.53             | 46.68                    |
| 9                                                   | 16000.00    | 43.28 AV                | 54.00          | -10.72      | 1.95 V             | 153                  | -3.40            | 46.68                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. “ \* ”: Fundamental frequency.  
6. “#”:The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 120                   | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 69.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5600.00    | 105.18 PK               |                |             | 1.17 H             | 98                   | 67.64            | 37.54                    |
| 2                                                   | *5600.00    | 95.21 AV                |                |             | 1.17 H             | 98                   | 57.67            | 37.54                    |
| 3                                                   | 11200.00    | 56.30 PK                | 74.00          | -17.70      | 1.41 H             | 108                  | 9.12             | 47.18                    |
| 4                                                   | 11200.00    | 42.90 AV                | 54.00          | -11.10      | 1.41 H             | 108                  | -4.28            | 47.18                    |
| 5                                                   | #16800.00   | 59.20 PK                | 68.30          | -9.10       | 1.01 H             | 131                  | 9.15             | 50.05                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5600.00    | 97.30 PK                |                |             | 1.10 V             | 24                   | 59.76            | 37.54                    |
| 2                                                   | *5600.00    | 87.20 AV                |                |             | 1.10 V             | 24                   | 49.66            | 37.54                    |
| 3                                                   | 11200.00    | 55.30 PK                | 74.00          | -18.70      | 1.09 V             | 124                  | 8.12             | 47.18                    |
| 4                                                   | 11200.00    | 41.80 AV                | 54.00          | -12.20      | 1.09 V             | 124                  | -5.38            | 47.18                    |
| 5                                                   | #16800.00   | 60.40 PK                | 68.30          | -7.90       | 1.28 V             | 347                  | 10.35            | 50.05                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. " \* ": Fundamental frequency.
  6. "#": The radiated frequency is out the restricted band.



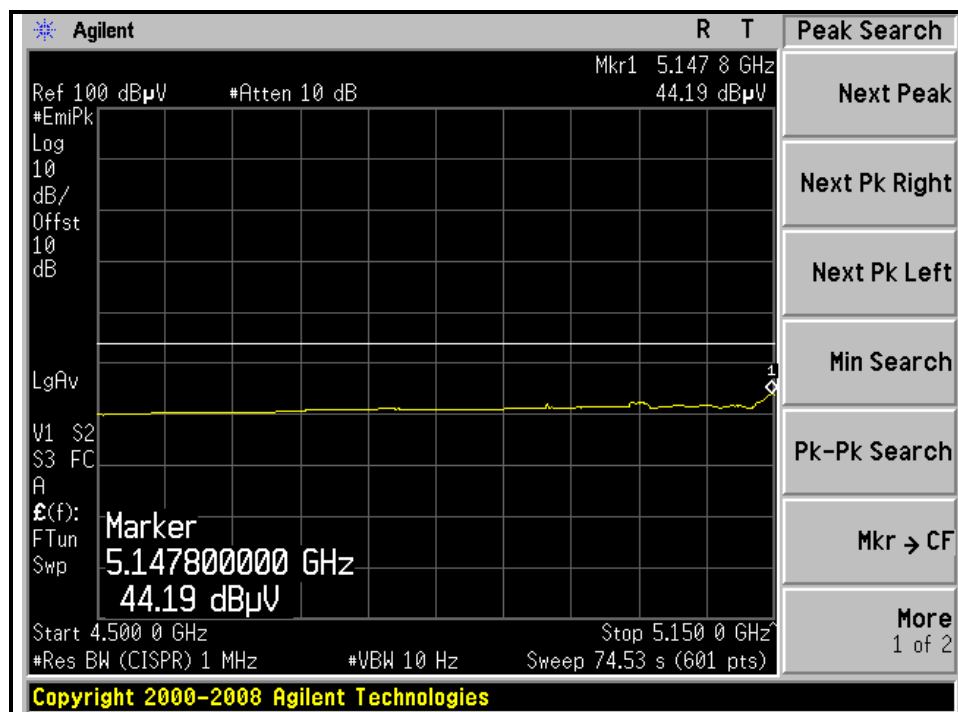
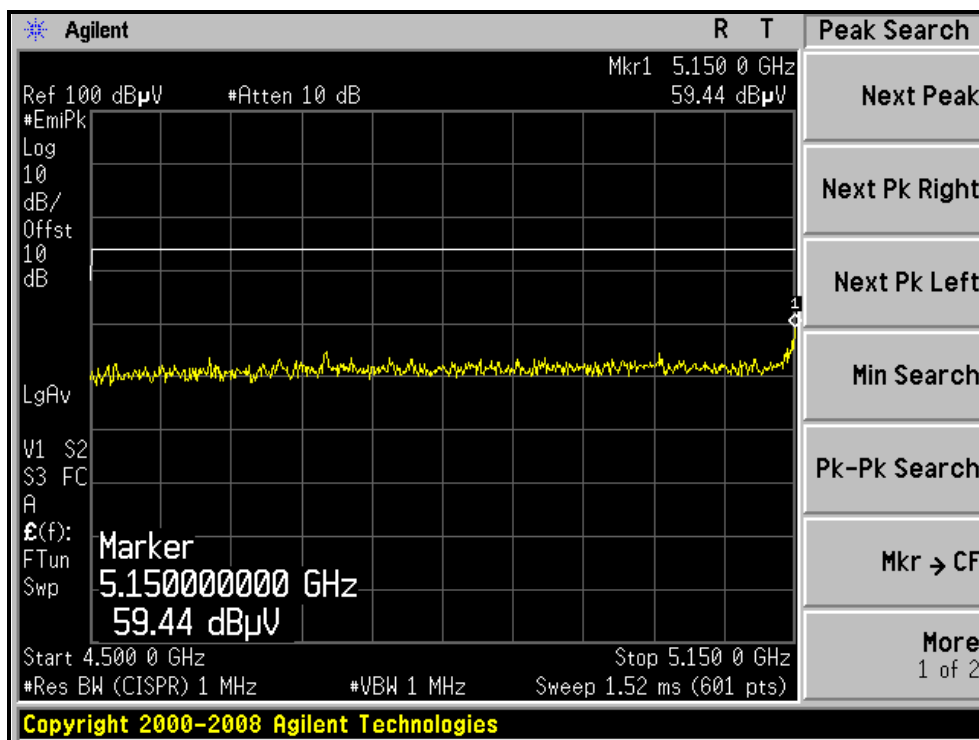
A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 140                   | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 25.0deg. C, 69.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

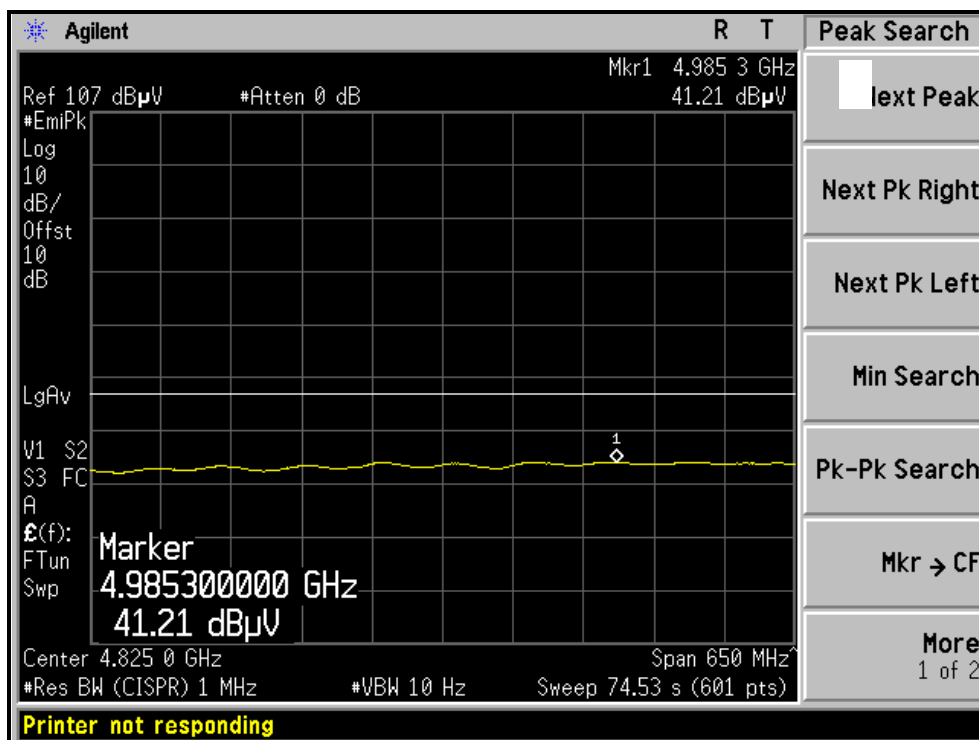
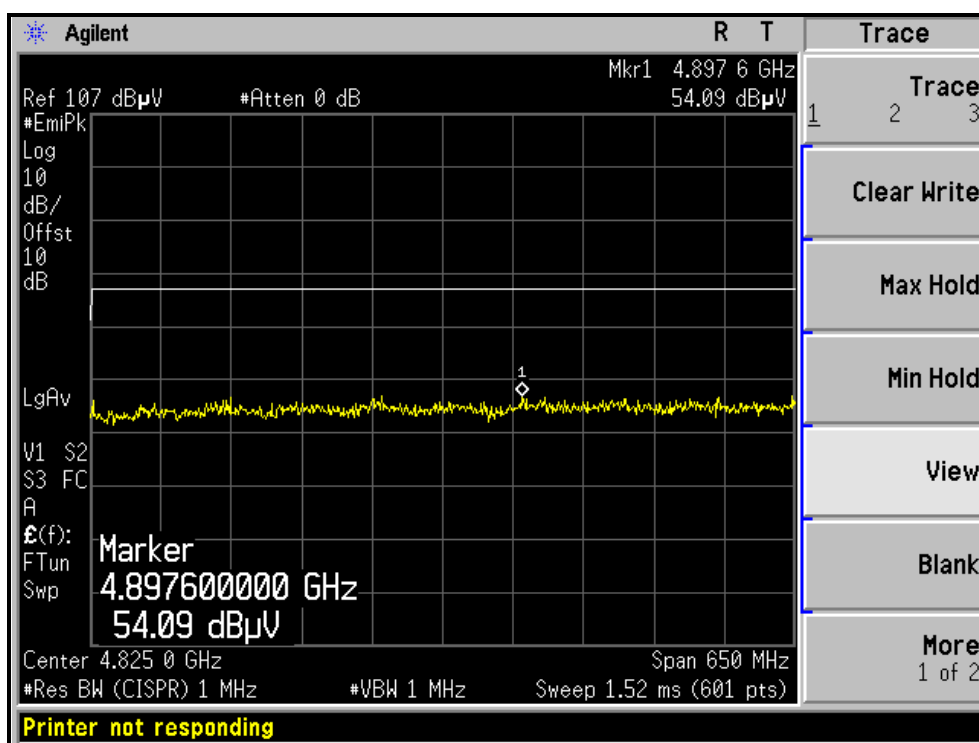
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5700.00    | 105.25 PK               |                |             | 1.18 H             | 6                    | 67.42            | 37.83                    |
| 2                                                   | *5700.00    | 94.75 AV                |                |             | 1.18 H             | 6                    | 56.92            | 37.83                    |
| 3                                                   | #5725.00    | 66.40 PK                | 68.30          | -1.90       | 1.00 H             | 74                   | 28.50            | 37.90                    |
| 4                                                   | 11400.00    | 55.70 PK                | 74.00          | -18.30      | 1.31 H             | 24                   | 8.49             | 47.21                    |
| 5                                                   | 11400.00    | 43.10 AV                | 54.00          | -10.90      | 1.31 H             | 24                   | -4.11            | 47.21                    |
| 6                                                   | 17100.00    | 59.80 PK                | 68.30          | -8.50       | 1.21 H             | 34                   | 8.40             | 51.40                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5700.00    | 98.21 PK                |                |             | 1.31 V             | 48                   | 60.38            | 37.83                    |
| 2                                                   | *5700.00    | 88.94 AV                |                |             | 1.31 V             | 48                   | 51.11            | 37.83                    |
| 3                                                   | #5725.00    | 56.81 PK                | 68.30          | -11.49      | 1.24 V             | 131                  | 18.91            | 37.90                    |
| 4                                                   | 11400.00    | 54.90 PK                | 74.00          | -19.10      | 1.27 V             | 38                   | 7.69             | 47.21                    |
| 5                                                   | 11400.00    | 42.91 AV                | 54.00          | -11.09      | 1.27 V             | 38                   | -4.30            | 47.21                    |
| 6                                                   | 17100.00    | 61.30 PK                | 68.30          | -7.00       | 1.22 V             | 339                  | 9.90             | 51.40                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
 3. The other emission levels were very low against the limit.  
 4. Margin value = Emission level – Limit value.  
 5. “ \* “: Fundamental frequency.  
 6. “#”:The radiated frequency is out the restricted band.

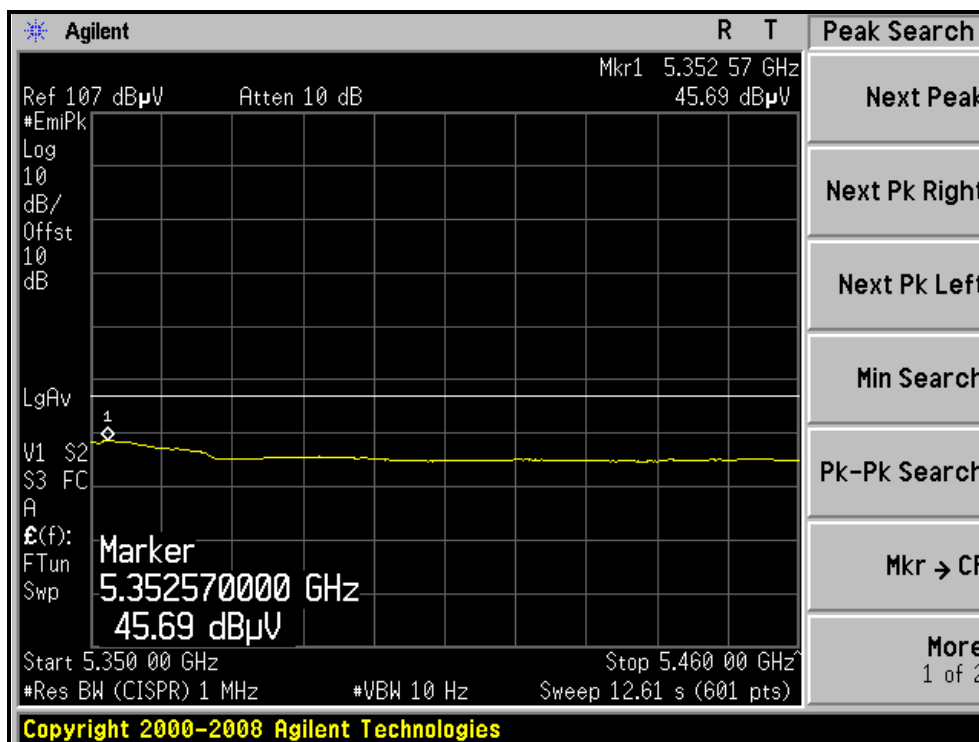
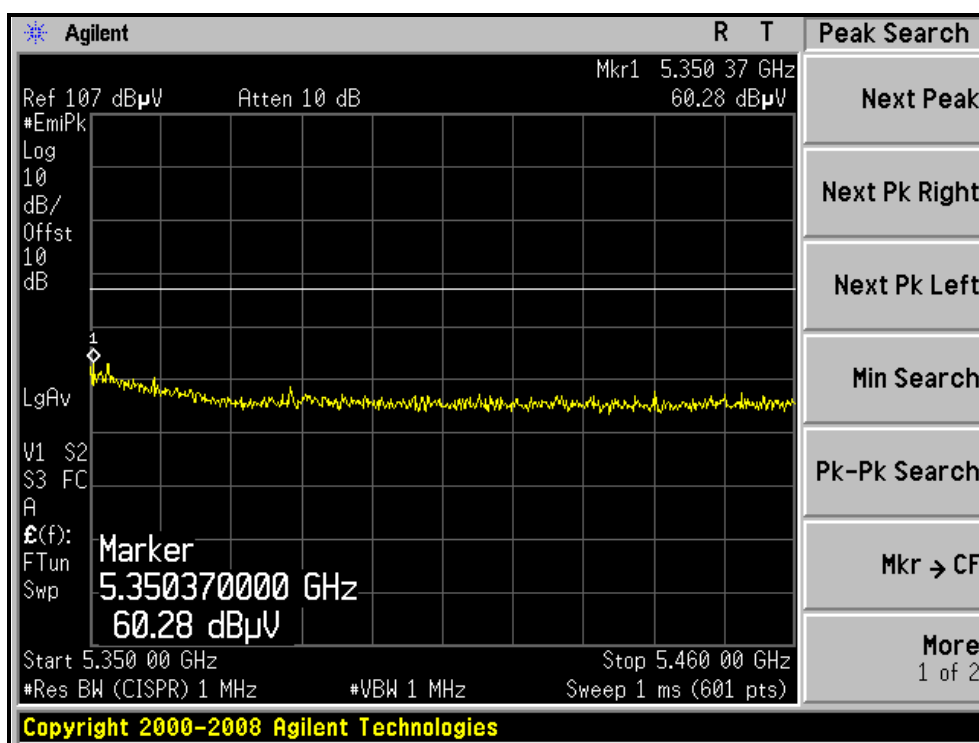
# RESTRICTED BANDEDGE (802.11a MODE, CH36, HORIZONTAL)



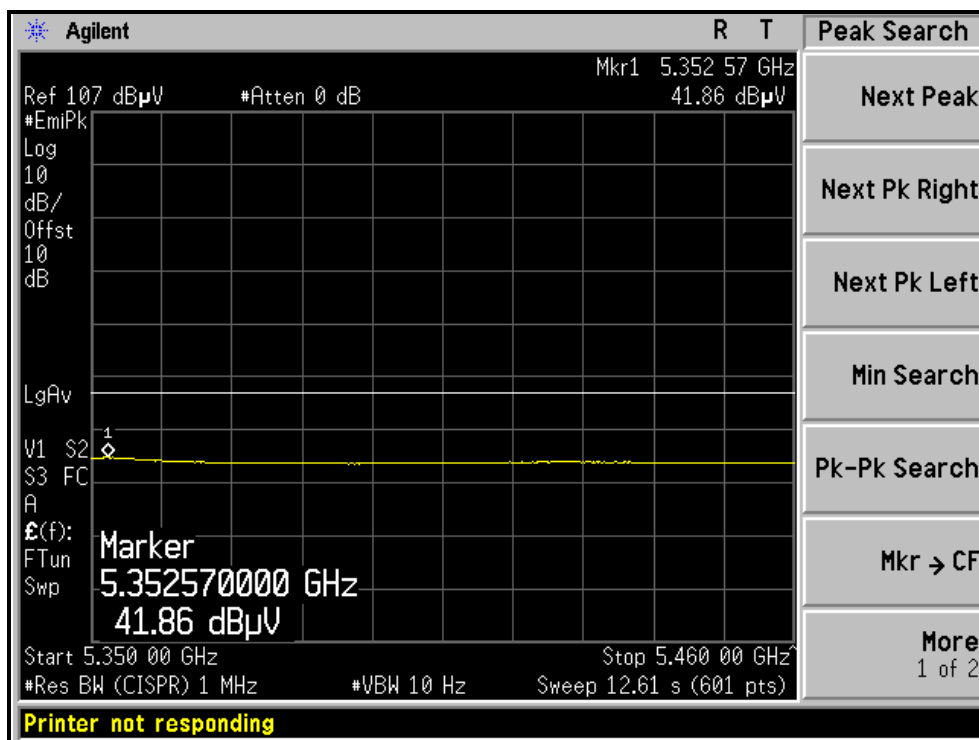
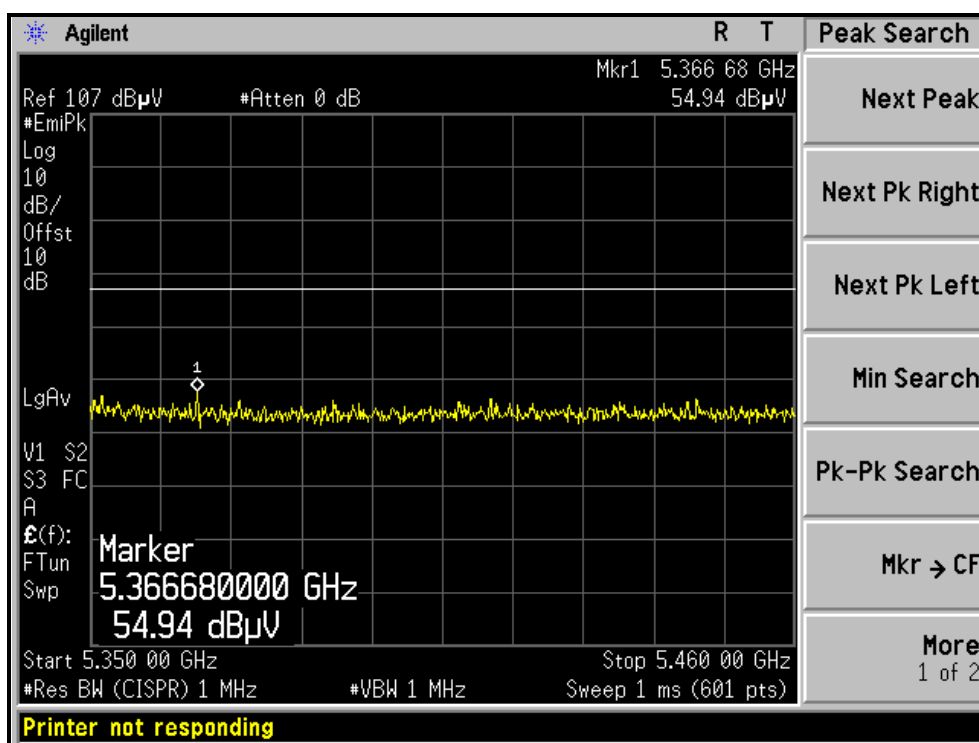
# RESTRICTED BANDEDGE (802.11a MODE, CH36, VERTICAL)



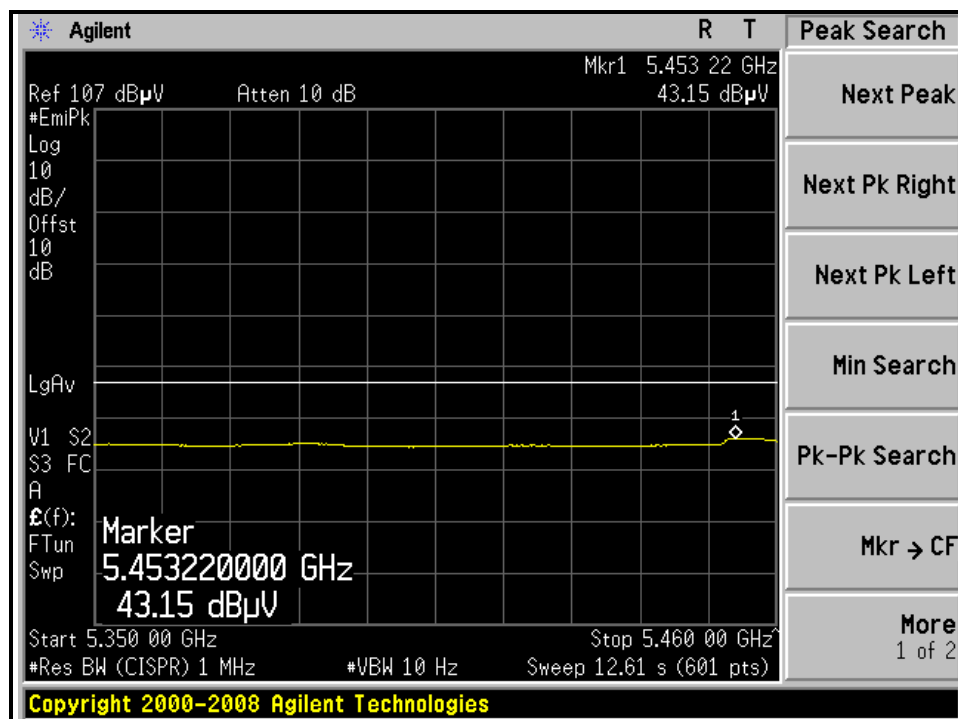
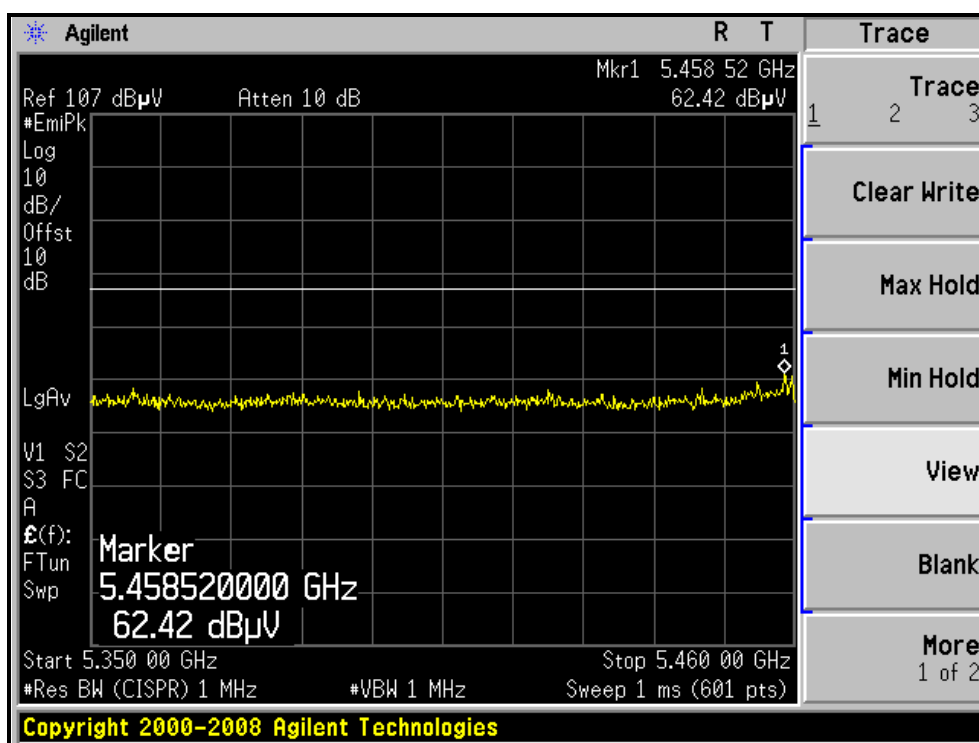
# RESTRICTED BANDEDGE (802.11a MODE, CH64, HORIZONTAL)



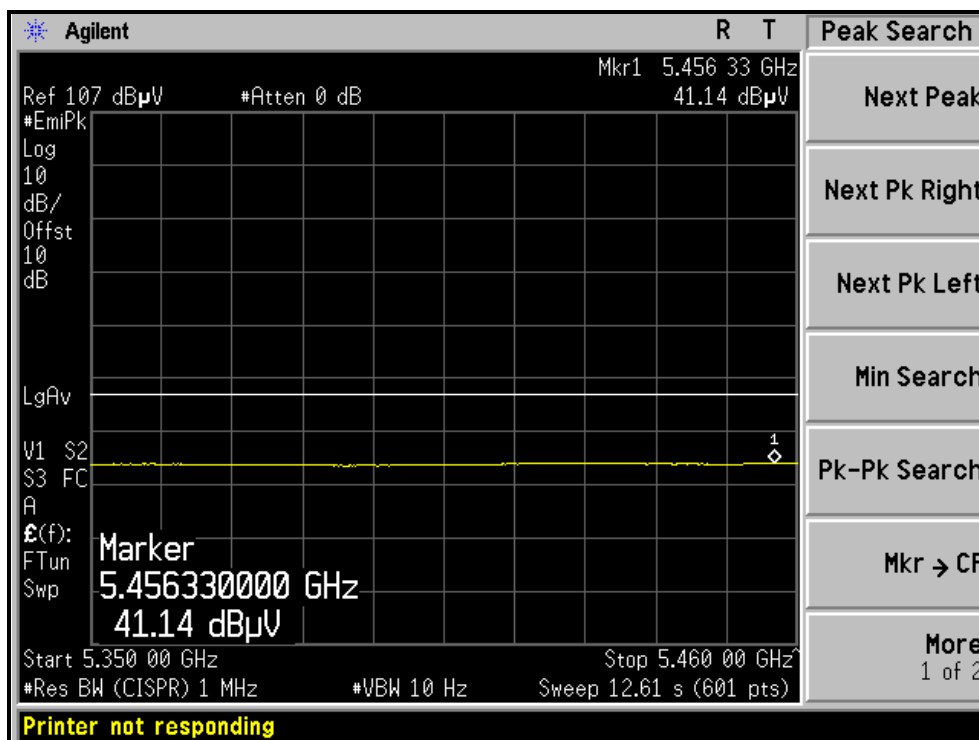
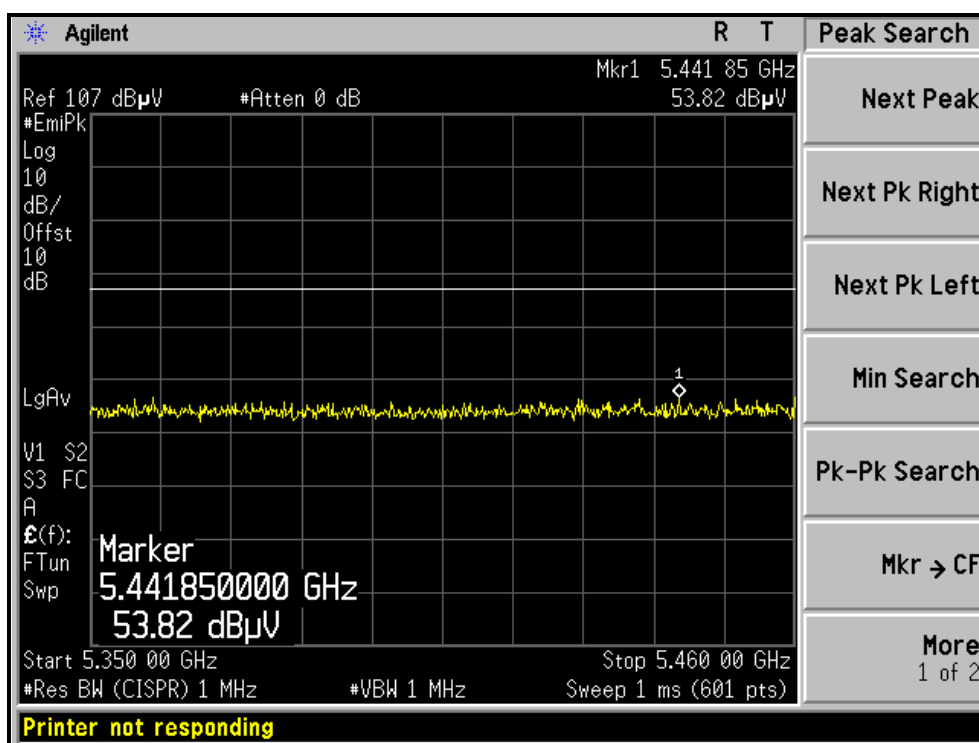
# RESTRICTED BANDEDGE (802.11a MODE, CH64, VERTICAL)



# RESTRICTED BANDEDGE (802.11a MODE, CH100, HORIZONTAL)



# RESTRICTED BANDEDGE (802.11a MODE, CH100, VERTICAL)



# DRAFT 802.11n (20MHz) OFDM MODULATION

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 36                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5143.50     | 60.93 PK                | 74.00          | -13.07      | 1.19 H             | 112                  | 23.67            | 37.26                    |
| 2                                                   | 5143.50     | 47.21 AV                | 54.00          | -6.79       | 1.19 H             | 112                  | 9.95             | 37.26                    |
| 3                                                   | *5180.00    | 107.90 PK               |                |             | 1.12 H             | 272                  | 70.64            | 37.26                    |
| 4                                                   | *5180.00    | 98.07 AV                |                |             | 1.12 H             | 272                  | 60.81            | 37.26                    |
| 5                                                   | #10360.00   | 55.83 PK                | 68.30          | -12.47      | 1.22 H             | 189                  | 9.19             | 46.64                    |
| 6                                                   | 15540.00    | 58.74 PK                | 74.00          | -15.26      | 1.29 H             | 254                  | 11.19            | 47.55                    |
| 7                                                   | 15540.00    | 46.21 AV                | 54.00          | -7.79       | 1.29 H             | 254                  | -1.34            | 47.55                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5147.80     | 54.27 PK                | 74.00          | -19.73      | 1.57 V             | 61                   | 17.01            | 37.26                    |
| 2                                                   | 5147.80     | 42.11 AV                | 54.00          | -11.89      | 1.57 V             | 61                   | 4.85             | 37.26                    |
| 3                                                   | *5180.00    | 99.52 PK                |                |             | 1.01 V             | 39                   | 62.26            | 37.26                    |
| 4                                                   | *5180.00    | 88.49 AV                |                |             | 1.01 V             | 39                   | 51.23            | 37.26                    |
| 5                                                   | #10360.00   | 57.40 PK                | 68.30          | -10.90      | 1.28 V             | 204                  | 10.76            | 46.64                    |
| 6                                                   | 15540.00    | 60.69 PK                | 74.00          | -13.31      | 1.34 V             | 164                  | 13.14            | 47.55                    |
| 7                                                   | 15540.00    | 47.36 AV                | 54.00          | -6.64       | 1.34 V             | 164                  | -0.19            | 47.55                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.
  6. “#”:The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 40                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5200.00    | 108.41 PK               |                |             | 1.20 H             | 301                  | 71.15            | 37.26                    |
| 2                                                   | *5200.00    | 98.65 AV                |                |             | 1.20 H             | 301                  | 61.39            | 37.26                    |
| 3                                                   | #10400.00   | 55.91 PK                | 68.30          | -12.39      | 1.18 H             | 68                   | 9.24             | 46.67                    |
| 4                                                   | 15600.00    | 57.69 PK                | 74.00          | -16.31      | 1.31 H             | 48                   | 10.25            | 47.44                    |
| 5                                                   | 15600.00    | 46.11 AV                | 54.00          | -7.89       | 1.31 H             | 48                   | -1.33            | 47.44                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5200.00    | 99.45 PK                |                |             | 1.05 V             | 145                  | 62.19            | 37.26                    |
| 2                                                   | *5200.00    | 89.71 AV                |                |             | 1.05 V             | 145                  | 52.45            | 37.26                    |
| 3                                                   | #10400.00   | 57.60 PK                | 68.30          | -10.70      | 1.33 V             | 216                  | 10.93            | 46.67                    |
| 4                                                   | 15600.00    | 61.22 PK                | 74.00          | -12.78      | 1.39 V             | 208                  | 13.78            | 47.44                    |
| 5                                                   | 15600.00    | 47.31 AV                | 54.00          | -6.69       | 1.39 V             | 208                  | -0.13            | 47.44                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. " \* ": Fundamental frequency.  
6. "#": The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 48                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5240.00    | 108.57 PK               |                |             | 1.19 H             | 301                  | 71.31            | 37.26                    |
| 2                                                   | *5240.00    | 98.71 AV                |                |             | 1.19 H             | 301                  | 61.45            | 37.26                    |
| 3                                                   | #10480.00   | 55.21 PK                | 68.30          | -13.09      | 1.29 H             | 71                   | 8.48             | 46.73                    |
| 4                                                   | 15720.00    | 56.73 PK                | 74.00          | -17.27      | 1.48 H             | 69                   | 9.52             | 47.21                    |
| 5                                                   | 15720.00    | 45.93 AV                | 54.00          | -8.07       | 1.48 H             | 69                   | -1.28            | 47.21                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5240.00    | 98.10 PK                |                |             | 1.05 V             | 145                  | 60.84            | 37.26                    |
| 2                                                   | *5240.00    | 89.40 AV                |                |             | 1.05 V             | 145                  | 52.14            | 37.26                    |
| 3                                                   | #10480.00   | 58.70 PK                | 68.30          | -9.60       | 1.28 V             | 309                  | 11.97            | 46.73                    |
| 4                                                   | 15720.00    | 58.64 PK                | 74.00          | -15.36      | 1.48 V             | 83                   | 11.43            | 47.21                    |
| 5                                                   | 15720.00    | 46.89 AV                | 54.00          | -7.11       | 1.48 V             | 83                   | -0.32            | 47.21                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. " \* ": Fundamental frequency.
  6. "#": The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 52                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5260.00    | 108.61 PK               |                |             | 1.25 H             | 314                  | 71.35            | 37.26                    |
| 2                                                   | *5260.00    | 98.69 AV                |                |             | 1.25 H             | 314                  | 61.43            | 37.26                    |
| 3                                                   | #10520.00   | 54.31 PK                | 68.30          | -13.99      | 1.25 H             | 337                  | 7.54             | 46.77                    |
| 4                                                   | 15780.00    | 57.10 PK                | 74.00          | -16.90      | 1.30 H             | 267                  | 10.00            | 47.10                    |
| 5                                                   | 15780.00    | 45.80 AV                | 54.00          | -8.20       | 1.30 H             | 267                  | -1.30            | 47.10                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5260.00    | 98.22 PK                |                |             | 1.09 V             | 148                  | 60.96            | 37.26                    |
| 2                                                   | *5260.00    | 89.45 AV                |                |             | 1.09 V             | 148                  | 52.19            | 37.26                    |
| 3                                                   | #10520.00   | 58.84 PK                | 68.30          | -9.46       | 1.22 V             | 265                  | 12.07            | 46.77                    |
| 4                                                   | 15780.00    | 59.72 PK                | 74.00          | -14.28      | 1.22 V             | 308                  | 12.62            | 47.10                    |
| 5                                                   | 15780.00    | 46.30 AV                | 54.00          | -7.70       | 1.22 V             | 308                  | -0.80            | 47.10                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. " \* ": Fundamental frequency.
  6. "#": The radiated frequency is out the restricted band.

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 60                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5300.00    | 109.46 PK               |                |             | 1.12 H             | 175                  | 72.20            | 37.26                    |
| 2                                                   | *5300.00    | 99.32 AV                |                |             | 1.12 H             | 175                  | 62.06            | 37.26                    |
| 3                                                   | 10600.00    | 55.16 PK                | 74.00          | -18.84      | 1.24 H             | 79                   | 8.33             | 46.83                    |
| 4                                                   | 10600.00    | 43.18 AV                | 54.00          | -10.82      | 1.24 H             | 79                   | -3.65            | 46.83                    |
| 5                                                   | 15900.00    | 56.81 PK                | 74.00          | -17.19      | 1.22 H             | 68                   | 9.94             | 46.87                    |
| 6                                                   | 15900.00    | 45.19 AV                | 54.00          | -8.81       | 1.22 H             | 68                   | -1.68            | 46.87                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5300.00    | 101.30 PK               |                |             | 1.17 V             | 68                   | 64.04            | 37.26                    |
| 2                                                   | *5300.00    | 89.60 AV                |                |             | 1.17 V             | 68                   | 52.34            | 37.26                    |
| 3                                                   | 10600.00    | 55.15 PK                | 74.00          | -18.85      | 1.20 V             | 60                   | 8.32             | 46.83                    |
| 4                                                   | 10600.00    | 43.74 AV                | 54.00          | -10.26      | 1.20 V             | 60                   | -3.09            | 46.83                    |
| 5                                                   | 15900.00    | 56.18 PK                | 74.00          | -17.82      | 1.02 V             | 247                  | 9.31             | 46.87                    |
| 6                                                   | 15900.00    | 44.65 AV                | 54.00          | -9.35       | 1.02 V             | 247                  | -2.22            | 46.87                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. “ \* ”: Fundamental frequency.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 64                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5320.00    | 108.20 PK               |                |             | 1.16 H             | 92                   | 70.94            | 37.26                    |
| 2                                                   | *5320.00    | 98.38 AV                |                |             | 1.16 H             | 92                   | 61.12            | 37.26                    |
| 3                                                   | 5352.38     | 61.42 PK                | 74.00          | -12.58      | 1.15 H             | 267                  | 24.16            | 37.26                    |
| 4                                                   | 5352.38     | 47.85 AV                | 54.00          | -6.15       | 1.15 H             | 267                  | 10.59            | 37.26                    |
| 5                                                   | 10640.00    | 55.28 PK                | 74.00          | -18.72      | 1.33 H             | 84                   | 8.42             | 46.86                    |
| 6                                                   | 10640.00    | 44.22 AV                | 54.00          | -9.78       | 1.33 H             | 84                   | -2.64            | 46.86                    |
| 7                                                   | 15960.00    | 56.84 PK                | 74.00          | -17.16      | 1.30 H             | 69                   | 10.08            | 46.76                    |
| 8                                                   | 15960.00    | 43.22 AV                | 54.00          | -10.78      | 1.30 H             | 69                   | -3.54            | 46.76                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5320.00    | 100.91 PK               |                |             | 1.22 V             | 71                   | 63.65            | 37.26                    |
| 2                                                   | *5320.00    | 89.99 AV                |                |             | 1.22 V             | 71                   | 52.73            | 37.26                    |
| 3                                                   | 5352.57     | 54.01 PK                | 74.00          | -19.99      | 1.37 V             | 29                   | 16.75            | 37.26                    |
| 4                                                   | 5352.57     | 41.75 AV                | 54.00          | -12.25      | 1.37 V             | 29                   | 4.49             | 37.26                    |
| 5                                                   | 10640.00    | 55.87 PK                | 74.00          | -18.13      | 1.17 V             | 73                   | 9.01             | 46.86                    |
| 6                                                   | 10640.00    | 44.69 AV                | 54.00          | -9.31       | 1.17 V             | 73                   | -2.17            | 46.86                    |
| 7                                                   | 15960.00    | 57.22 PK                | 74.00          | -16.78      | 1.69 V             | 83                   | 10.46            | 46.76                    |
| 8                                                   | 15960.00    | 45.19 AV                | 54.00          | -8.81       | 1.69 V             | 83                   | -1.57            | 46.76                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 100                   | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5457.25     | 57.88 PK                | 74.00          | -16.12      | 1.21 H             | 71                   | 20.62            | 37.26                    |
| 2                                                   | 5457.25     | 47.76 AV                | 54.00          | -6.24       | 1.21 H             | 71                   | 10.50            | 37.26                    |
| 3                                                   | #5470.00    | 64.35 PK                | 68.30          | -3.95       | 1.15 H             | 81                   | 27.09            | 37.26                    |
| 4                                                   | *5500.00    | 106.99 PK               |                |             | 1.21 H             | 264                  | 69.73            | 37.26                    |
| 5                                                   | *5500.00    | 99.15 AV                |                |             | 1.21 H             | 264                  | 61.89            | 37.26                    |
| 6                                                   | 11000.00    | 55.68 PK                | 74.00          | -18.32      | 1.28 H             | 67                   | 8.53             | 47.15                    |
| 7                                                   | 11000.00    | 44.33 AV                | 54.00          | -9.67       | 1.28 H             | 67                   | -2.82            | 47.15                    |
| 8                                                   | 16000.00    | 54.38 PK                | 74.00          | -19.62      | 1.22 H             | 69                   | 7.70             | 46.68                    |
| 9                                                   | 16000.00    | 43.60 AV                | 54.00          | -10.40      | 1.22 H             | 69                   | -3.08            | 46.68                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5423.52     | 53.62 PK                | 74.00          | -20.38      | 1.37 V             | 178                  | 16.36            | 37.26                    |
| 2                                                   | 5423.52     | 41.00 AV                | 54.00          | -13.00      | 1.37 V             | 178                  | 3.74             | 37.26                    |
| 3                                                   | #5470.00    | 55.48 PK                | 68.30          | -12.82      | 1.27 V             | 81                   | 18.22            | 37.26                    |
| 4                                                   | *5500.00    | 99.21 PK                |                |             | 1.31 V             | 271                  | 61.95            | 37.26                    |
| 5                                                   | *5500.00    | 88.91 AV                |                |             | 1.31 V             | 271                  | 51.65            | 37.26                    |
| 6                                                   | 11000.00    | 53.91 PK                | 74.00          | -20.09      | 1.11 V             | 65                   | 6.76             | 47.15                    |
| 7                                                   | 11000.00    | 43.50 AV                | 54.00          | -10.50      | 1.11 V             | 65                   | -3.65            | 47.15                    |
| 8                                                   | 16000.00    | 57.24 PK                | 74.00          | -16.76      | 1.32 V             | 62                   | 10.56            | 46.68                    |
| 9                                                   | 16000.00    | 43.90 AV                | 54.00          | -10.10      | 1.32 V             | 62                   | -2.78            | 46.68                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. “ \* ”: Fundamental frequency.  
6. “#”:The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 120                   | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5600.00    | 107.43 PK               |                |             | 1.30 H             | 272                  | 69.89            | 37.54                    |
| 2                                                   | *5600.00    | 99.57 AV                |                |             | 1.30 H             | 272                  | 62.03            | 37.54                    |
| 3                                                   | 11200.00    | 56.01 PK                | 74.00          | -17.99      | 1.38 H             | 148                  | 8.83             | 47.18                    |
| 4                                                   | 11200.00    | 44.21 AV                | 54.00          | -9.79       | 1.38 H             | 148                  | -2.97            | 47.18                    |
| 5                                                   | #16800.00   | 57.25 PK                | 68.30          | -11.05      | 1.31 H             | 245                  | 7.20             | 50.05                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5600.00    | 99.37 PK                |                |             | 1.28 V             | 265                  | 61.83            | 37.54                    |
| 2                                                   | *5600.00    | 89.61 AV                |                |             | 1.28 V             | 265                  | 52.07            | 37.54                    |
| 3                                                   | 11200.00    | 54.67 PK                | 74.00          | -19.33      | 1.50 V             | 214                  | 7.49             | 47.18                    |
| 4                                                   | 11200.00    | 43.55 AV                | 54.00          | -10.45      | 1.50 V             | 214                  | -3.63            | 47.18                    |
| 5                                                   | #16900.00   | 60.21 PK                | 68.30          | -8.09       | 1.47 V             | 144                  | 9.83             | 50.38                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. " \* ": Fundamental frequency.
  6. "#": The radiated frequency is out the restricted band.



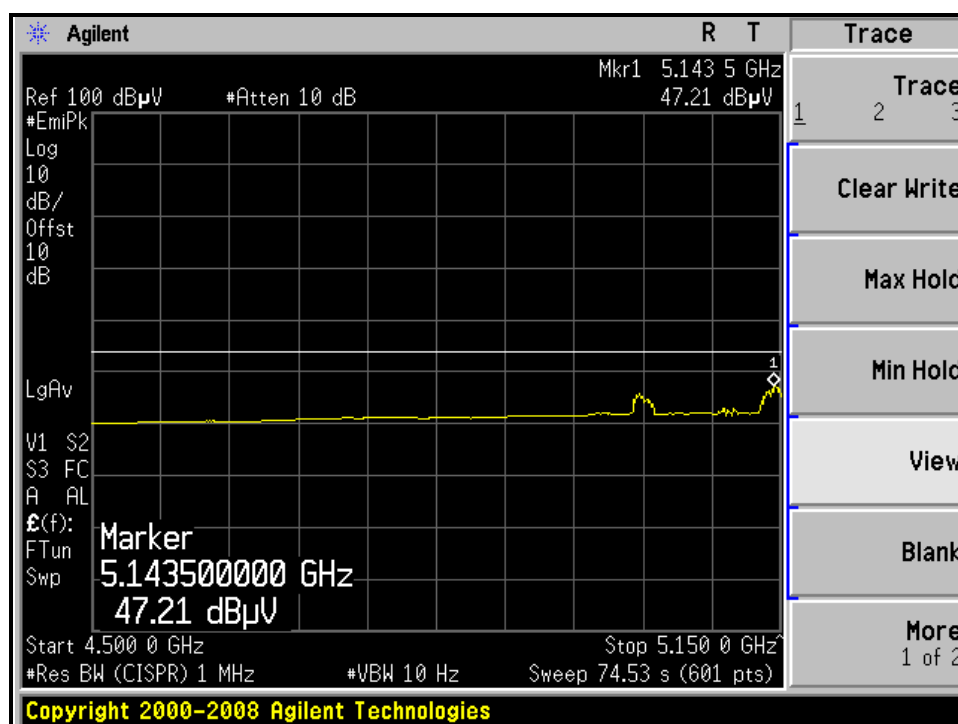
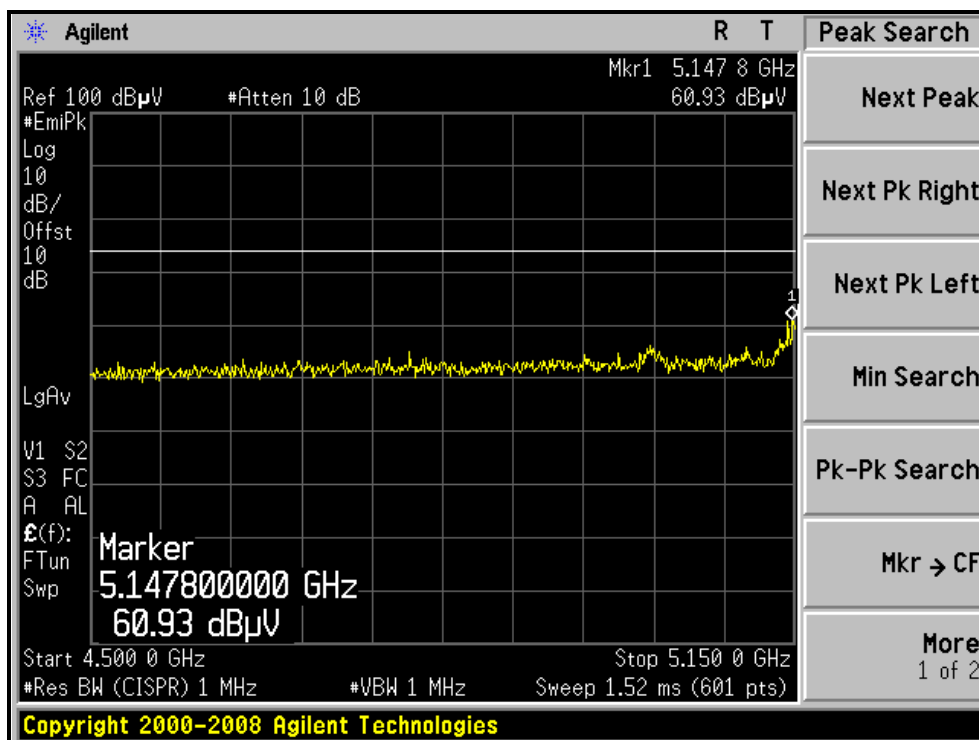
A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 140                   | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

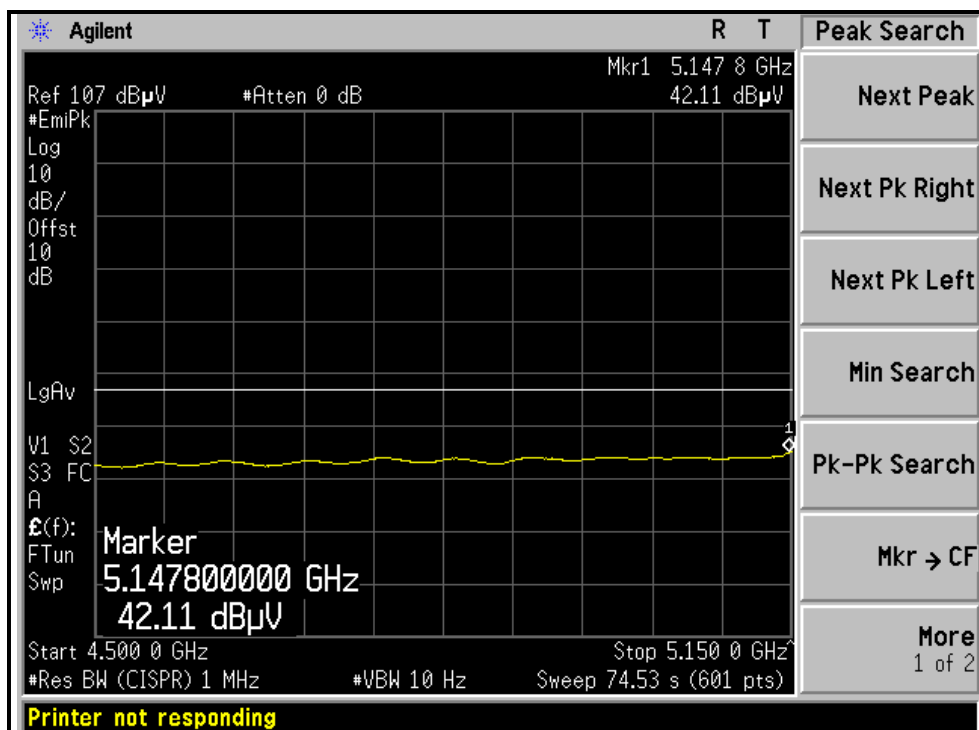
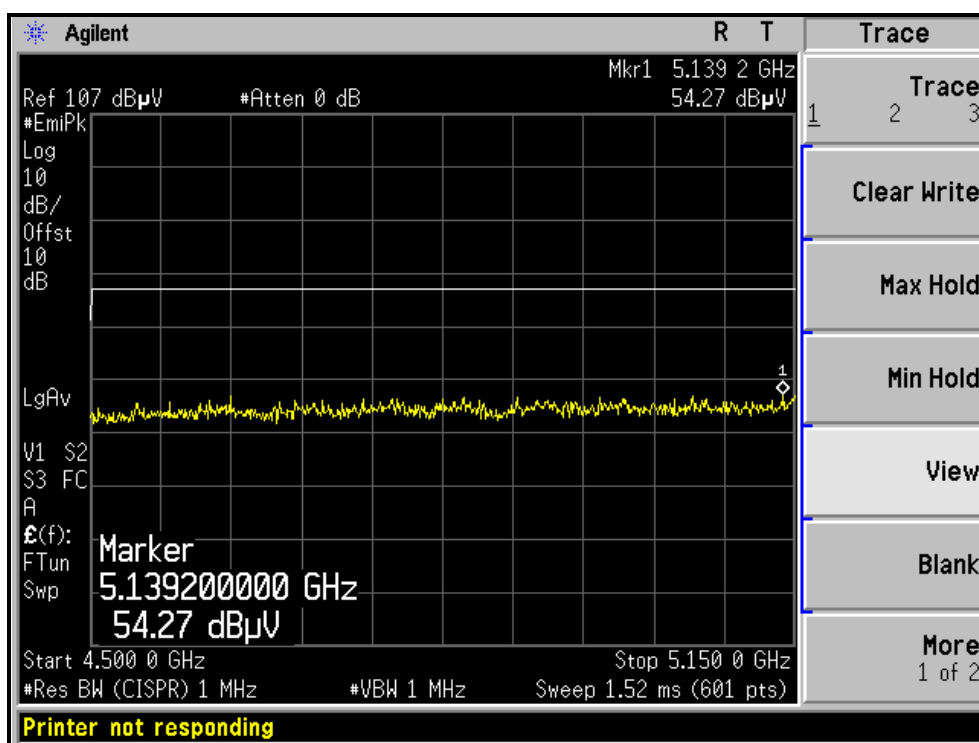
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5700.00    | 107.01 PK               |                |             | 1.20 H             | 71                   | 69.18            | 37.83                    |
| 2                                                   | *5700.00    | 97.12 AV                |                |             | 1.20 H             | 71                   | 59.29            | 37.83                    |
| 3                                                   | #5725.00    | 67.29 PK                | 68.30          | -1.01       | 1.18 H             | 103                  | 29.39            | 37.90                    |
| 4                                                   | 11400.00    | 53.50 PK                | 74.00          | -20.50      | 1.47 H             | 301                  | 6.29             | 47.21                    |
| 5                                                   | 11400.00    | 42.05 AV                | 54.00          | -11.95      | 1.47 H             | 301                  | -5.16            | 47.21                    |
| 6                                                   | 17100.00    | 57.58 PK                | 68.30          | -10.72      | 1.41 H             | 299                  | 6.18             | 51.40                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5700.00    | 97.80 PK                |                |             | 1.21 V             | 136                  | 59.97            | 37.83                    |
| 2                                                   | *5700.00    | 88.09 AV                |                |             | 1.21 V             | 136                  | 50.26            | 37.83                    |
| 3                                                   | #5725.00    | 57.34 PK                | 68.30          | -10.96      | 1.31 V             | 29                   | 19.44            | 37.90                    |
| 4                                                   | 11400.00    | 53.89 PK                | 74.00          | -20.11      | 1.43 V             | 208                  | 6.68             | 47.21                    |
| 5                                                   | 11400.00    | 43.22 AV                | 54.00          | -10.78      | 1.43 V             | 208                  | -3.99            | 47.21                    |
| 6                                                   | 17100.00    | 61.11 PK                | 68.30          | -7.19       | 1.28 V             | 333                  | 9.71             | 51.40                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. “ \* “: Fundamental frequency.  
6. “#”:The radiated frequency is out the restricted band.

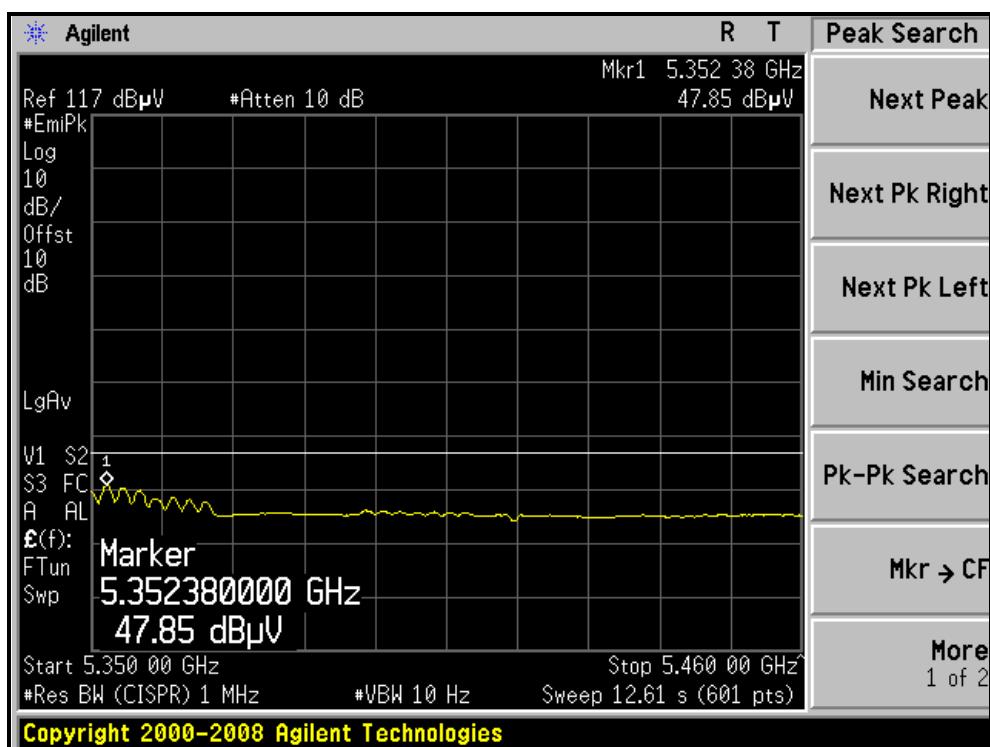
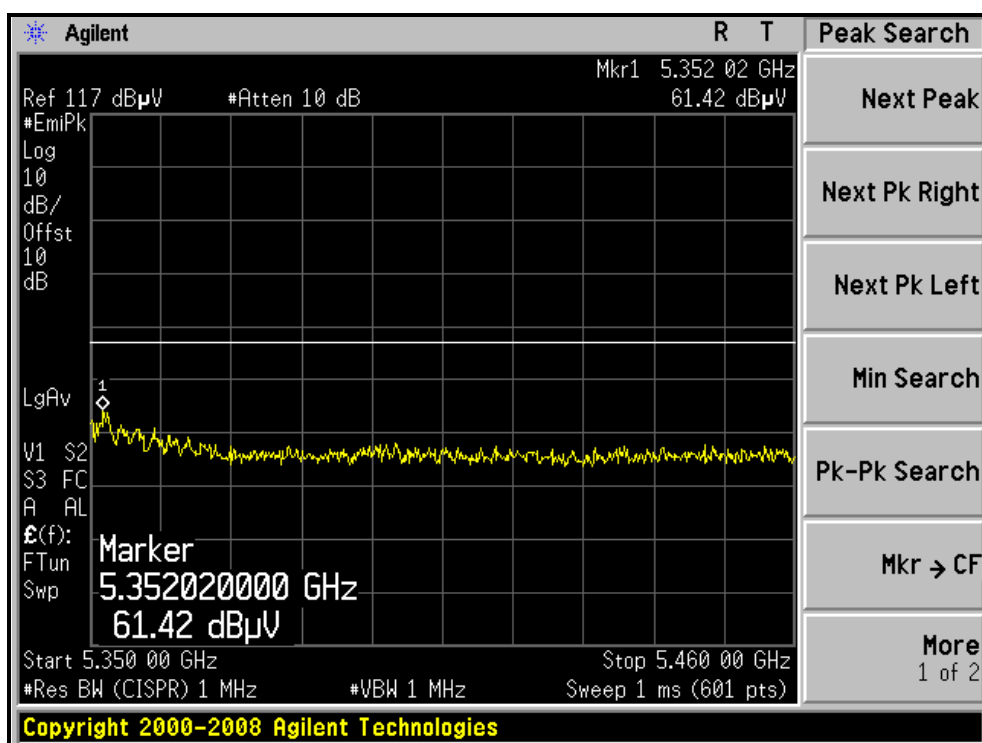
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH36, HORIZONTAL )



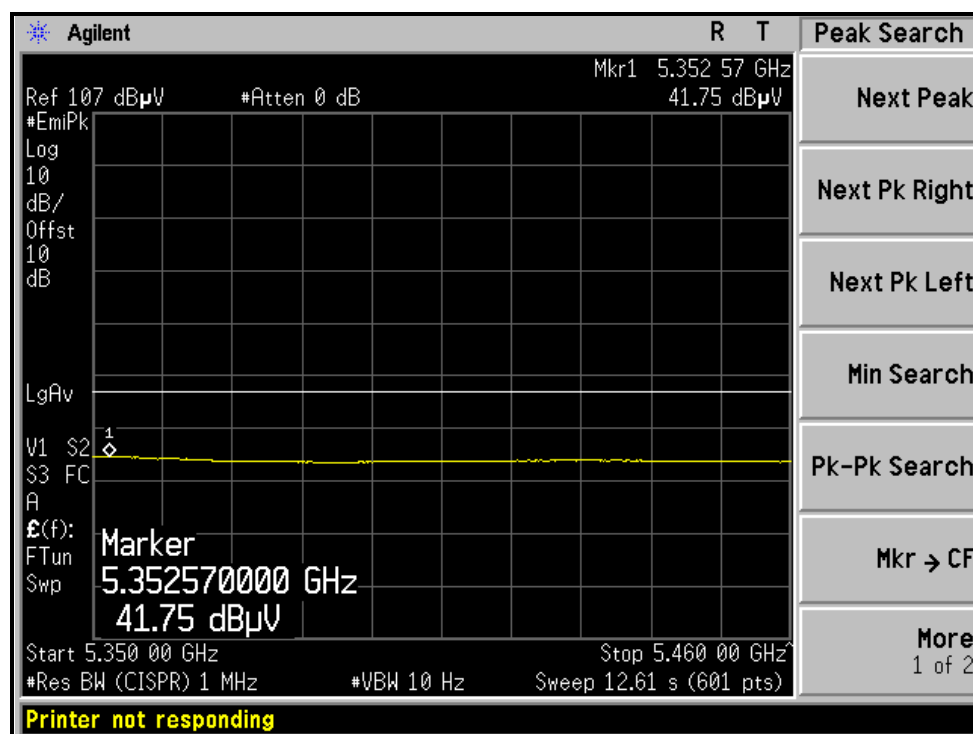
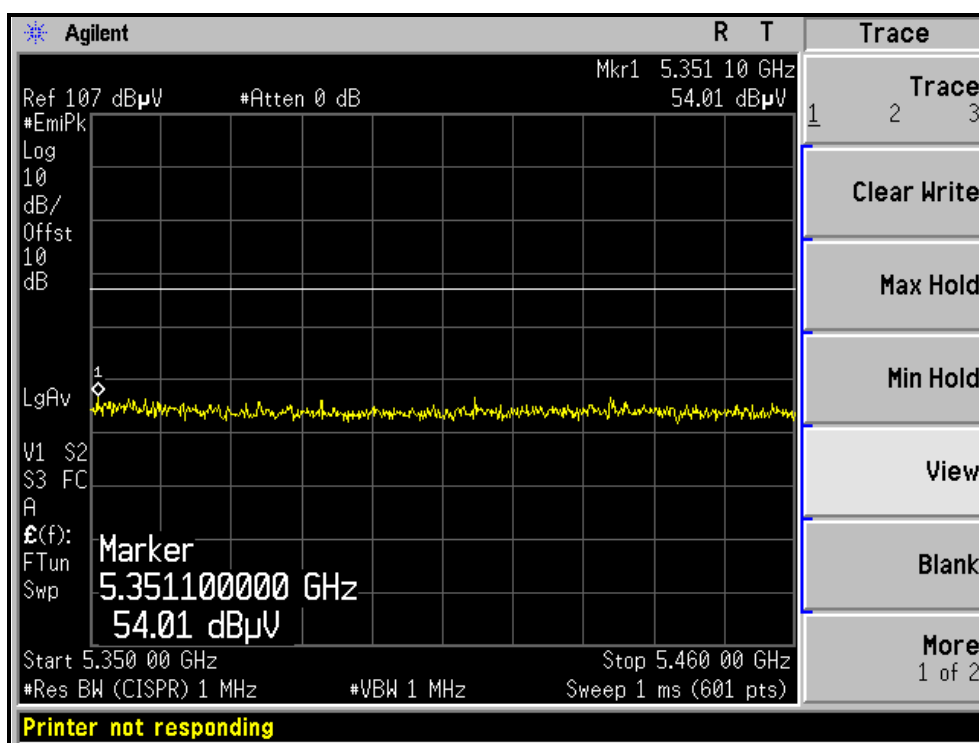
# RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH36, VERTICAL )



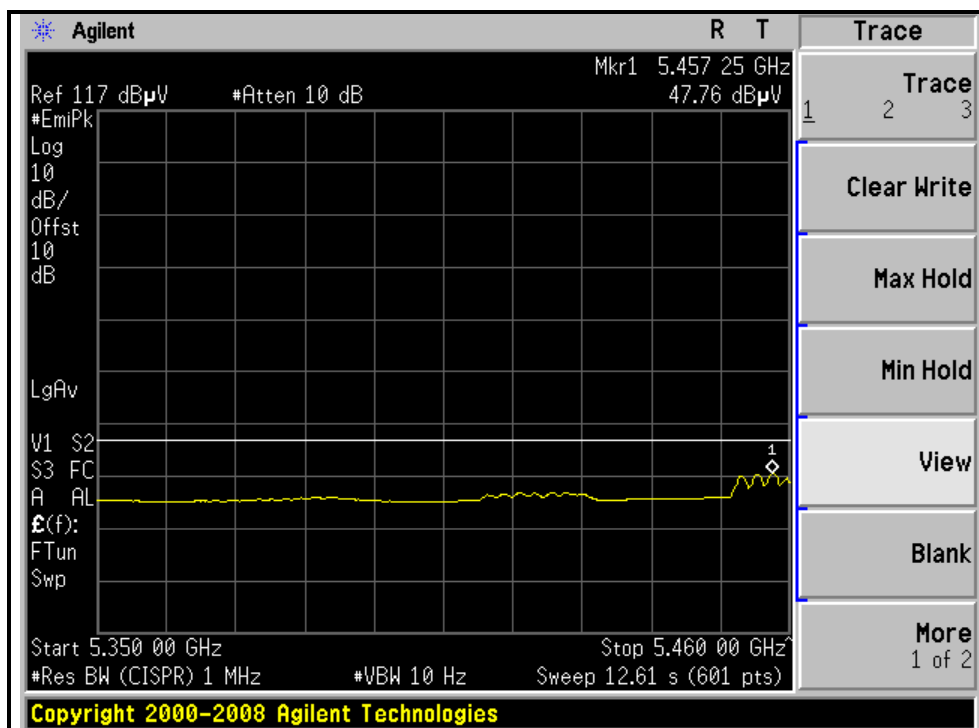
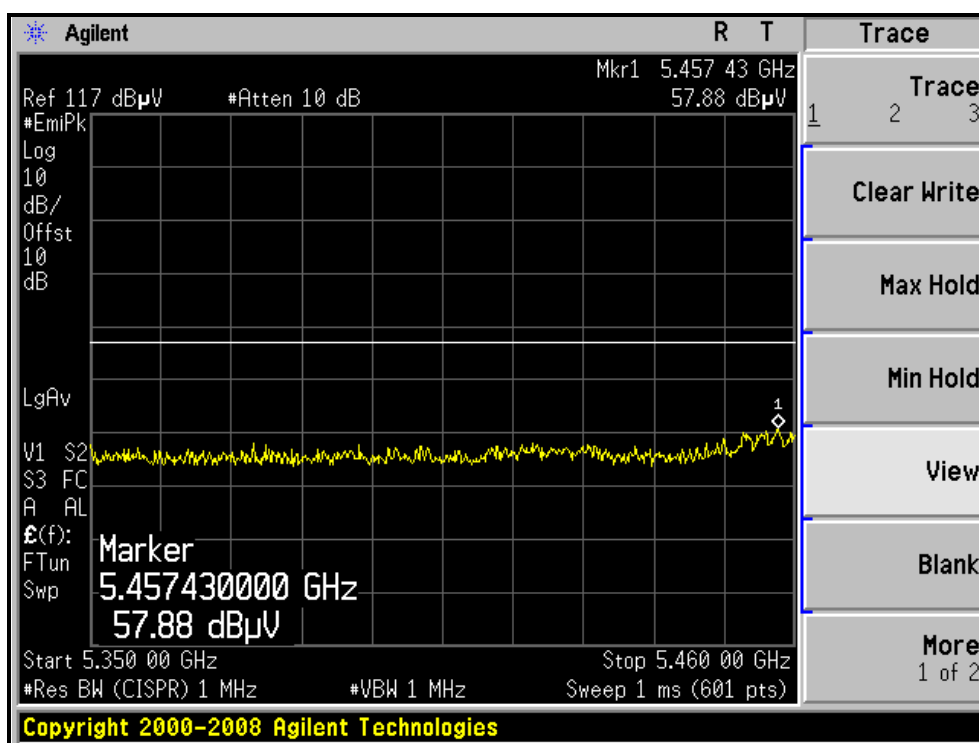
# RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH64, HORIZONTAL )



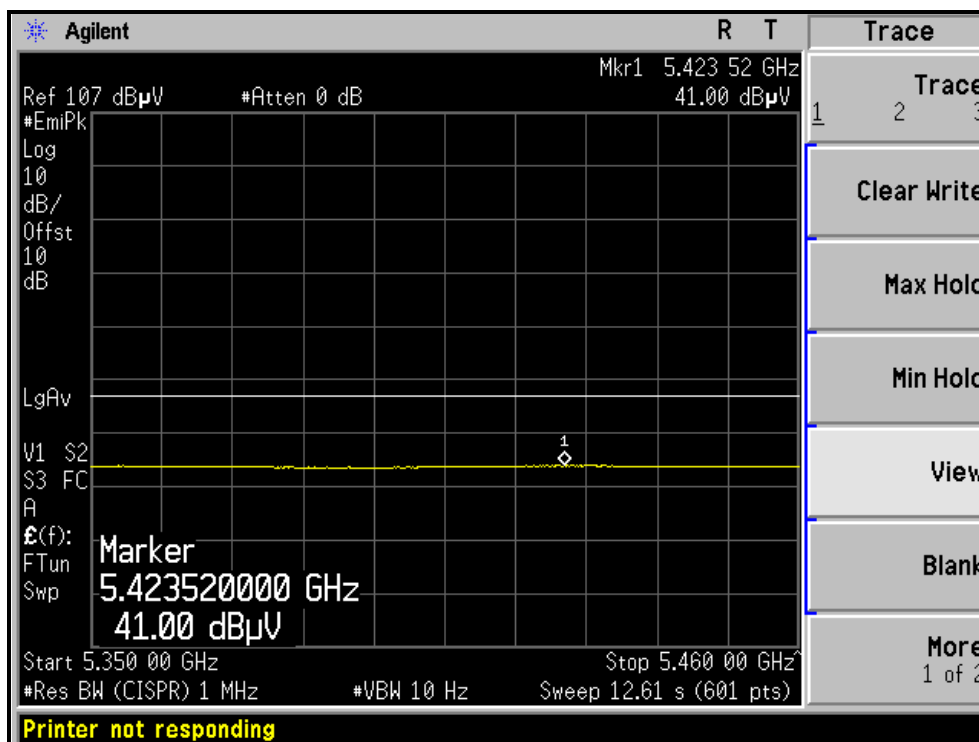
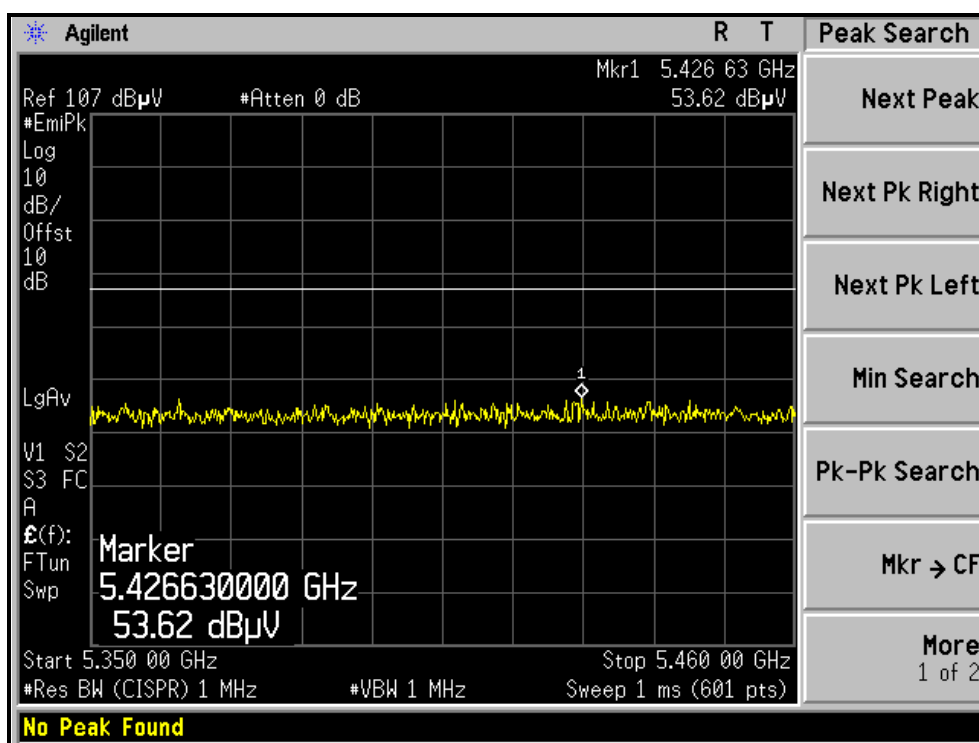
# RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH64, VERTICAL )



RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH100, HORIZONTAL )



# RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH100, VERTICAL )



# DRAFT 802.11n (40MHz) OFDM MODULATION

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 38                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5148.90     | 65.84 PK                | 74.00          | -8.16       | 1.20 H             | 91                   | 28.58            | 37.26                    |
| 2                                                   | 5148.90     | 52.82 AV                | 54.00          | -1.18       | 1.20 H             | 91                   | 15.56            | 37.26                    |
| 3                                                   | *5190.00    | 102.73 PK               |                |             | 1.20 H             | 109                  | 65.47            | 37.26                    |
| 4                                                   | *5190.00    | 86.75 AV                |                |             | 1.20 H             | 109                  | 49.49            | 37.26                    |
| 5                                                   | #10360.00   | 54.65 PK                | 68.30          | -13.65      | 1.08 H             | 71                   | 8.01             | 46.64                    |
| 6                                                   | 15570.00    | 56.31 PK                | 74.00          | -17.69      | 1.41 H             | 98                   | 8.81             | 47.50                    |
| 7                                                   | 15570.00    | 45.09 AV                | 54.00          | -8.91       | 1.41 H             | 98                   | -2.41            | 47.50                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5150.00     | 54.88 PK                | 74.00          | -19.12      | 1.31 V             | 189                  | 17.62            | 37.26                    |
| 2                                                   | 5150.00     | 42.90 AV                | 54.00          | -11.10      | 1.31 V             | 189                  | 5.64             | 37.26                    |
| 3                                                   | *5190.00    | 93.84 PK                |                |             | 1.12 V             | 113                  | 56.58            | 37.26                    |
| 4                                                   | *5190.00    | 78.61 AV                |                |             | 1.12 V             | 113                  | 41.35            | 37.26                    |
| 5                                                   | #10360.00   | 53.46 PK                | 68.30          | -14.84      | 1.26 V             | 37                   | 6.82             | 46.64                    |
| 6                                                   | 15570.00    | 56.48 PK                | 74.00          | -17.52      | 1.20 V             | 1                    | 8.98             | 47.50                    |
| 7                                                   | 15570.00    | 45.44 AV                | 54.00          | -8.56       | 1.20 V             | 1                    | -2.06            | 47.50                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.
  6. “#”:The radiated frequency is out the restricted band.

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 46                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5230.00    | 104.20 PK               |                |             | 1.13 H             | 124                  | 66.94            | 37.26                    |
| 2                                                   | *5230.00    | 87.21 AV                |                |             | 1.13 H             | 124                  | 49.95            | 37.26                    |
| 3                                                   | #10460.00   | 55.01 PK                | 68.30          | -13.29      | 1.16 H             | 151                  | 8.29             | 46.72                    |
| 4                                                   | 15690.00    | 56.20 PK                | 74.00          | -17.80      | 1.38 H             | 111                  | 8.93             | 47.27                    |
| 5                                                   | 15690.00    | 45.40 AV                | 54.00          | -8.60       | 1.38 H             | 111                  | -1.87            | 47.27                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5230.00    | 99.80 PK                |                |             | 1.17 V             | 68                   | 62.54            | 37.26                    |
| 2                                                   | *5230.00    | 77.21 AV                |                |             | 1.17 V             | 68                   | 39.95            | 37.26                    |
| 3                                                   | #10460.00   | 54.21 PK                | 68.30          | -14.09      | 1.31 V             | 28                   | 7.49             | 46.72                    |
| 4                                                   | 15690.00    | 56.77 PK                | 74.00          | -17.23      | 1.29 V             | 284                  | 9.50             | 47.27                    |
| 5                                                   | 15690.00    | 45.11 AV                | 54.00          | -8.89       | 1.29 V             | 284                  | -2.16            | 47.27                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. " \* ": Fundamental frequency.  
6. "#": The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 54                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5270.00    | 104.61 PK               |                |             | 1.21 H             | 111                  | 67.35            | 37.26                    |
| 2                                                   | *5270.00    | 86.64 AV                |                |             | 1.21 H             | 111                  | 49.38            | 37.26                    |
| 3                                                   | #10540.00   | 54.83 PK                | 68.30          | -13.47      | 1.60 H             | 238                  | 8.05             | 46.78                    |
| 4                                                   | 15810.00    | 57.10 PK                | 74.00          | -16.90      | 1.19 H             | 297                  | 10.06            | 47.04                    |
| 5                                                   | 15810.00    | 45.90 AV                | 54.00          | -8.10       | 1.19 H             | 297                  | -1.14            | 47.04                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5270.00    | 98.27 PK                |                |             | 1.23 V             | 29                   | 61.01            | 37.26                    |
| 2                                                   | *5270.00    | 76.39 AV                |                |             | 1.23 V             | 29                   | 39.13            | 37.26                    |
| 3                                                   | #10540.00   | 54.48 PK                | 68.30          | -13.82      | 1.31 V             | 129                  | 7.70             | 46.78                    |
| 4                                                   | 15810.00    | 57.40 PK                | 74.00          | -16.60      | 1.34 V             | 241                  | 10.36            | 47.04                    |
| 5                                                   | 15810.00    | 45.60 AV                | 54.00          | -8.40       | 1.34 V             | 241                  | -1.44            | 47.04                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. " \* ": Fundamental frequency.
  6. " # ": The radiated frequency is out the restricted band.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 62                    | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5310.00    | 104.69 PK               |                |             | 1.00 H             | 103                  | 67.43            | 37.26                    |
| 2                                                   | *5310.00    | 87.66 AV                |                |             | 1.00 H             | 103                  | 50.40            | 37.26                    |
| 3                                                   | 5350.00     | 66.35 PK                | 74.00          | -7.65       | 1.17 H             | 90                   | 29.09            | 37.26                    |
| 4                                                   | 5350.00     | 52.38 AV                | 54.00          | -1.62       | 1.17 H             | 90                   | 15.12            | 37.26                    |
| 5                                                   | 10620.00    | 53.92 PK                | 74.00          | -20.08      | 1.07 H             | 82                   | 7.07             | 46.85                    |
| 6                                                   | 10620.00    | 42.11 AV                | 54.00          | -11.89      | 1.07 H             | 82                   | -4.74            | 46.85                    |
| 7                                                   | 15930.00    | 57.31 PK                | 74.00          | -16.69      | 1.09 H             | 48                   | 10.50            | 46.81                    |
| 8                                                   | 15930.00    | 45.84 AV                | 54.00          | -8.16       | 1.09 H             | 48                   | -0.97            | 46.81                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5310.00    | 96.20 PK                |                |             | 1.18 V             | 85                   | 58.94            | 37.26                    |
| 2                                                   | *5310.00    | 79.30 AV                |                |             | 1.18 V             | 85                   | 42.04            | 37.26                    |
| 3                                                   | 5350.00     | 56.87 PK                | 74.00          | -17.13      | 1.20 V             | 140                  | 19.61            | 37.26                    |
| 4                                                   | 5350.00     | 44.02 AV                | 54.00          | -9.98       | 1.20 V             | 140                  | 6.76             | 37.26                    |
| 5                                                   | 10620.00    | 53.26 PK                | 74.00          | -20.74      | 1.33 V             | 315                  | 6.41             | 46.85                    |
| 6                                                   | 10620.00    | 43.14 AV                | 54.00          | -10.86      | 1.33 V             | 315                  | -3.71            | 46.85                    |
| 7                                                   | 15930.00    | 57.27 PK                | 74.00          | -16.73      | 1.33 V             | 251                  | 10.46            | 46.81                    |
| 8                                                   | 15930.00    | 45.38 AV                | 54.00          | -8.62       | 1.33 V             | 251                  | -1.44            | 46.81                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* “: Fundamental frequency.



A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 102                   | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5460.00     | 60.46 PK                | 74.00          | -13.54      | 1.19 H             | 72                   | 23.20            | 37.26                    |
| 2                                                   | 5460.00     | 46.67 AV                | 54.00          | -7.33       | 1.19 H             | 72                   | 9.41             | 37.26                    |
| 3                                                   | #5470.00    | 67.25 PK                | 68.30          | -1.05       | 1.21 H             | 78                   | 29.99            | 37.26                    |
| 4                                                   | *5510.00    | 104.88 PK               |                |             | 1.16 H             | 181                  | 67.59            | 37.29                    |
| 5                                                   | *5510.00    | 87.25 AV                |                |             | 1.16 H             | 181                  | 49.96            | 37.29                    |
| 6                                                   | 11020.00    | 53.28 PK                | 74.00          | -20.72      | 1.30 H             | 98                   | 6.13             | 47.15                    |
| 7                                                   | 11020.00    | 41.98 AV                | 54.00          | -12.02      | 1.30 H             | 98                   | -5.17            | 47.15                    |
| 8                                                   | #16530.00   | 58.42 PK                | 68.30          | -9.88       | 1.31 H             | 29                   | 9.25             | 49.17                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | 5460.00     | 54.01 PK                | 74.00          | -19.99      | 1.08 V             | 124                  | 16.75            | 37.26                    |
| 2                                                   | 5460.00     | 41.65 AV                | 54.00          | -12.35      | 1.08 V             | 124                  | 4.39             | 37.26                    |
| 3                                                   | #5470.00    | 56.60 PK                | 68.30          | -11.70      | 1.21 V             | 233                  | 19.34            | 37.26                    |
| 4                                                   | *5510.00    | 93.29 PK                |                |             | 1.28 V             | 69                   | 56.00            | 37.29                    |
| 5                                                   | *5510.00    | 77.11 AV                |                |             | 1.28 V             | 69                   | 39.82            | 37.29                    |
| 6                                                   | 11020.00    | 59.81 PK                | 74.00          | -14.19      | 1.39 V             | 241                  | 12.66            | 47.15                    |
| 7                                                   | 11020.00    | 47.20 AV                | 54.00          | -6.80       | 1.39 V             | 241                  | 0.05             | 47.15                    |
| 8                                                   | #16530.00   | 59.78 PK                | 68.30          | -8.52       | 1.06 V             | 89                   | 10.61            | 49.17                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. “ \* “: Fundamental frequency.  
6. “#”:The radiated frequency is out the restricted band.

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 118                   | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5590.00    | 106.45 PK               |                |             | 1.23 H             | 184                  | 68.93            | 37.52                    |
| 2                                                   | *5590.00    | 88.31 AV                |                |             | 1.23 H             | 184                  | 50.79            | 37.52                    |
| 3                                                   | 11180.00    | 52.63 PK                | 74.00          | -21.37      | 1.28 H             | 140                  | 5.45             | 47.18                    |
| 4                                                   | 11180.00    | 41.87 AV                | 54.00          | -12.13      | 1.28 H             | 140                  | -5.31            | 47.18                    |
| 5                                                   | #16770.00   | 58.14 PK                | 68.30          | -10.16      | 1.31 H             | 242                  | 8.18             | 49.96                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5590.00    | 95.90 PK                |                |             | 1.38 V             | 281                  | 58.38            | 37.52                    |
| 2                                                   | *5590.00    | 79.40 AV                |                |             | 1.38 V             | 281                  | 41.88            | 37.52                    |
| 3                                                   | 11180.00    | 54.67 PK                | 74.00          | -19.33      | 1.32 V             | 138                  | 7.49             | 47.18                    |
| 4                                                   | 11180.00    | 43.76 AV                | 54.00          | -10.24      | 1.32 V             | 138                  | -3.42            | 47.18                    |
| 5                                                   | #16770.00   | 49.90 PK                | 68.30          | -18.40      | 1.41 V             | 238                  | -0.06            | 49.96                    |

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).  
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. The other emission levels were very low against the limit.  
4. Margin value = Emission level – Limit value.  
5. “ \* ”: Fundamental frequency.  
6. “#”:The radiated frequency is out the restricted band.



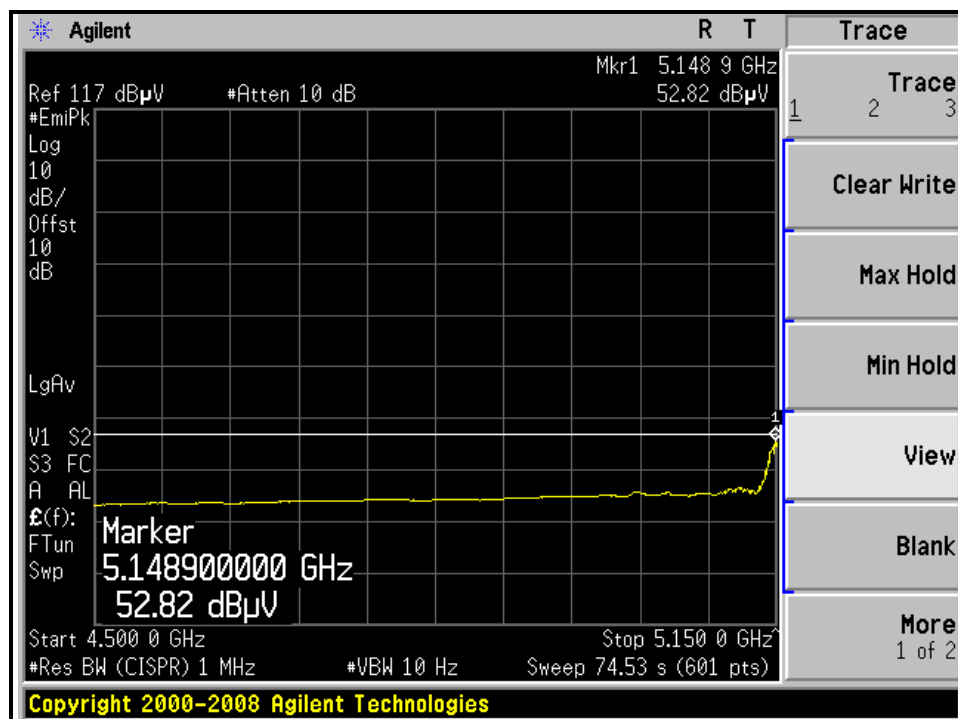
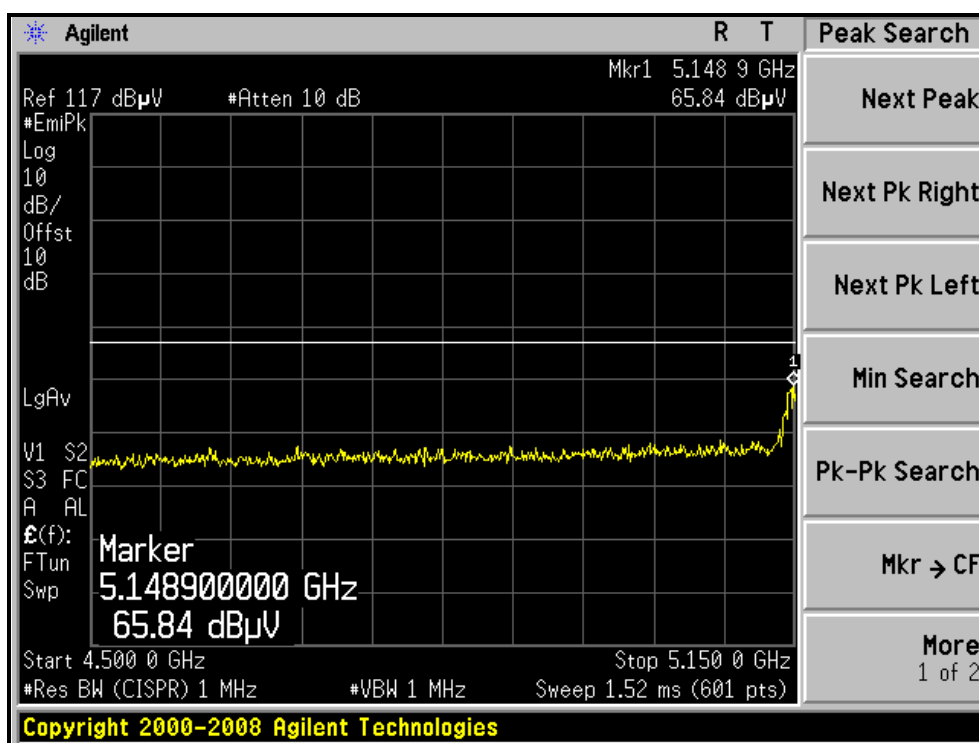
A D T

| EUT TEST CONDITION       |                               | MEASUREMENT DETAIL |                           |
|--------------------------|-------------------------------|--------------------|---------------------------|
| CHANNEL                  | Channel 134                   | FREQUENCY RANGE    | 1 ~ 40GHz                 |
| INPUT POWER (SYSTEM)     | 120Vac, 60 Hz                 | DETECTOR FUNCTION  | Peak (PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 31.0deg. C, 57.0%RH<br>965hPa | TESTED BY          | Eric Lee                  |

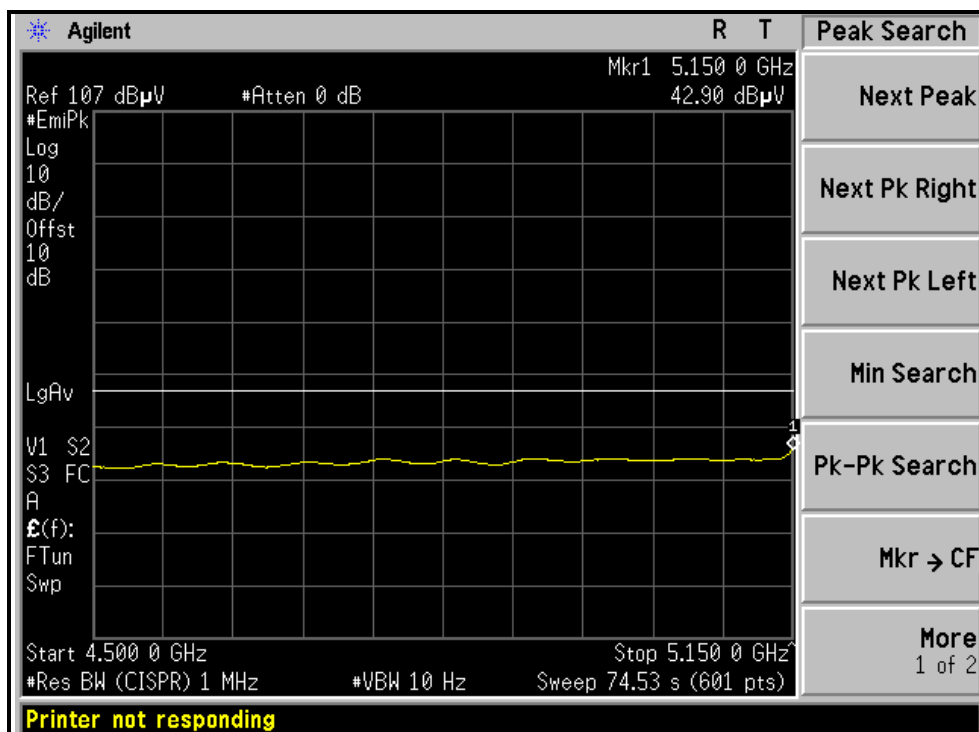
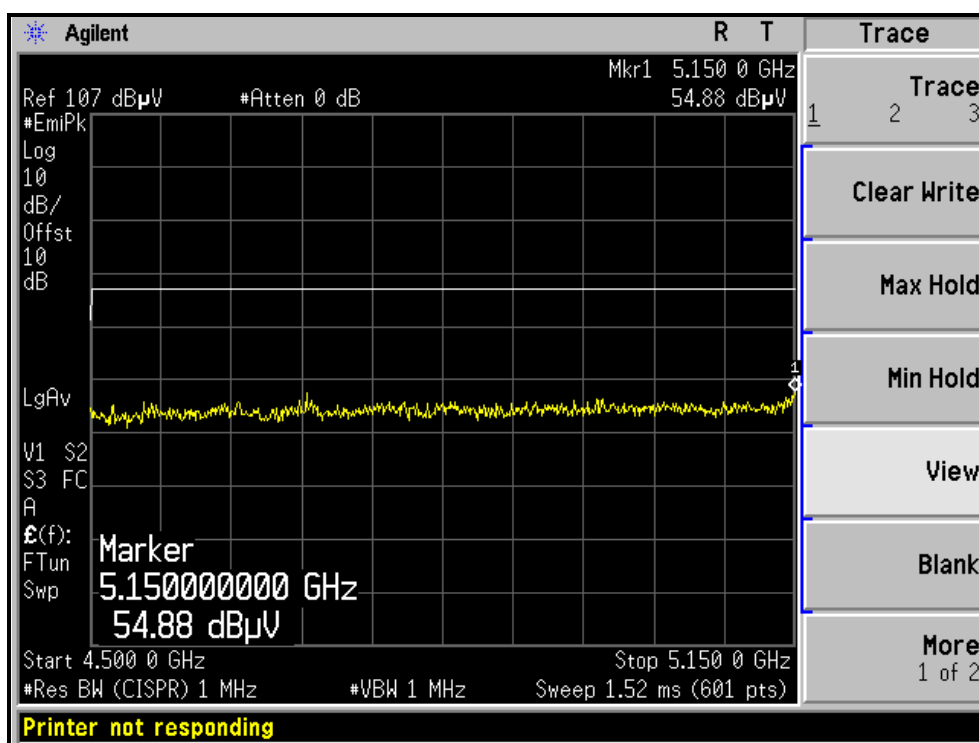
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|-----------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5670.00    | 105.90 PK               |                |             | 1.16 H             | 74                   | 68.16            | 37.74                    |
| 2                                                   | *5670.00    | 98.18 AV                |                |             | 1.16 H             | 74                   | 60.44            | 37.74                    |
| 3                                                   | #5725.00    | 66.40 PK                | 68.30          | -1.90       | 1.12 H             | 139                  | 28.50            | 37.90                    |
| 4                                                   | 11340.00    | 53.21 PK                | 74.00          | -20.79      | 1.15 H             | 114                  | 6.01             | 47.20                    |
| 5                                                   | 11340.00    | 41.89 AV                | 54.00          | -12.11      | 1.15 H             | 114                  | -5.31            | 47.20                    |
| 6                                                   | #17010.00   | 62.11 PK                | 68.30          | -6.19       | 1.20 H             | 241                  | 11.33            | 50.78                    |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |             |                         |                |             |                    |                      |                  |                          |
| NO.                                                 | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1                                                   | *5670.00    | 94.77 PK                |                |             | 1.26 V             | 83                   | 57.03            | 37.74                    |
| 2                                                   | *5670.00    | 76.69 AV                |                |             | 1.26 V             | 83                   | 38.95            | 37.74                    |
| 3                                                   | #5725.00    | 54.20 PK                | 68.30          | -14.10      | 1.32 V             | 62                   | 16.30            | 37.90                    |
| 4                                                   | 11340.00    | 55.71 PK                | 74.00          | -18.29      | 1.16 V             | 89                   | 8.51             | 47.20                    |
| 5                                                   | 11340.00    | 43.22 AV                | 54.00          | -10.78      | 1.16 V             | 89                   | -3.98            | 47.20                    |
| 6                                                   | #17010.00   | 62.25 PK                | 68.30          | -6.05       | 1.41 V             | 310                  | 11.47            | 50.78                    |

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
  2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. “ \* ”: Fundamental frequency.
  6. “ # ”: The radiated frequency is out the restricted band.

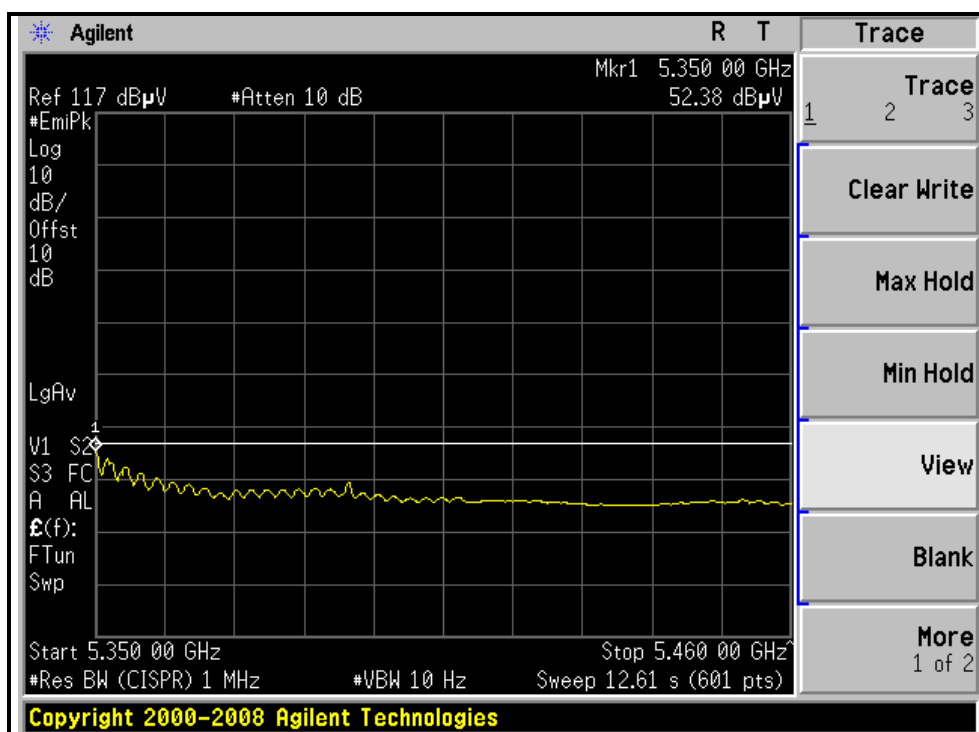
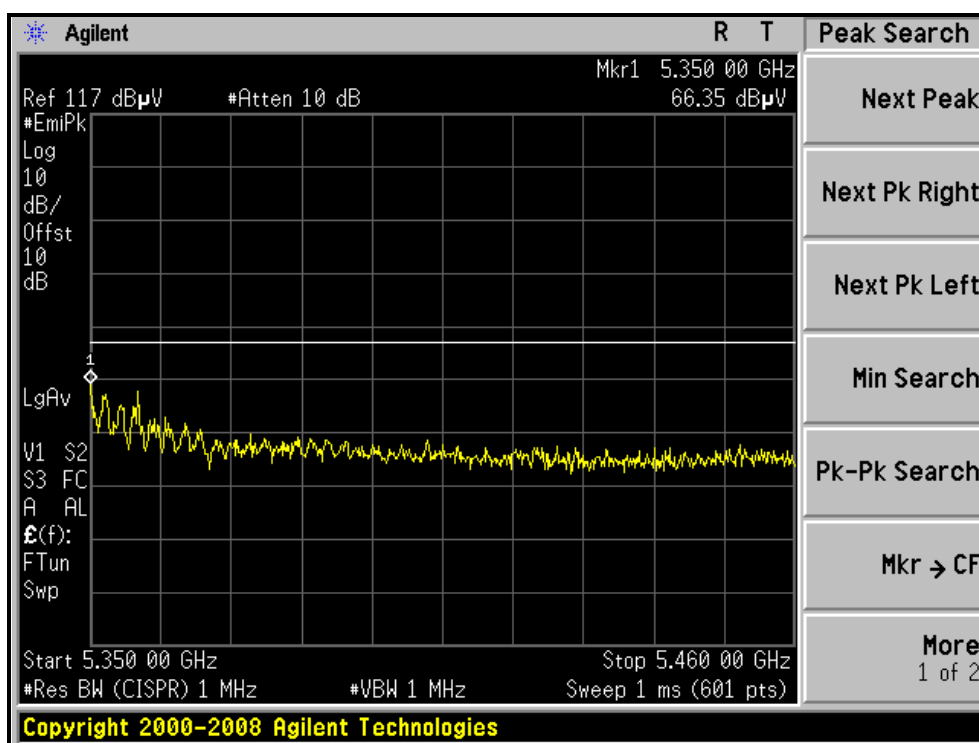
# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE, CH36, HORIZONTAL)



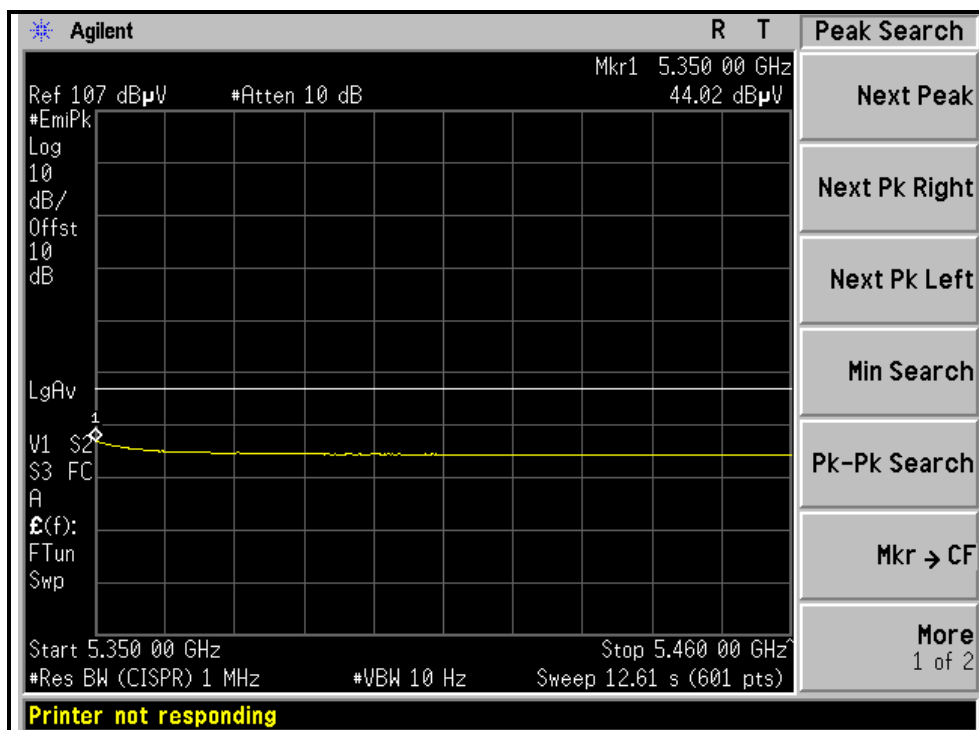
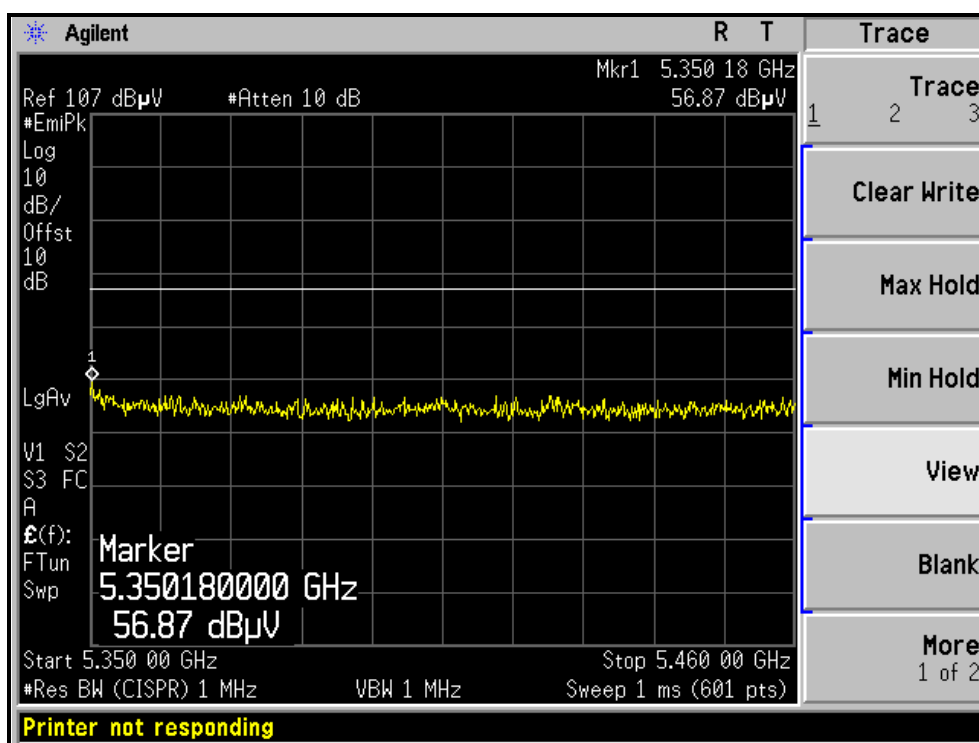
# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH36, VERTICAL )



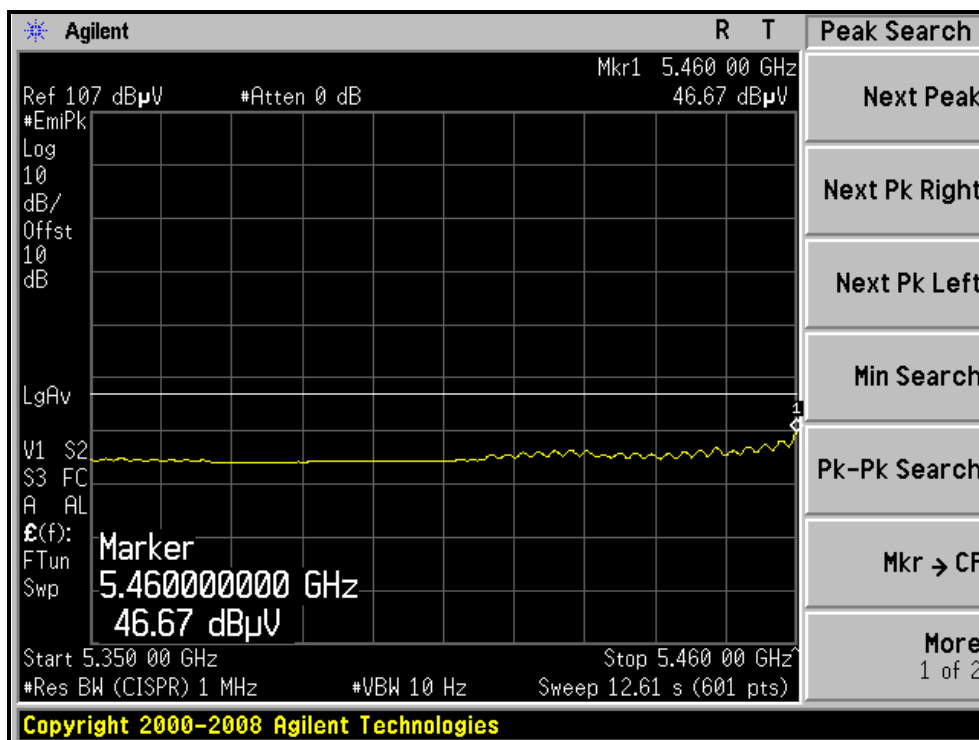
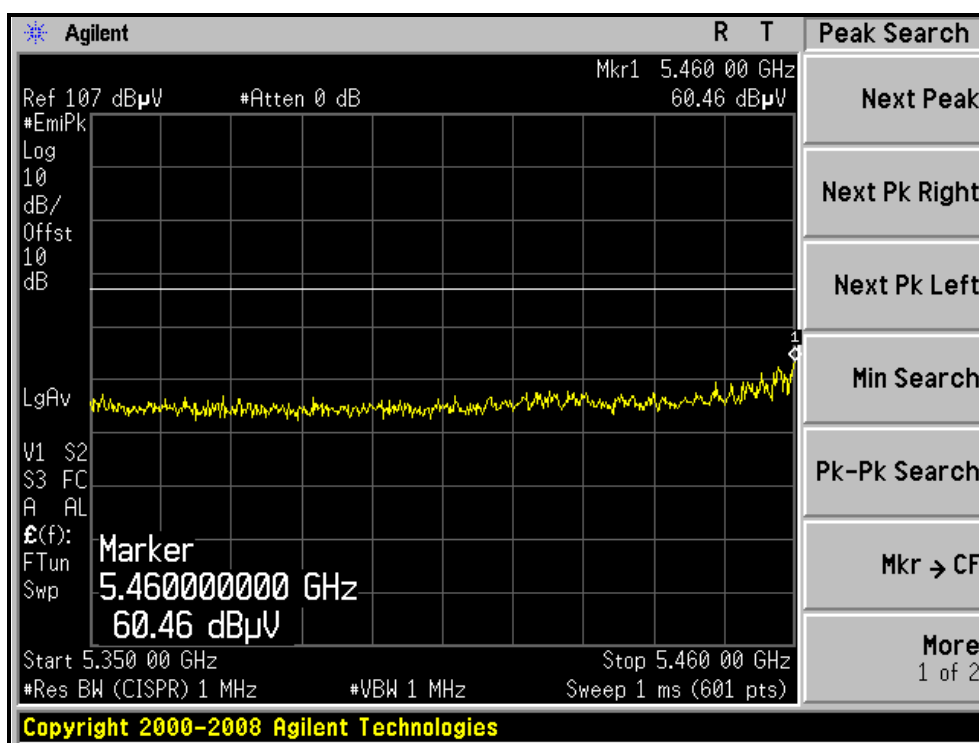
# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE, CH62, HORIZONTAL)



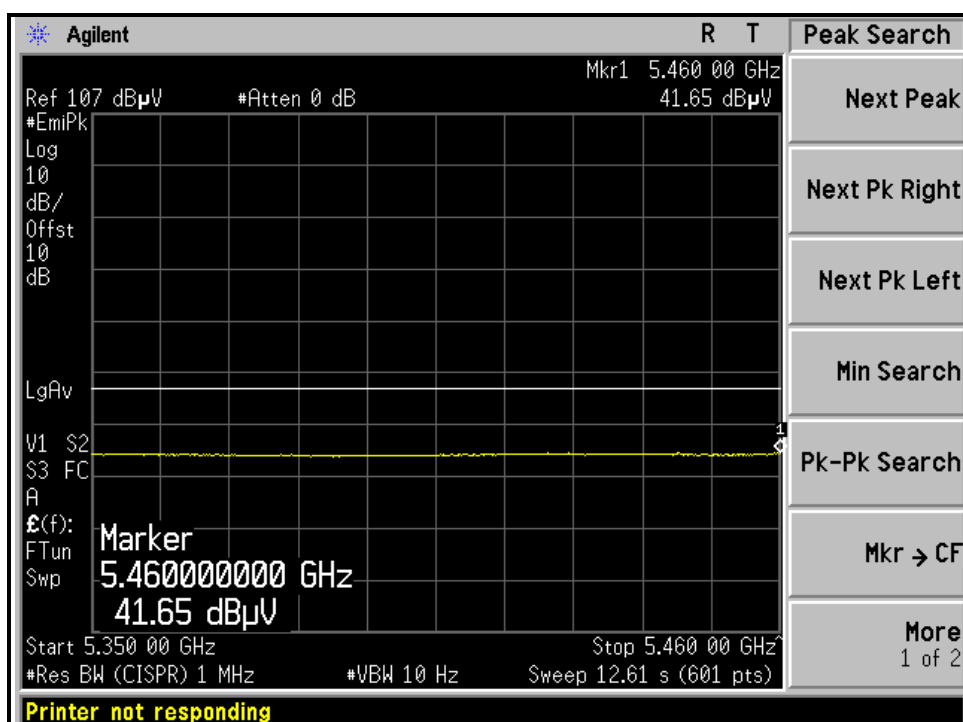
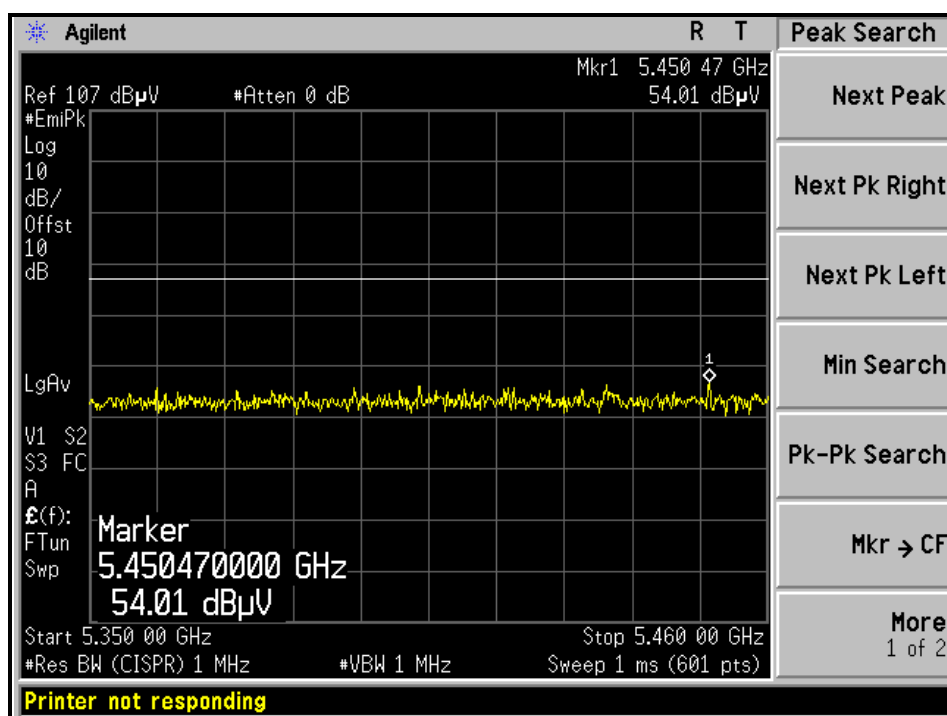
# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE, CH62, VERTICAL)



# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE, CH102, HORIZONTAL)



# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE, CH102, VERTICAL)





A D T

### 4.3 PEAK TRANSMIT POWER MEASUREMENT

#### 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

| Frequency Band   | Limit                                         |
|------------------|-----------------------------------------------|
| 5.15 – 5.25GHz   | The lesser of 50mW (17dBm) or 4dBm + 10logB   |
| 5.25 – 5.35GHz   | The lesser of 250mW (24dBm) or 11dBm + 10logB |
| 5.47 – 5.725GHz  | The lesser of 250mW (24dBm) or 11dBm + 10logB |
| 5.725 – 5.825GHz | The lesser of 1W (30dBm) or 17dBm + 10logB    |

**NOTE:** Where B is the 26dB emission bandwidth in MHz.

#### 4.3.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER  | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|-----------------------------|-----------|------------|-----------------|------------------|
| ADVANTEST SPECTRUM ANALYZER | U3772     | 160100280  | Aug. 03, 2009   | Aug. 02, 2010    |

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.3.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth of the signal.
3. Set RBW to 1MHz, VBW to 300kHz.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

**NOTE:**

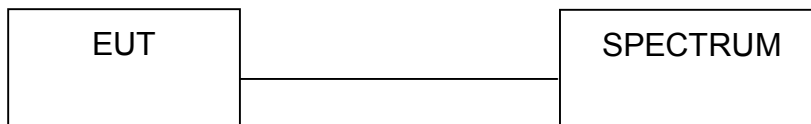
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 1 is used.

#### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.3.5 TEST SETUP



#### 4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

#### 4.3.7 TEST RESULTS

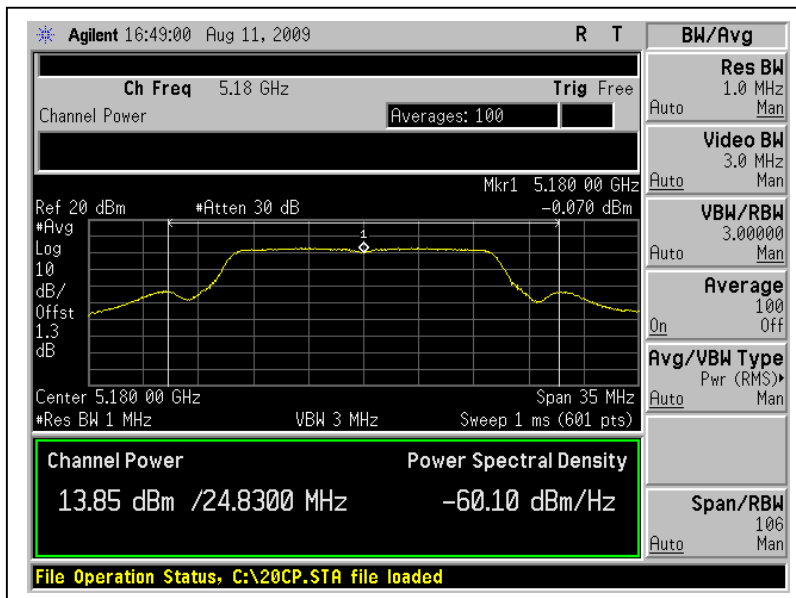
##### 802.11a OFDM MODULATION:

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6Mbps                  |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 23deg.C, 54%RH, 965hPa |
| <b>TESTED BY</b>            | Rex Huang     |                                 |                        |

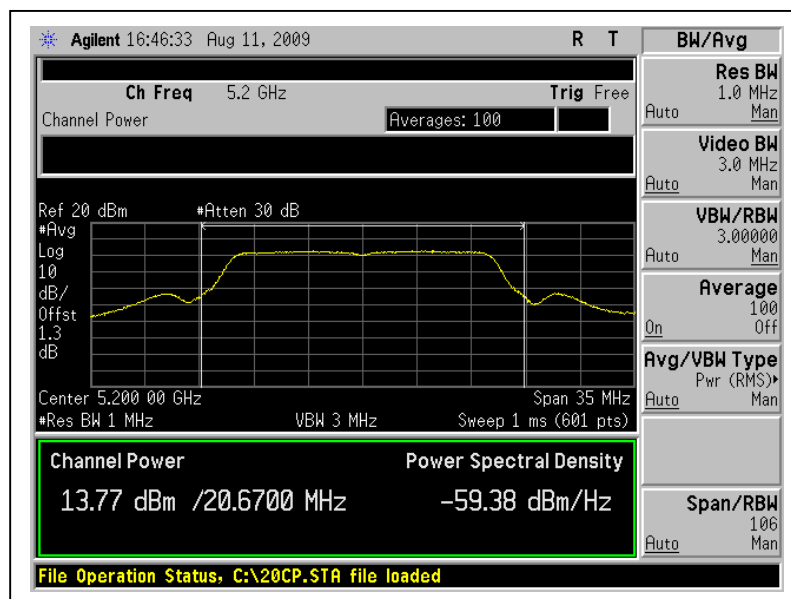
| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (dBm) | PEAK POWER OUTPUT (mW) | PEAK POWER LIMIT (dBm) | 26dBc Occupied Bandwidth (MHz) | PASS/FAIL |
|---------|-------------------------|-------------------------|------------------------|------------------------|--------------------------------|-----------|
| 36      | 5180                    | 13.85                   | 24.266                 | 17                     | 24.83                          | PASS      |
| 40      | 5200                    | 13.77                   | 23.823                 | 17                     | 20.67                          | PASS      |
| 48      | 5240                    | 13.66                   | 23.227                 | 17                     | 25.42                          | PASS      |
| 52      | 5260                    | 13.70                   | 23.442                 | 24                     | 25.67                          | PASS      |
| 60      | 5300                    | 13.87                   | 24.378                 | 24                     | 25.67                          | PASS      |
| 64      | 5320                    | 13.61                   | 22.961                 | 24                     | 22.58                          | PASS      |
| 100     | 5500                    | 13.45                   | 22.131                 | 24                     | 22.83                          | PASS      |
| 120     | 5600                    | 13.92                   | 24.660                 | 24                     | 20.67                          | PASS      |
| 140     | 5700                    | 14.34                   | 27.164                 | 24                     | 25.42                          | PASS      |

**NOTE:** The 26dBc Occupied Bandwidth plot, please refer to the following pages.

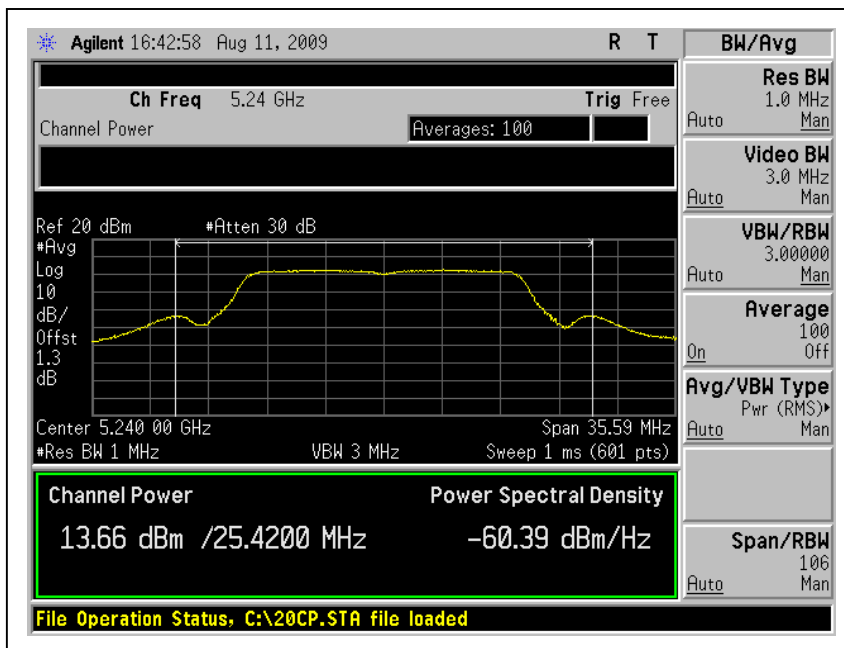
## Peak Power Output: CH36



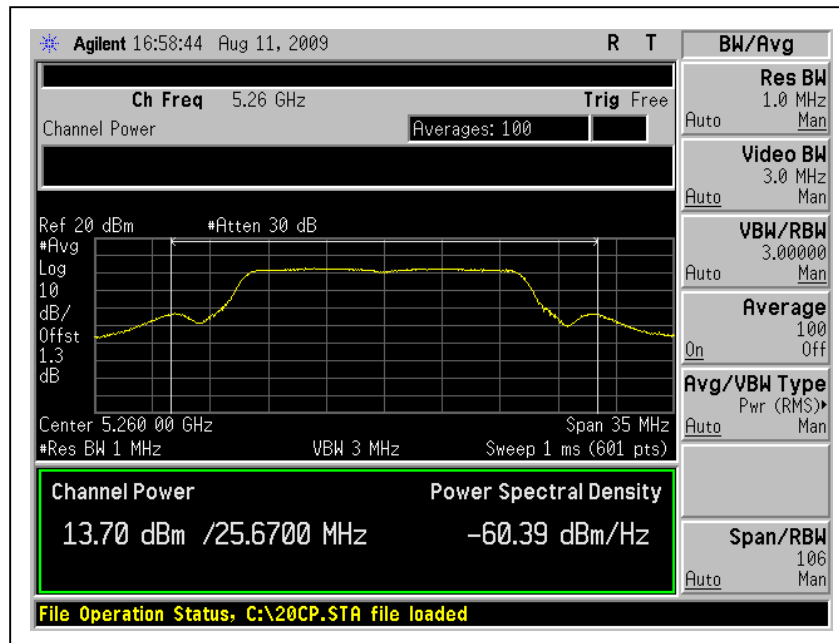
## CH40



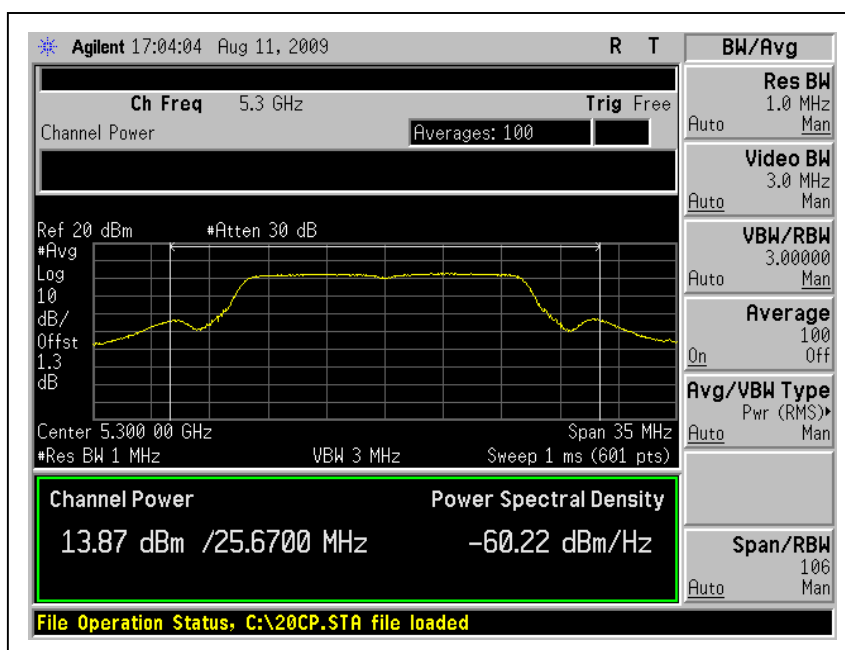
## CH48



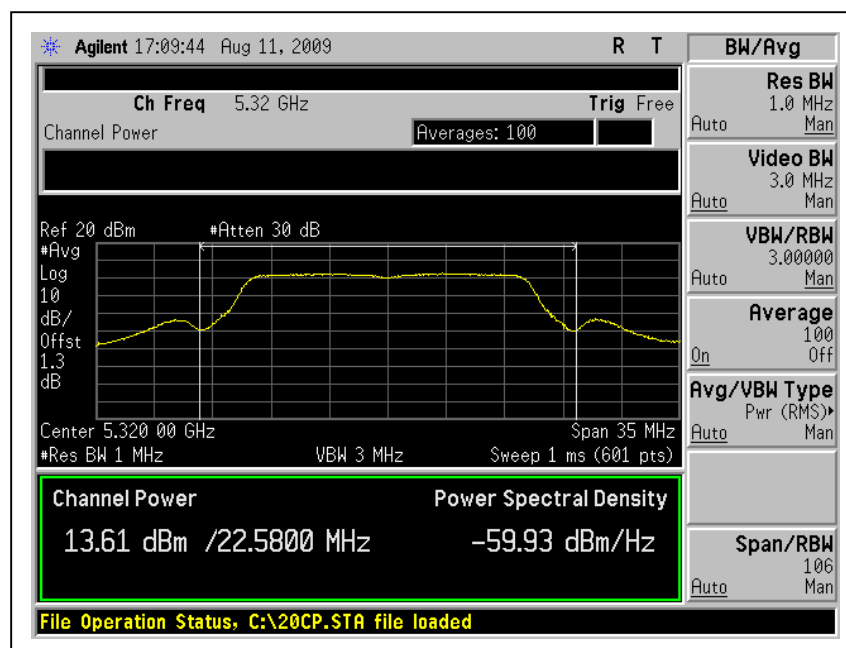
## CH52



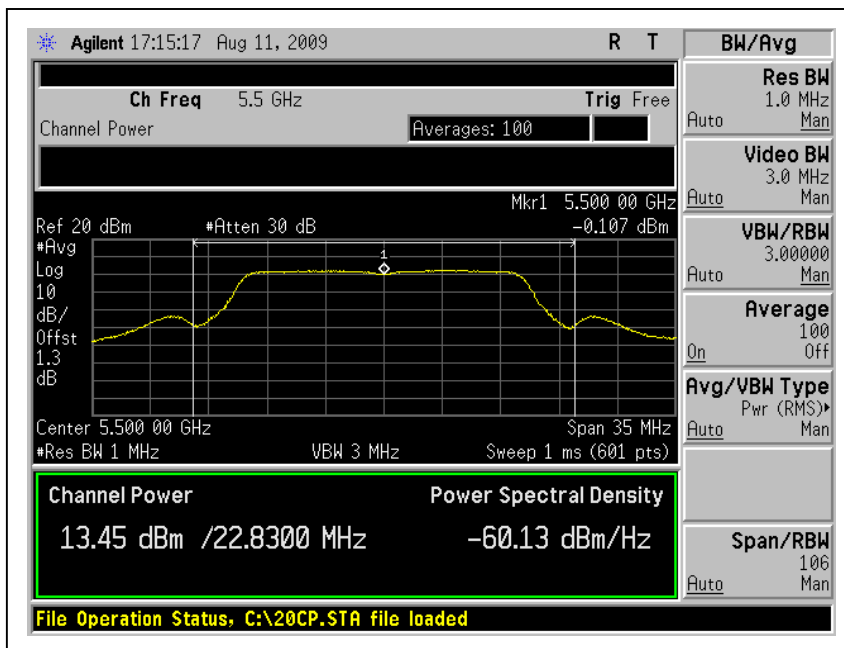
## CH60



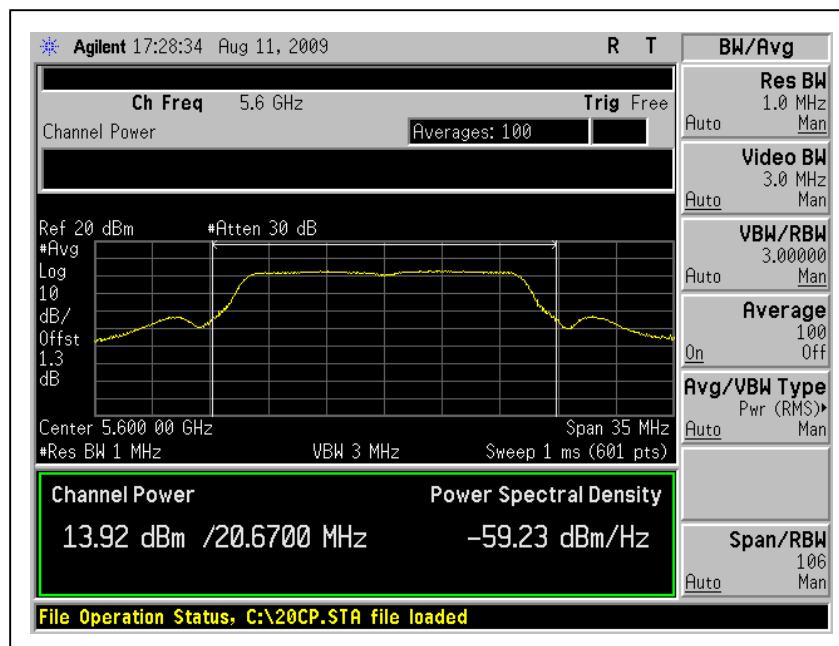
## CH64



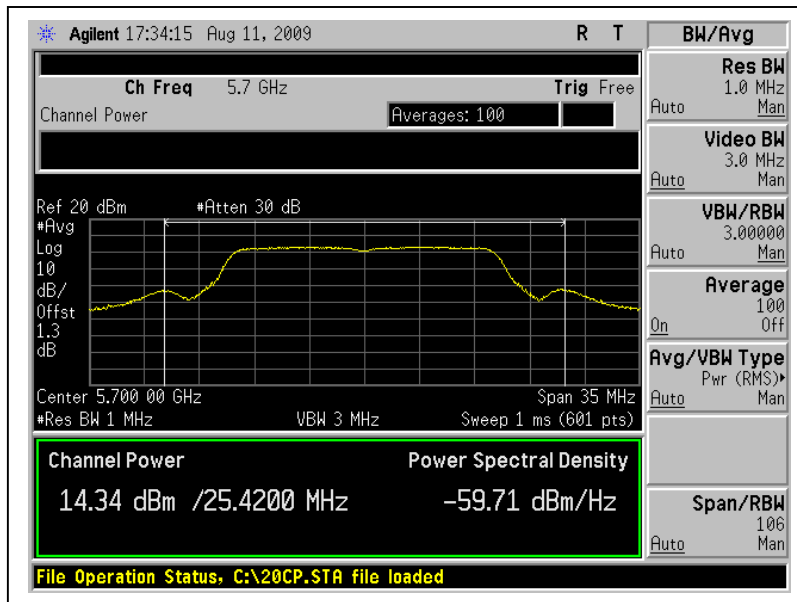
## CH100



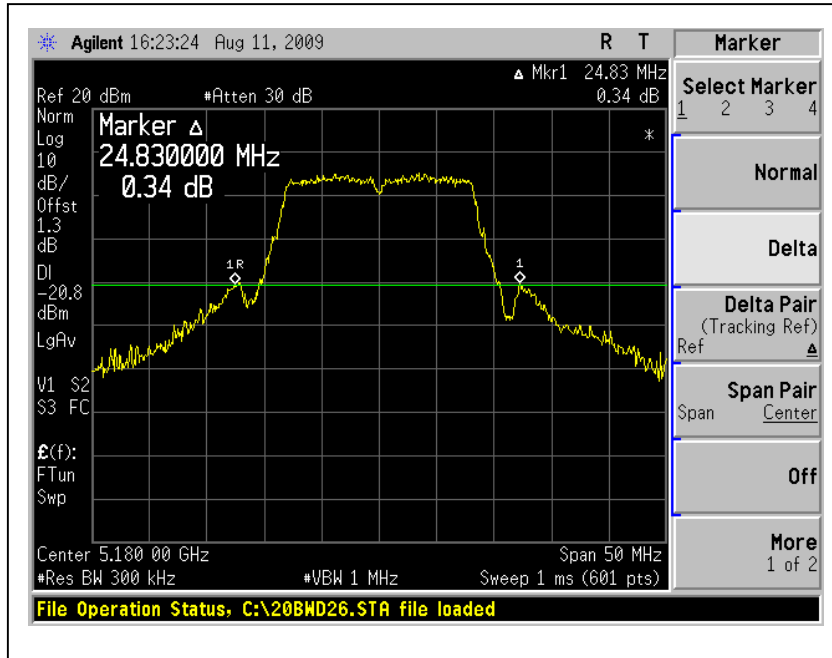
## CH120



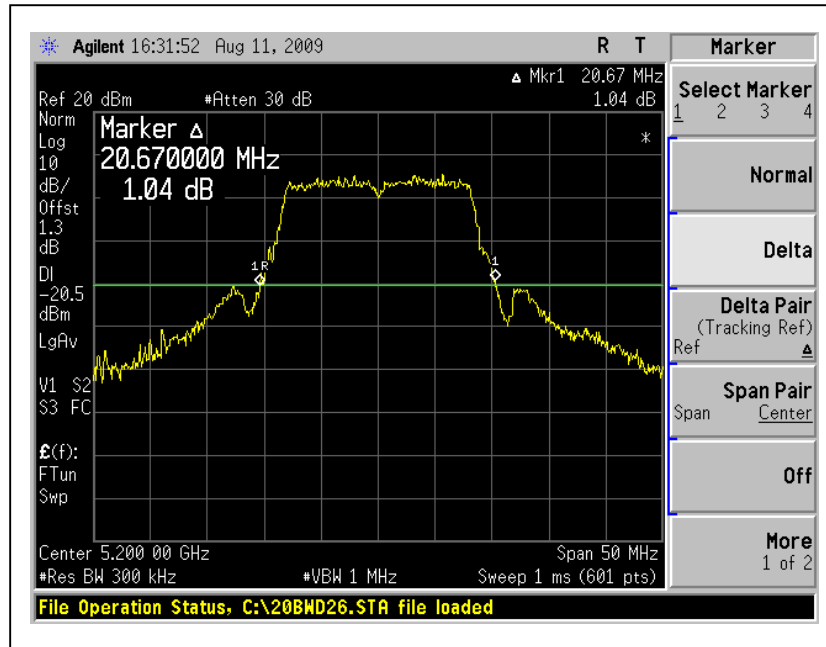
## CH140



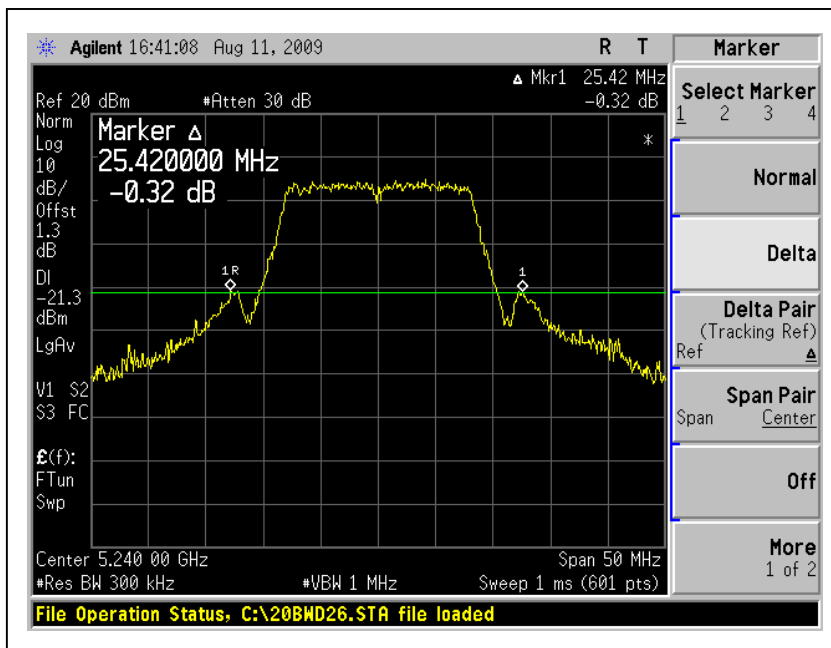
## 26dB Occupied Bandwidth: CH36



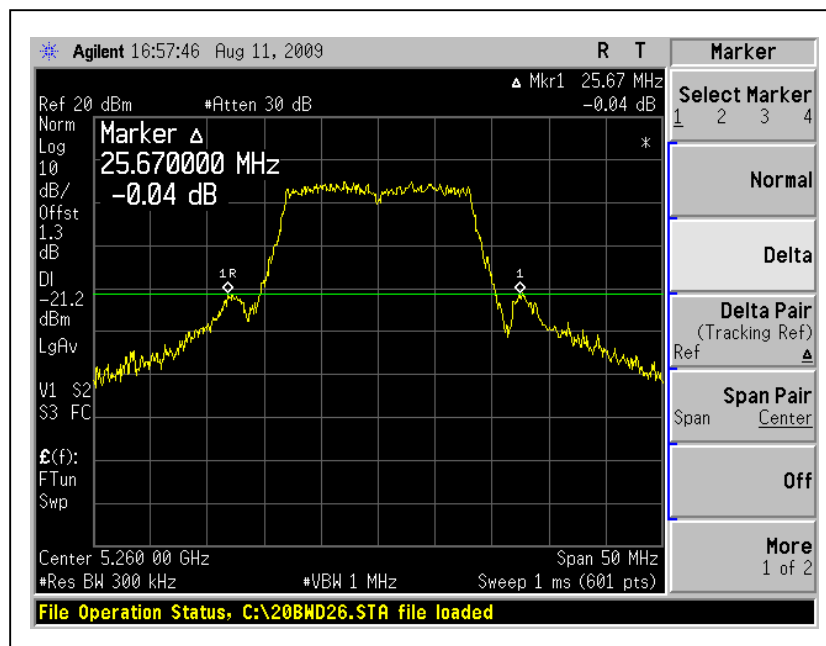
## CH40



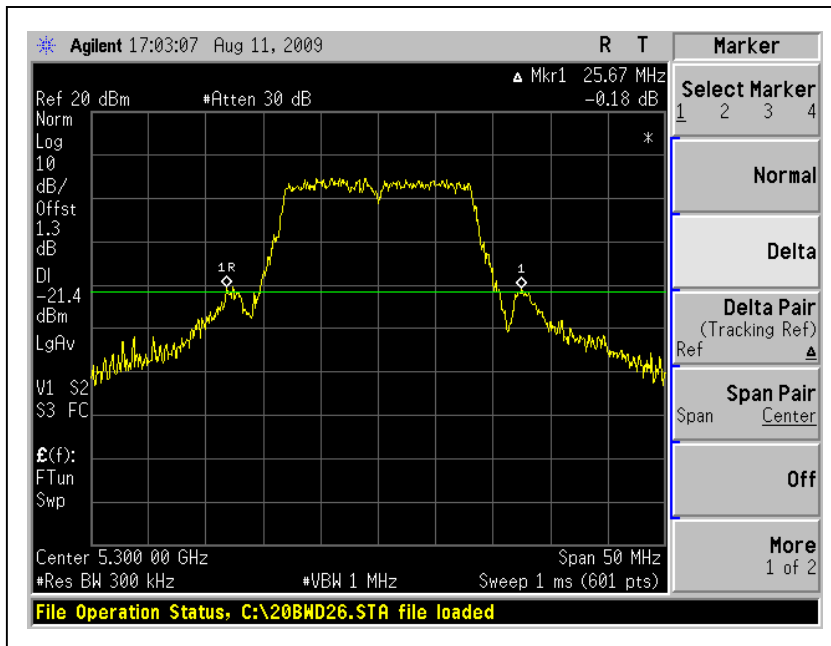
## CH48



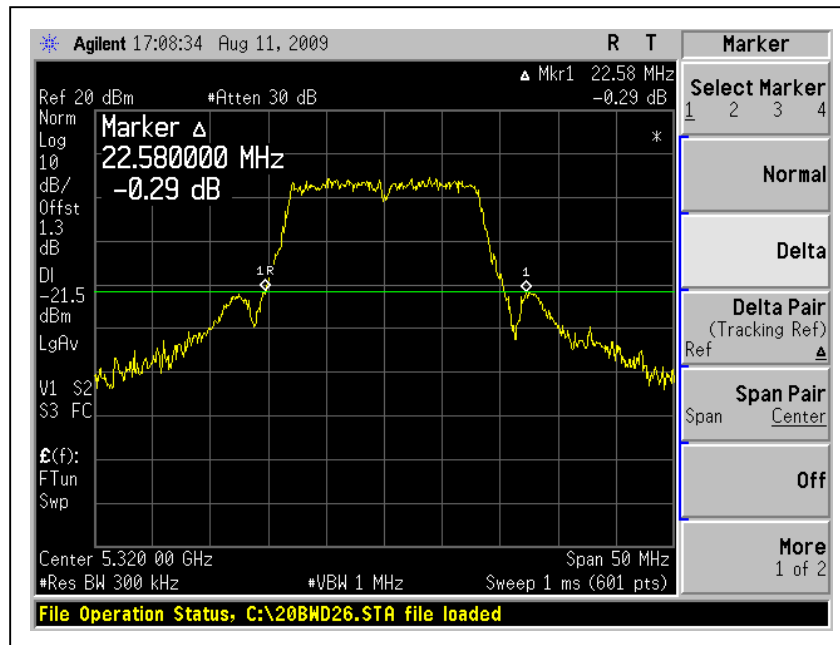
## CH52



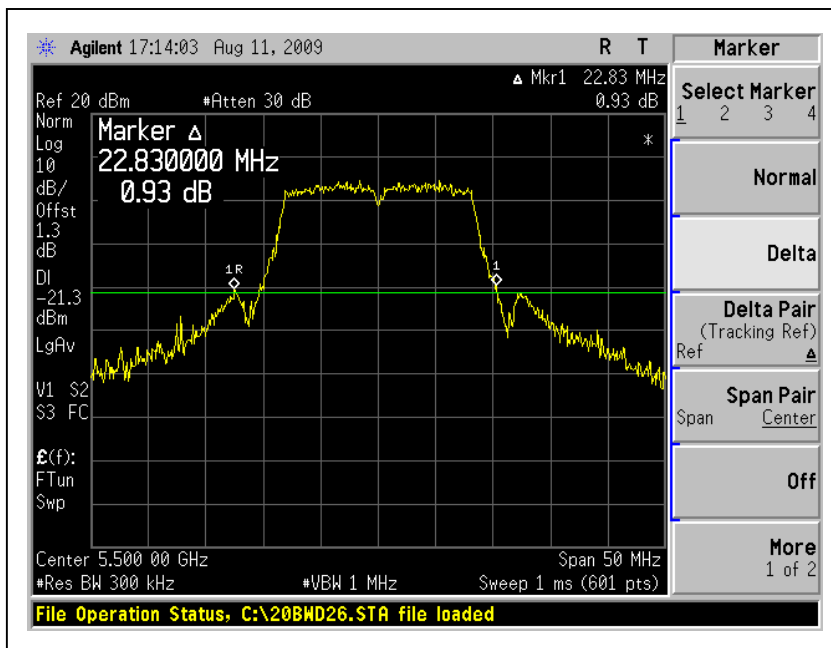
## CH60



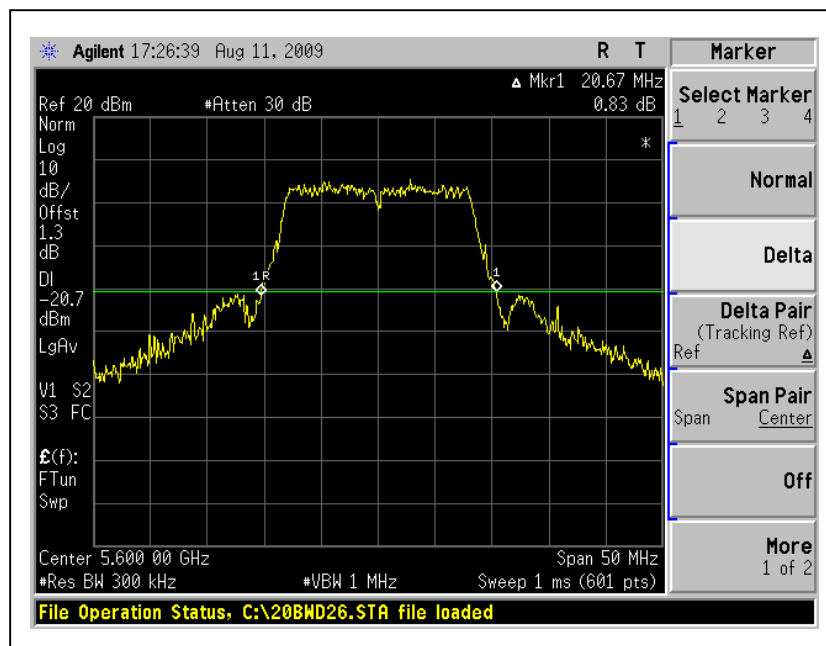
## CH64



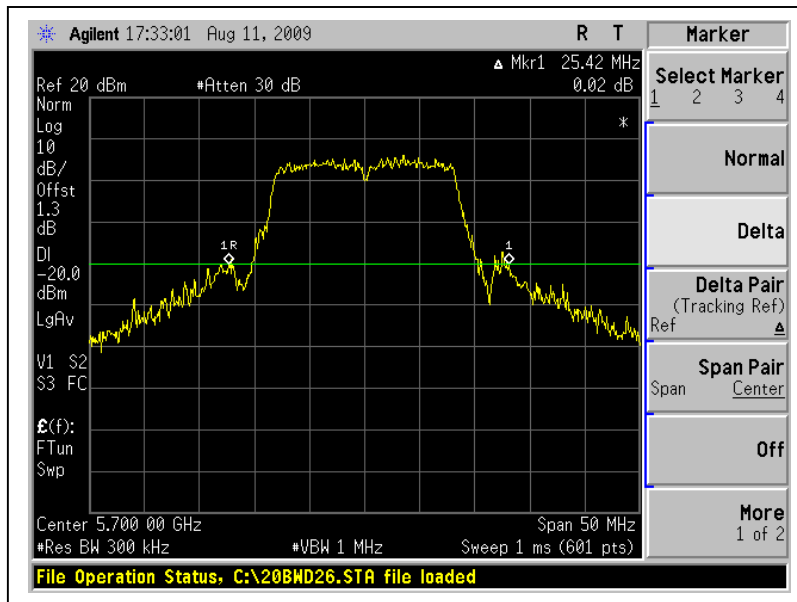
## CH100



## CH120



## CH140



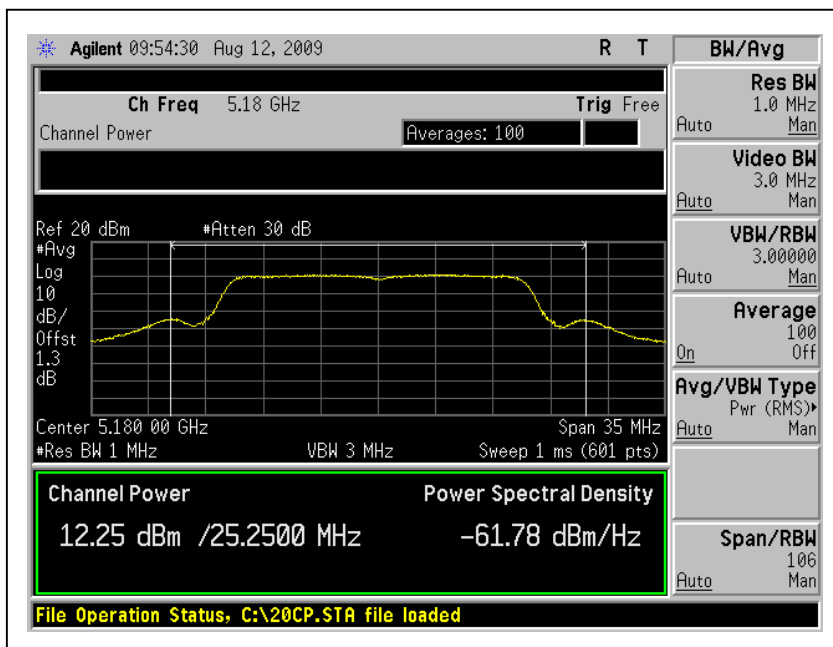
### DRAFT 802.11n (20MHz) OFDM modulation:

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 13Mbps                 |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 25deg.C, 60%RH, 965hPa |
| <b>TESTED BY</b>            | Phoenix Huang |                                 |                        |

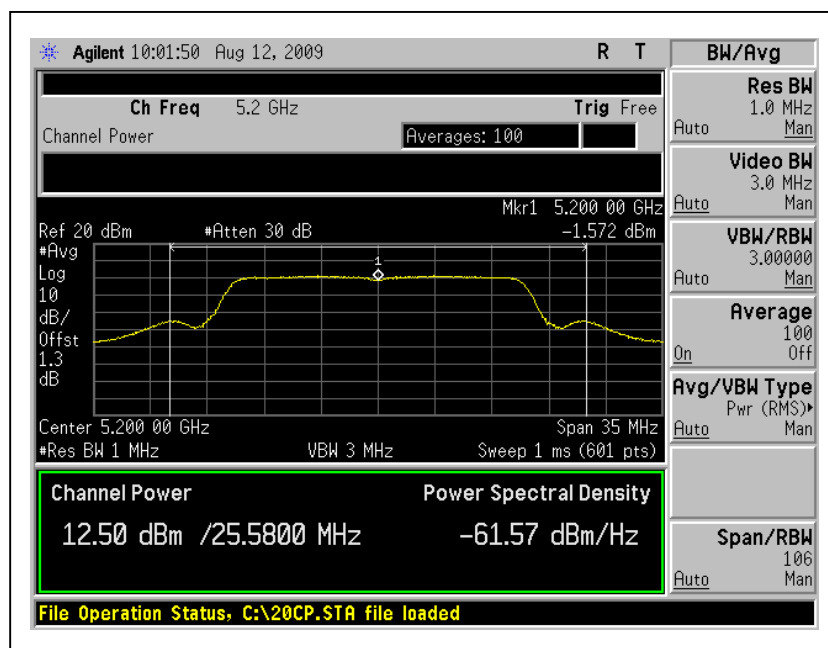
| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (dBm) |         | PEAK POWER OUTPUT (mW) |         | TOTAL PEAK POWER (dBm) | TOTAL PEAK POWER (mW) | PEAK POWER LIMIT (DBM) | 26dBc Occupied Bandwidth (MHz) | PASS/ FAIL |
|---------|-------------------------|-------------------------|---------|------------------------|---------|------------------------|-----------------------|------------------------|--------------------------------|------------|
|         |                         | Chain 0                 | Chain 1 | Chain 0                | Chain 1 |                        |                       |                        |                                |            |
| 36      | 5180                    | 12.25                   | 12.24   | 16.788                 | 16.749  | 15.26                  | 33.537                | 17.00                  | 25.25                          | PASS       |
| 40      | 5200                    | 12.50                   | 12.17   | 17.783                 | 16.482  | 15.35                  | 34.265                | 17.00                  | 25.58                          | PASS       |
| 48      | 5240                    | 12.24                   | 12.22   | 16.749                 | 16.672  | 15.24                  | 33.421                | 17.00                  | 25.17                          | PASS       |
| 52      | 5260                    | 13.61                   | 13.72   | 22.961                 | 23.550  | 16.68                  | 46.511                | 24.00                  | 25.33                          | PASS       |
| 60      | 5300                    | 13.20                   | 13.23   | 20.893                 | 21.038  | 16.23                  | 41.931                | 24.00                  | 25.33                          | PASS       |
| 64      | 5320                    | 13.25                   | 13.25   | 21.135                 | 21.135  | 16.26                  | 42.270                | 24.00                  | 22.92                          | PASS       |
| 100     | 5500                    | 12.12                   | 12.44   | 16.293                 | 17.539  | 15.29                  | 33.832                | 24.00                  | 25                             | PASS       |
| 120     | 5600                    | 13.88                   | 14.15   | 24.434                 | 26.002  | 17.03                  | 50.436                | 24.00                  | 23                             | PASS       |
| 140     | 5700                    | 12.60                   | 13.16   | 18.197                 | 20.701  | 15.90                  | 38.898                | 24.00                  | 24.67                          | PASS       |

**NOTE:** The 26dBc Occupied Bandwidth plot, please refer to the following pages.

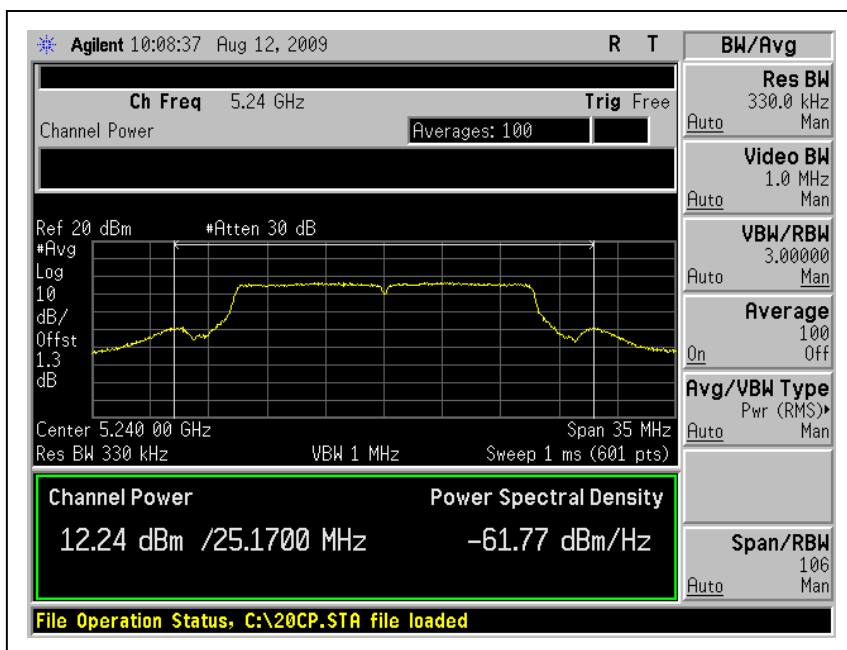
Peak Power Output:  
For Chain (0) :CH36



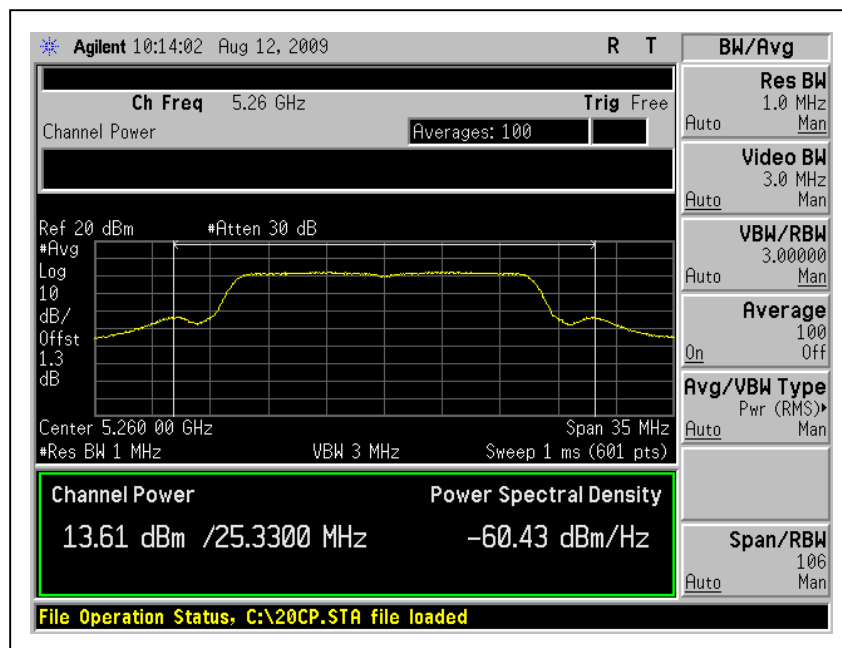
CH40



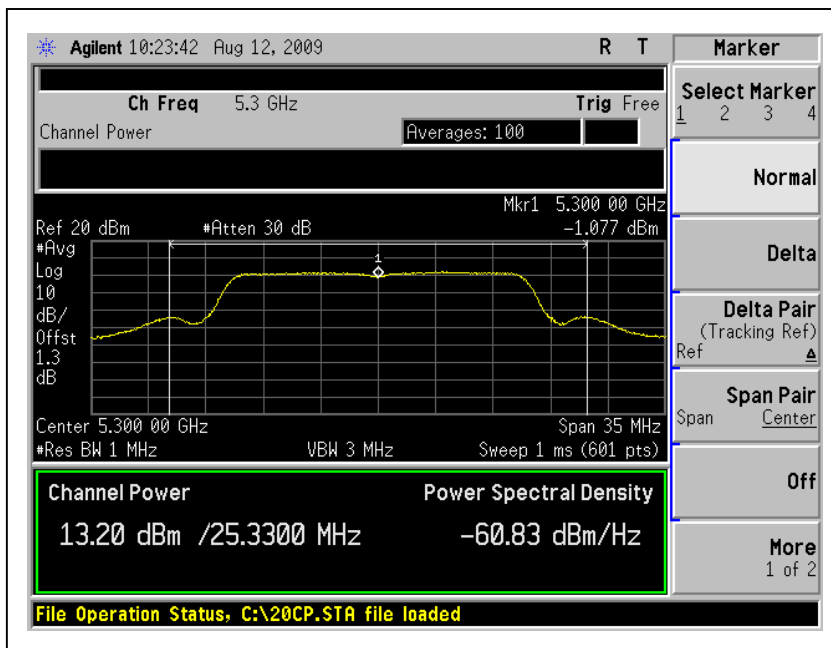
## CH48



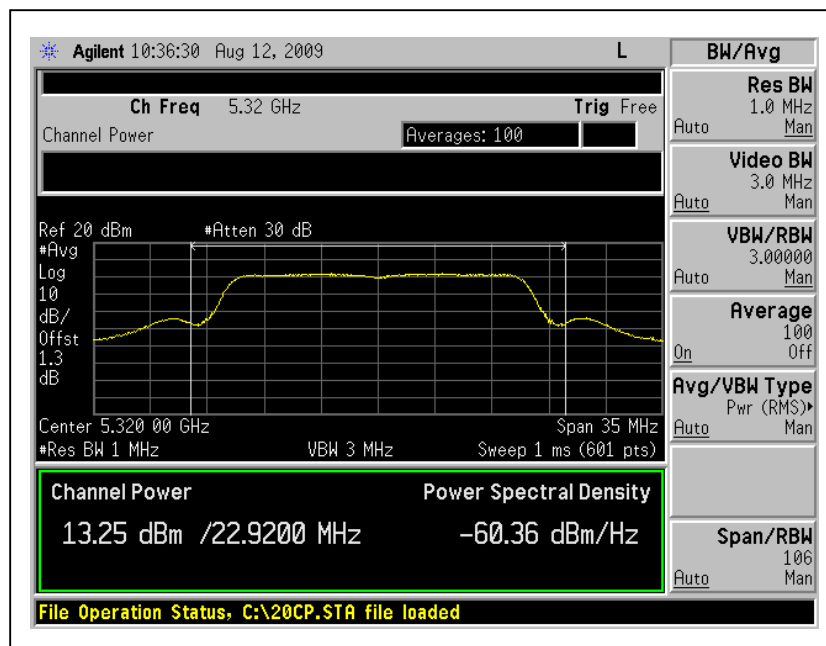
## CH52



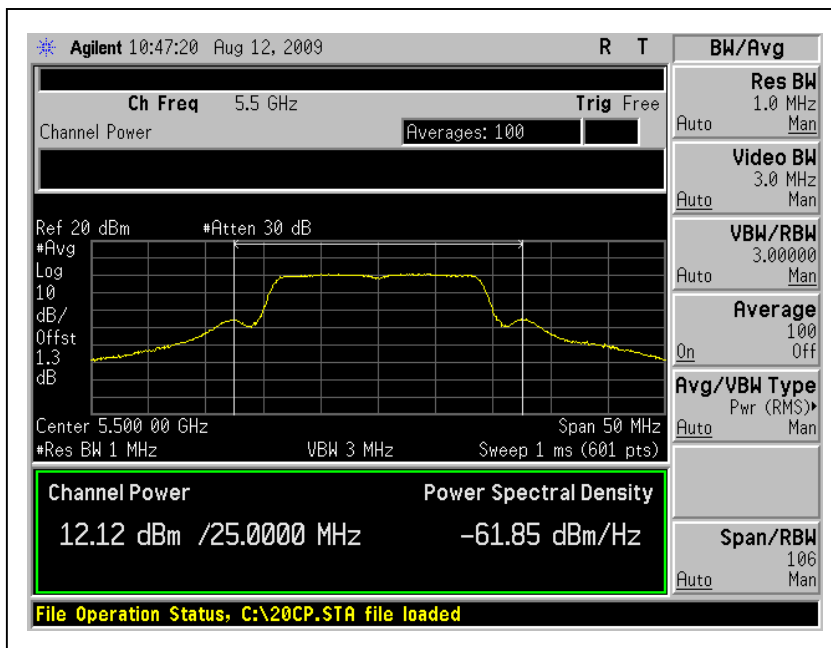
## CH60



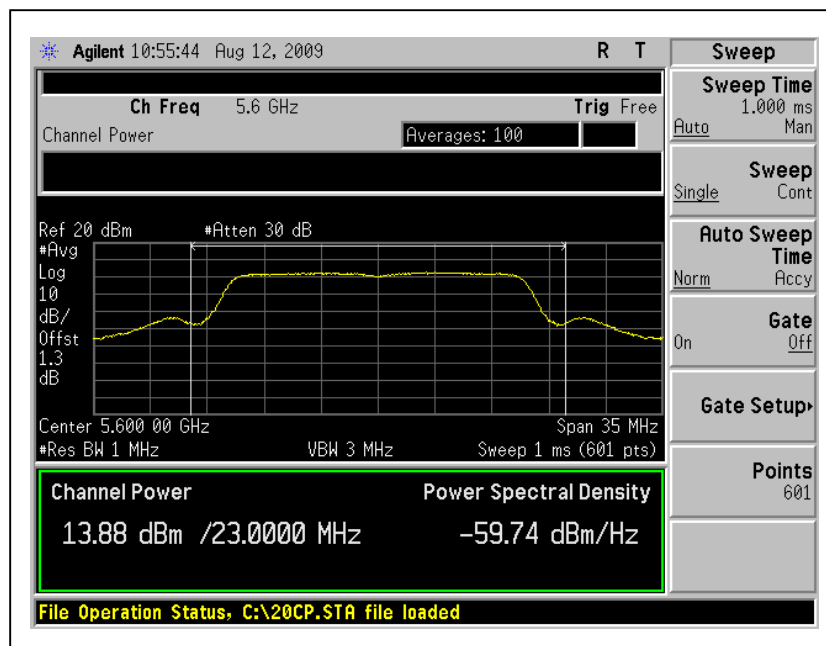
## CH64



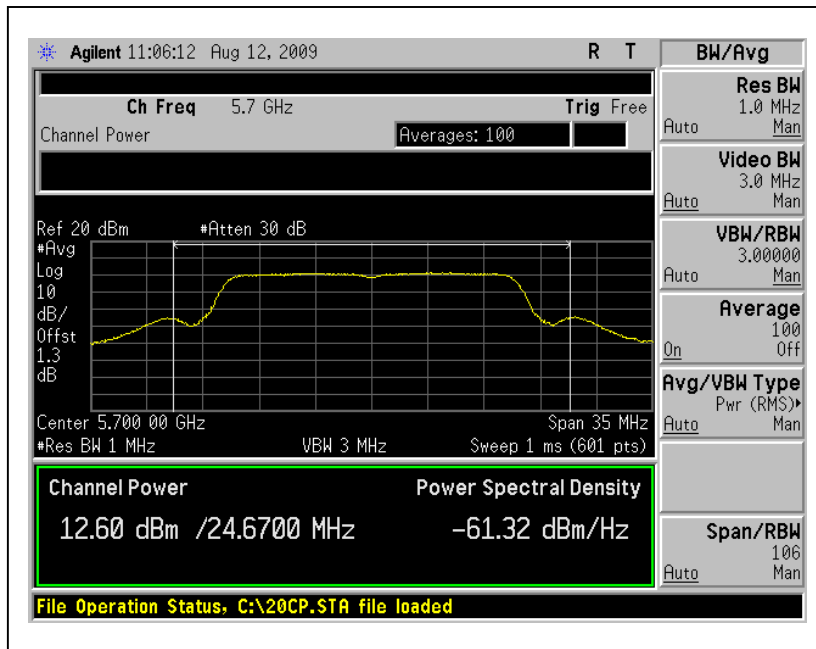
## CH100



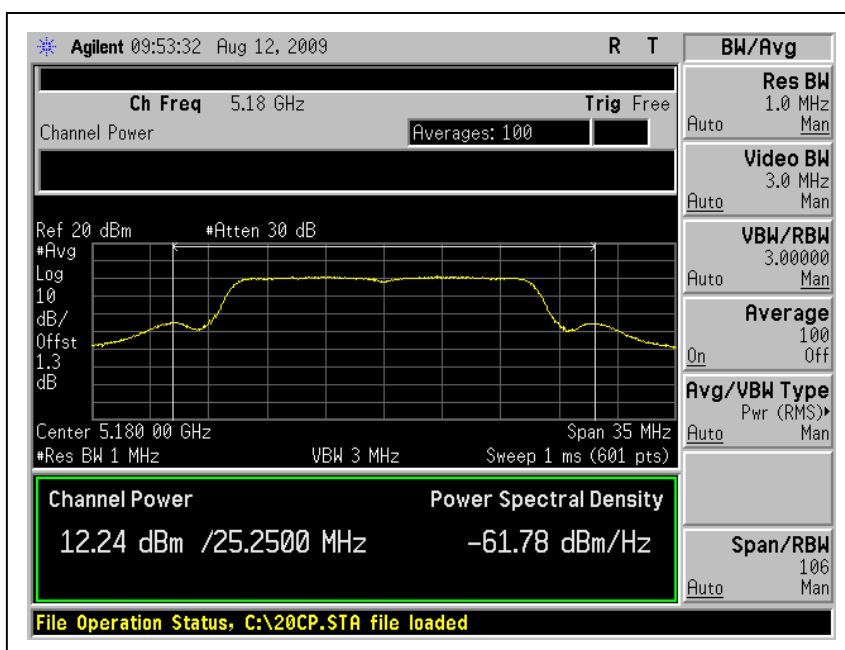
## CH120



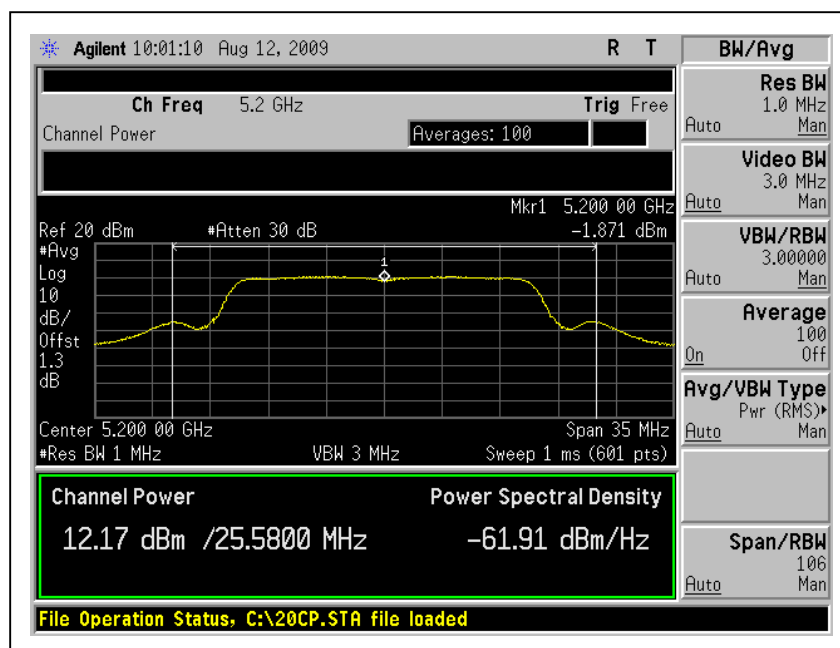
## CH140



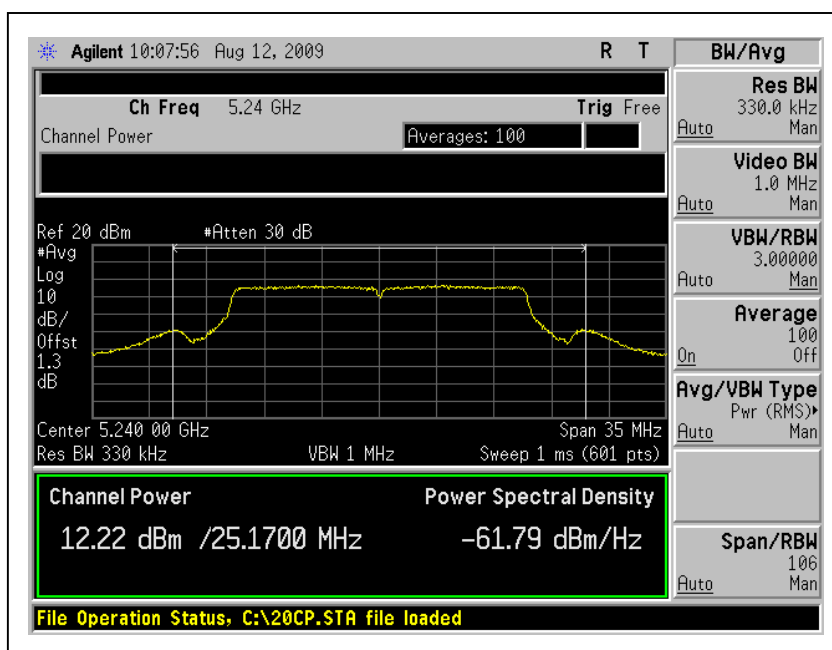
For Chain (1) :CH36



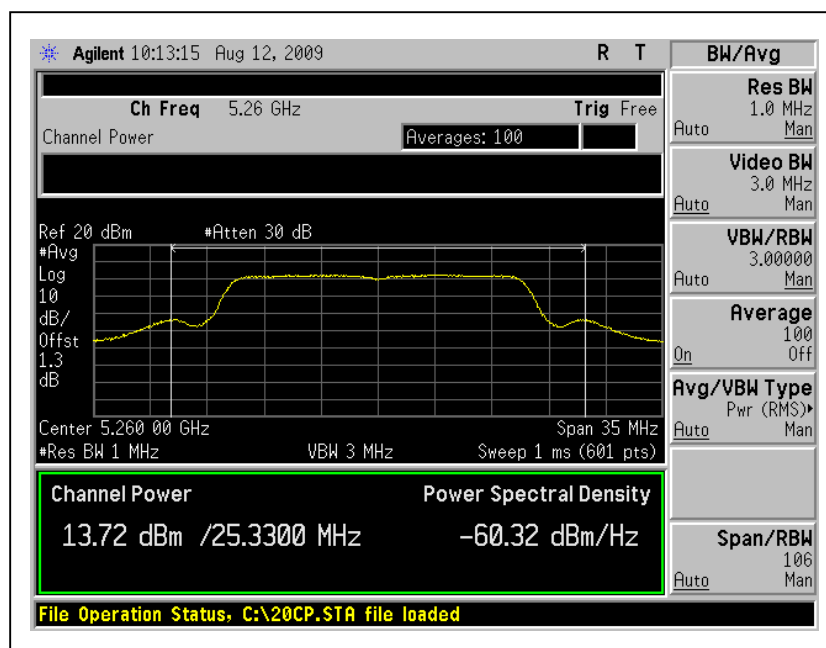
CH40



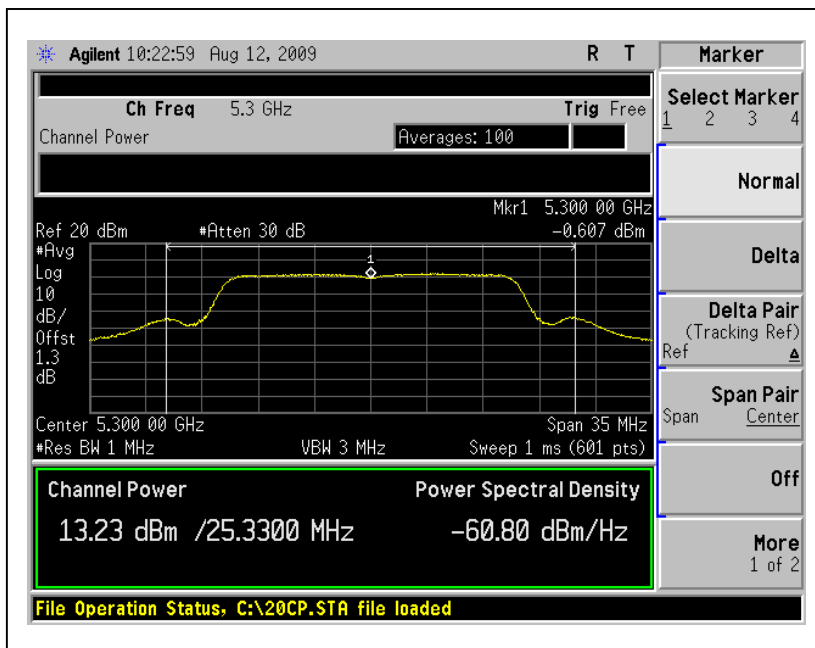
## CH48



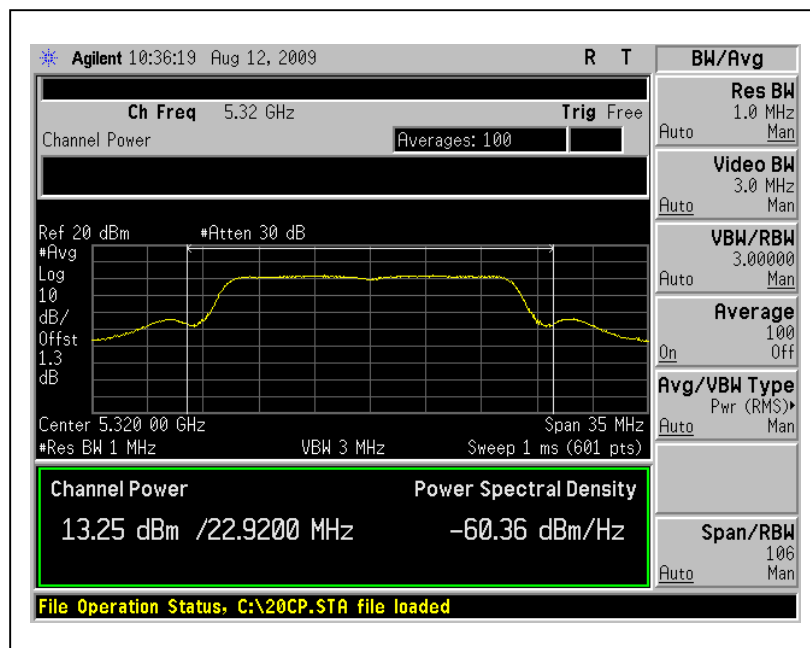
## CH52



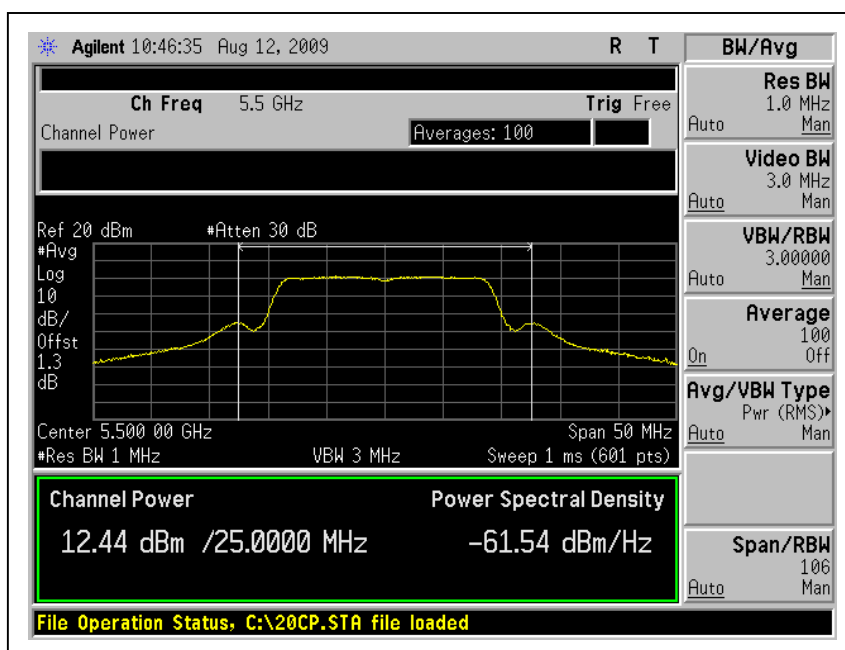
## CH60



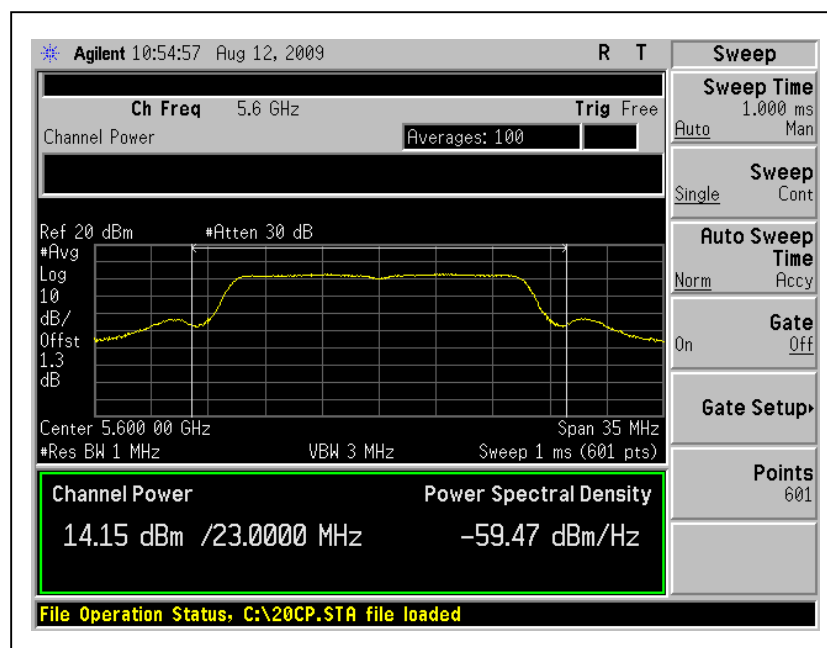
## CH64



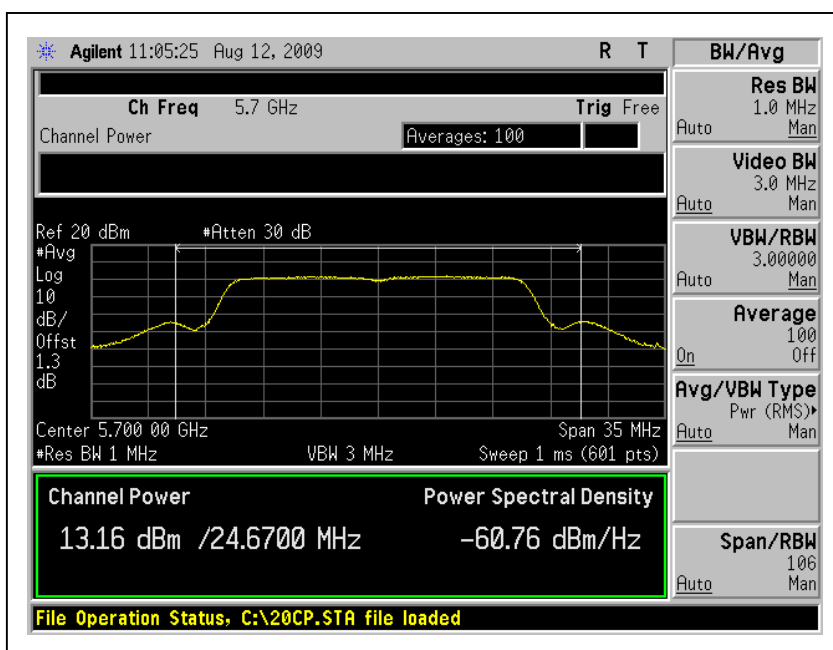
# CH100



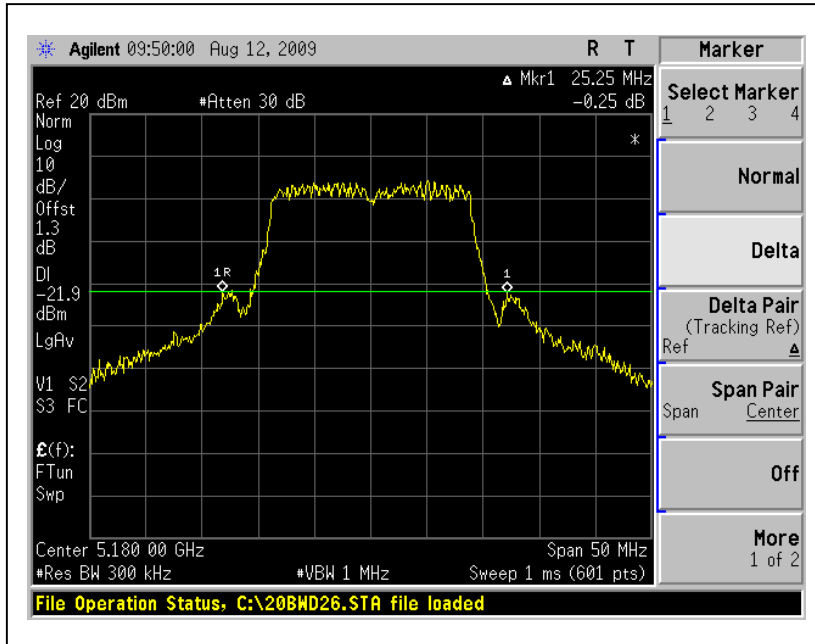
# CH120



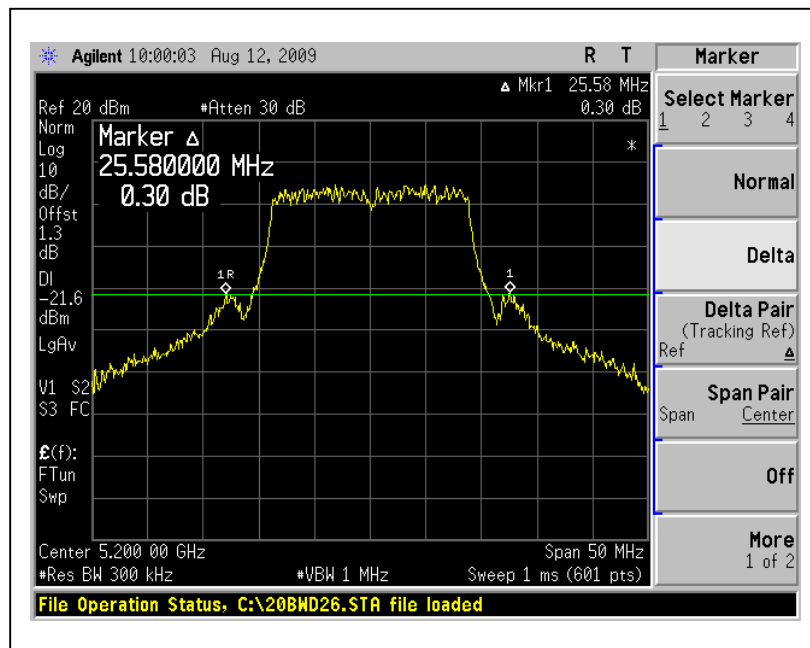
# CH140



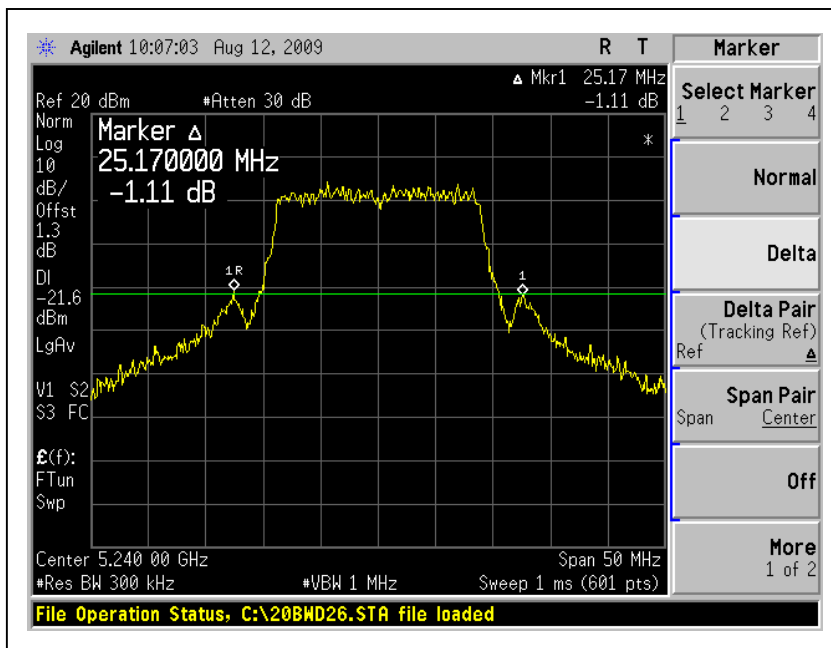
## 26dB Occupied Bandwidth: CH36



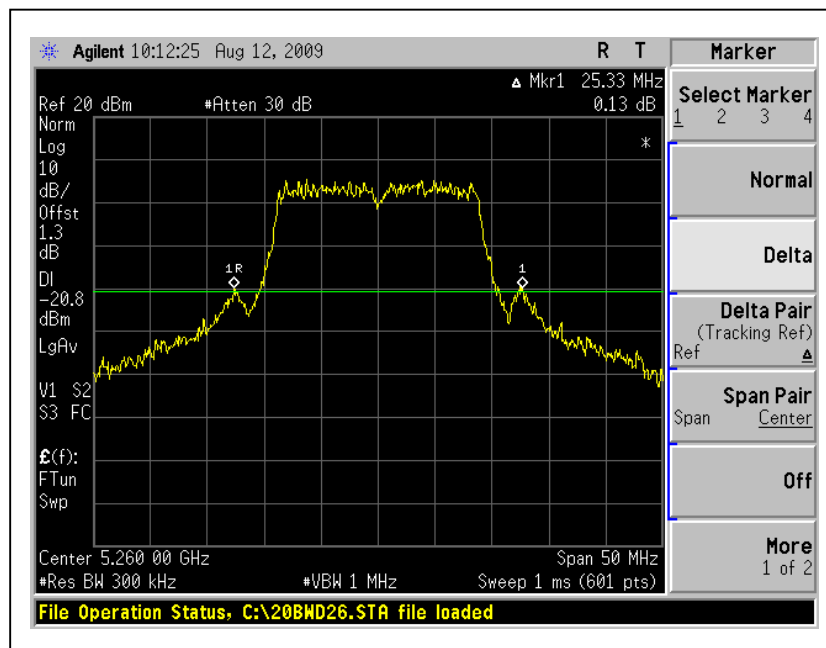
## CH40



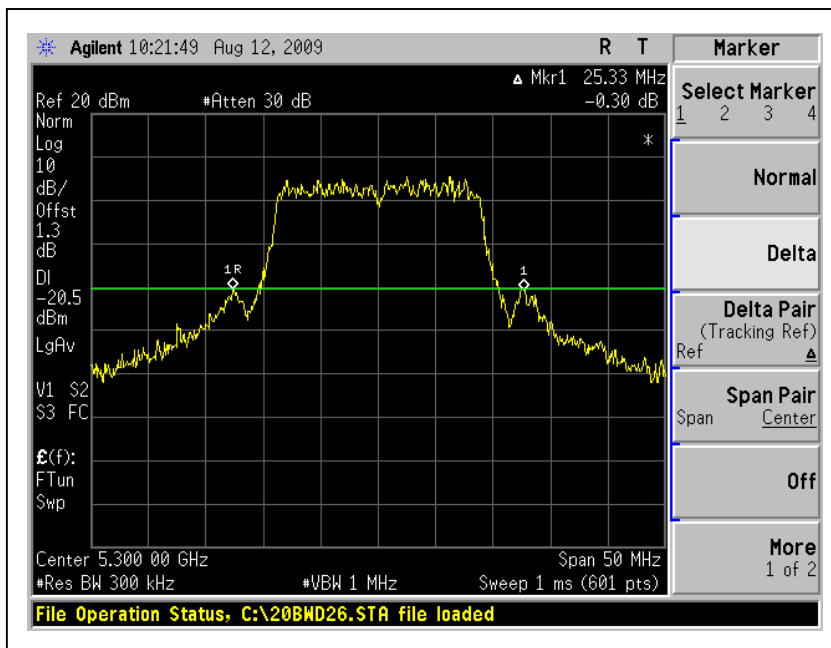
## CH48



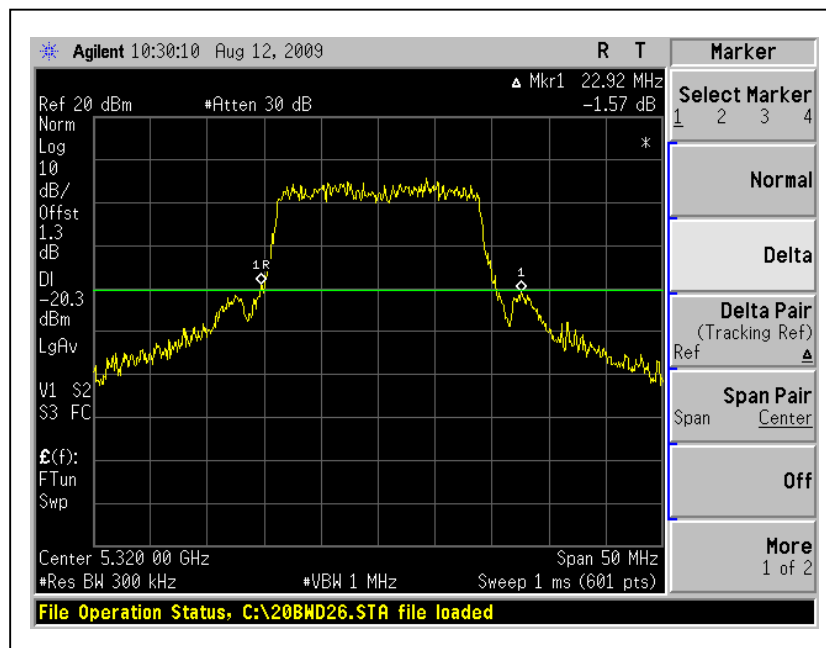
## CH52



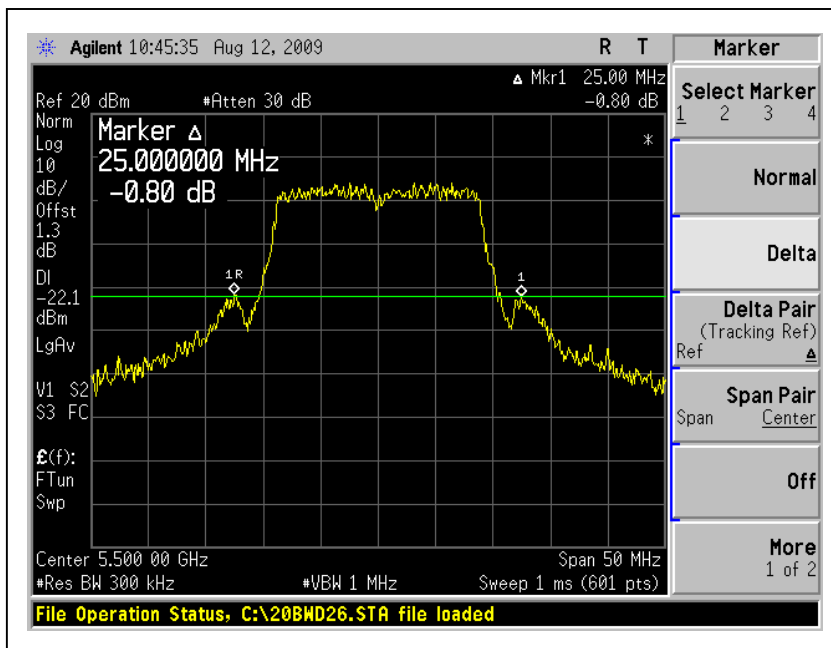
## CH60



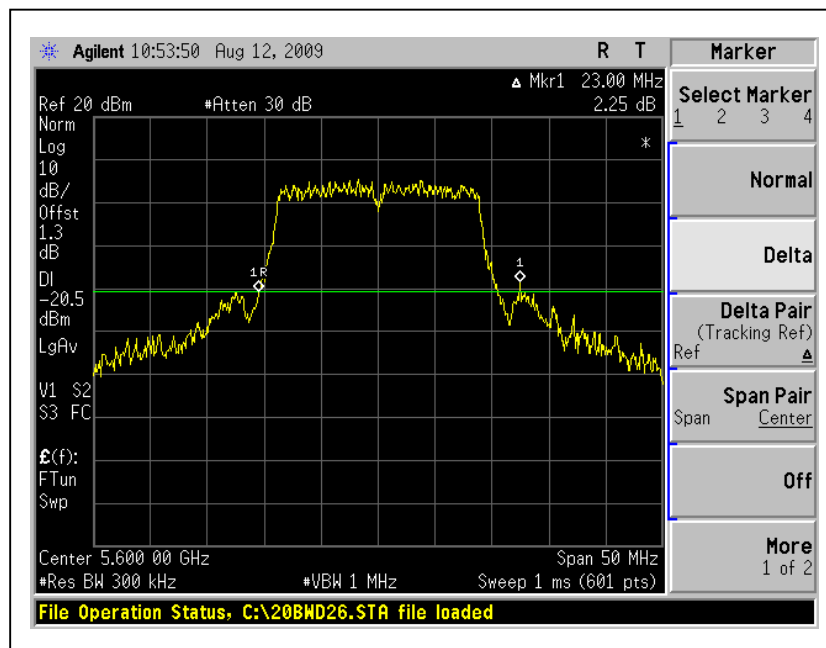
## CH64



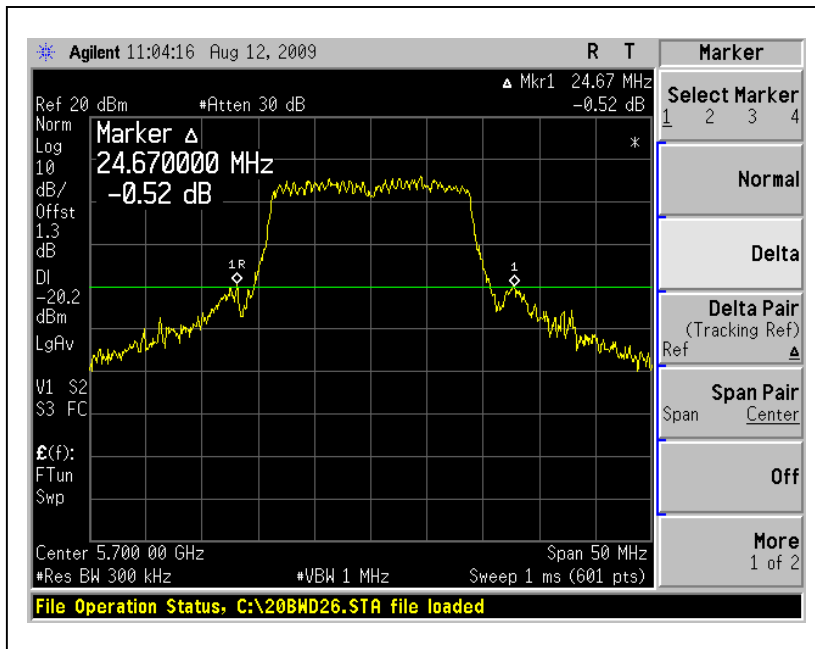
## CH100



## CH120



## CH140





A D T

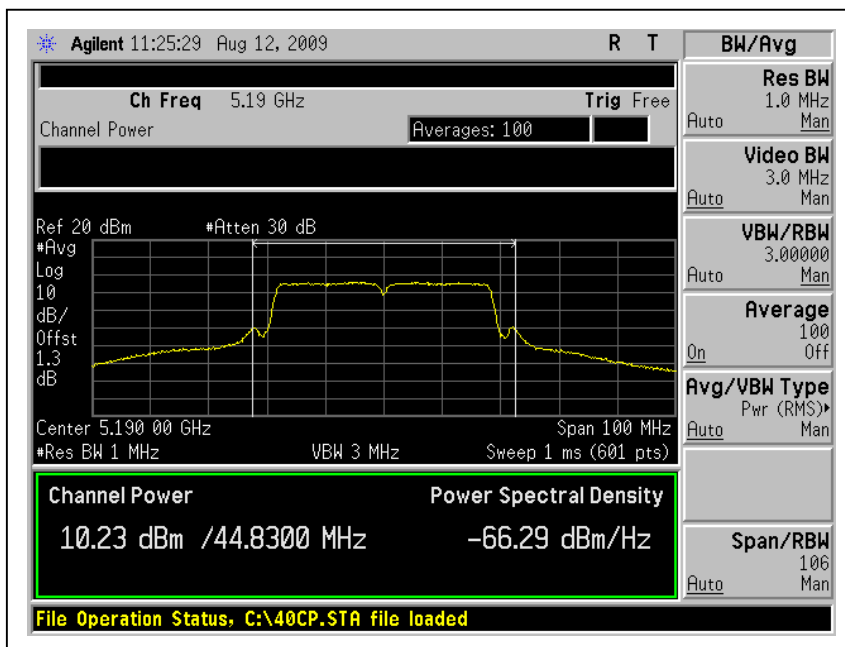
**DRAFT 802.11n (40MHz) OFDM MODULATION:**

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 27Mbps                 |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 25deg.C, 60%RH, 965hPa |
| <b>TESTED BY</b>            | Phoenix Huang |                                 |                        |

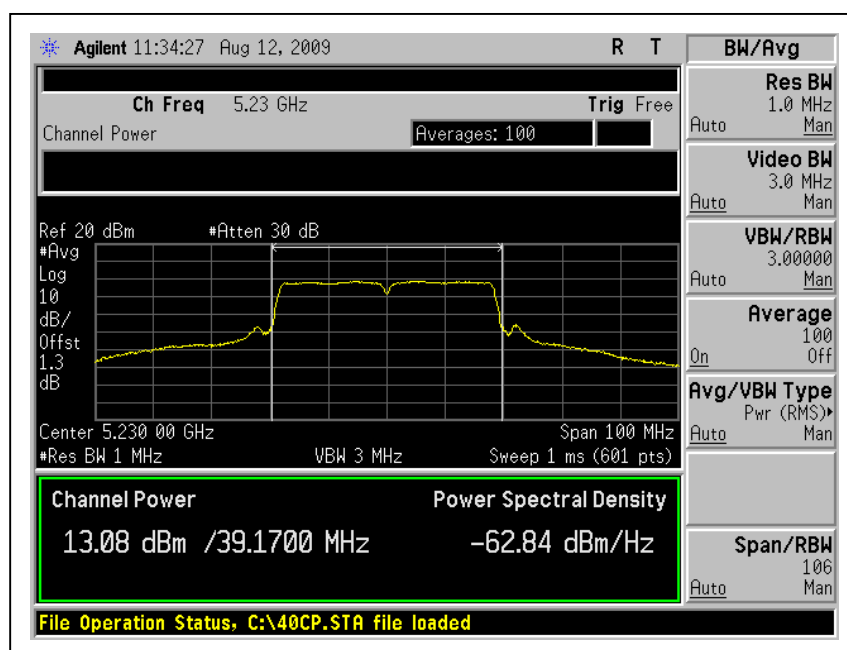
| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (dBm) |         | PEAK POWER OUTPUT (mW) |         | TOTAL PEAK POWER (dBm) | TOTAL PEAK POWER (mW) | PEAK POWER LIMIT (dBm) | 26dBc Occupied Bandwidth (MHz) | PASS/ FAIL |
|---------|-------------------------|-------------------------|---------|------------------------|---------|------------------------|-----------------------|------------------------|--------------------------------|------------|
|         |                         | Chain 0                 | Chain 1 | Chain 0                | Chain 1 |                        |                       |                        |                                |            |
| 38      | 5190                    | 10.23                   | 11.30   | 10.544                 | 13.490  | 13.81                  | 24.034                | 17.00                  | 44.83                          | PASS       |
| 46      | 5230                    | 13.08                   | 13.60   | 20.324                 | 22.909  | 16.36                  | 43.233                | 17.00                  | 39.17                          | PASS       |
| 54      | 5270                    | 12.58                   | 13.24   | 18.113                 | 21.086  | 15.93                  | 39.199                | 24.00                  | 44.67                          | PASS       |
| 62      | 5310                    | 11.66                   | 12.87   | 14.655                 | 19.364  | 15.32                  | 34.019                | 24.00                  | 42.17                          | PASS       |
| 102     | 5510                    | 10.28                   | 11.11   | 10.666                 | 12.912  | 13.73                  | 23.578                | 24.00                  | 44.33                          | PASS       |
| 118     | 5590                    | 13.64                   | 14.77   | 23.121                 | 29.992  | 17.25                  | 53.113                | 24.00                  | 44.33                          | PASS       |
| 134     | 5670                    | 12.73                   | 13.20   | 18.750                 | 20.893  | 15.98                  | 39.643                | 24.00                  | 44.33                          | PASS       |

**NOTE:** The 26dBc Occupied Bandwidth plot, please refer to the following pages.

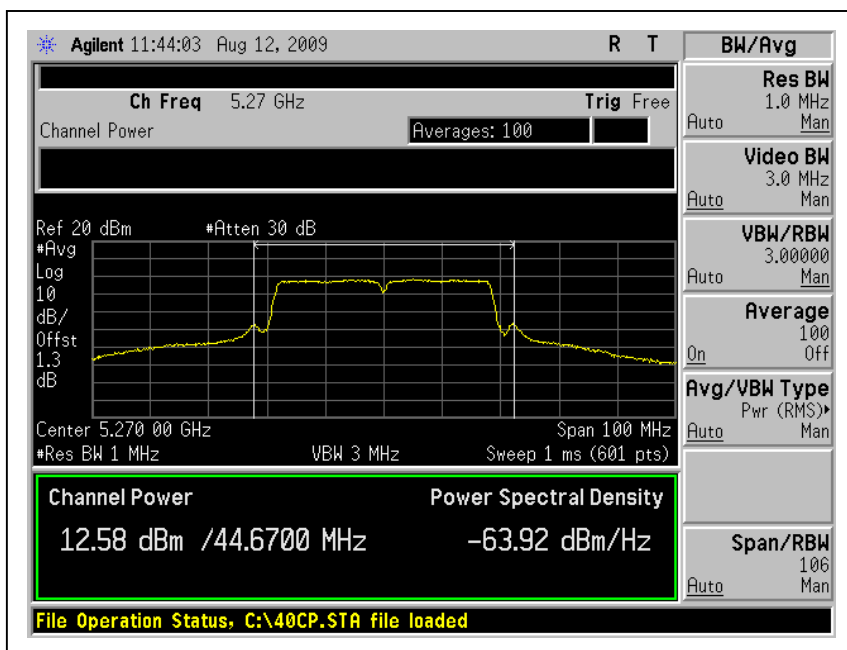
Peak Power Output:  
For Chain (0) :CH38



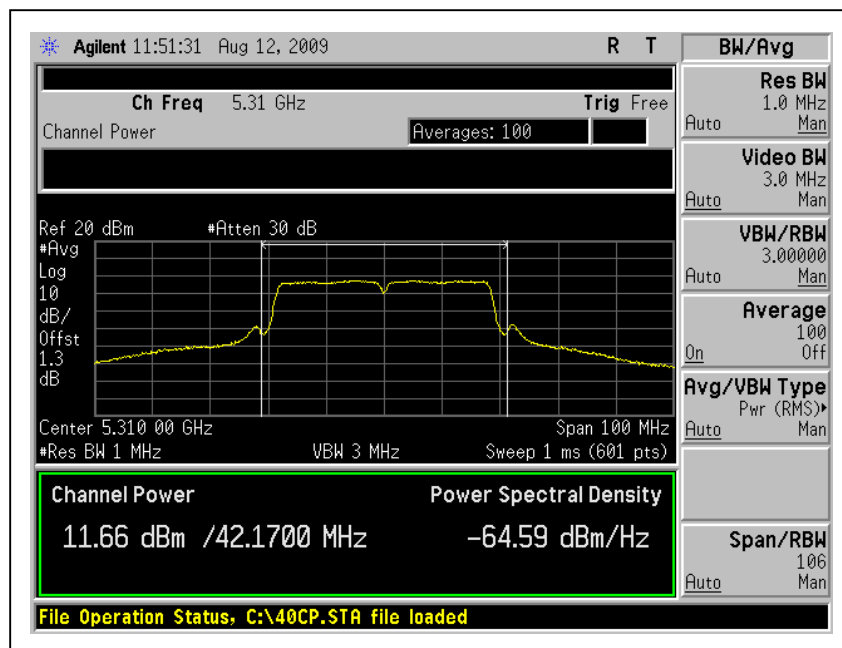
CH46



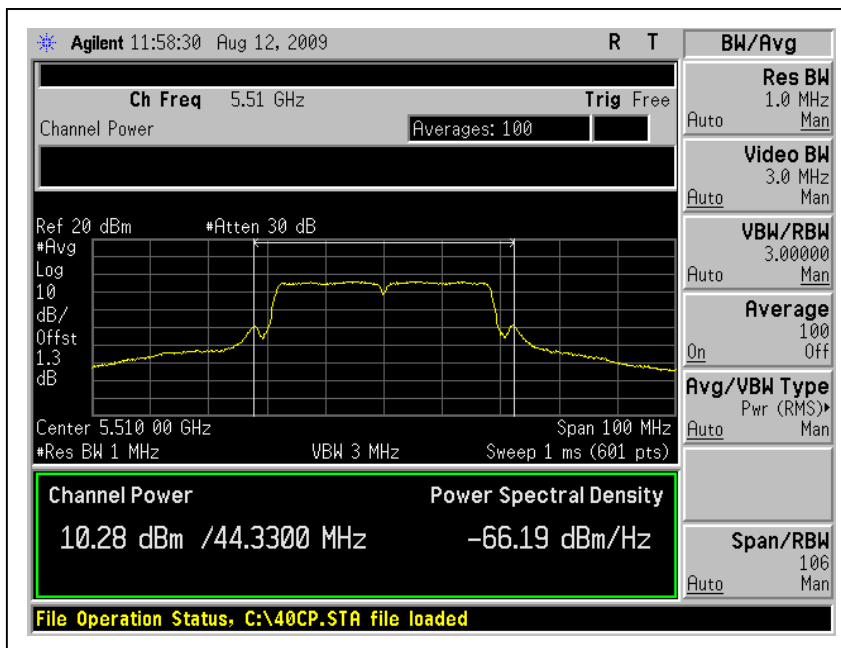
## CH54



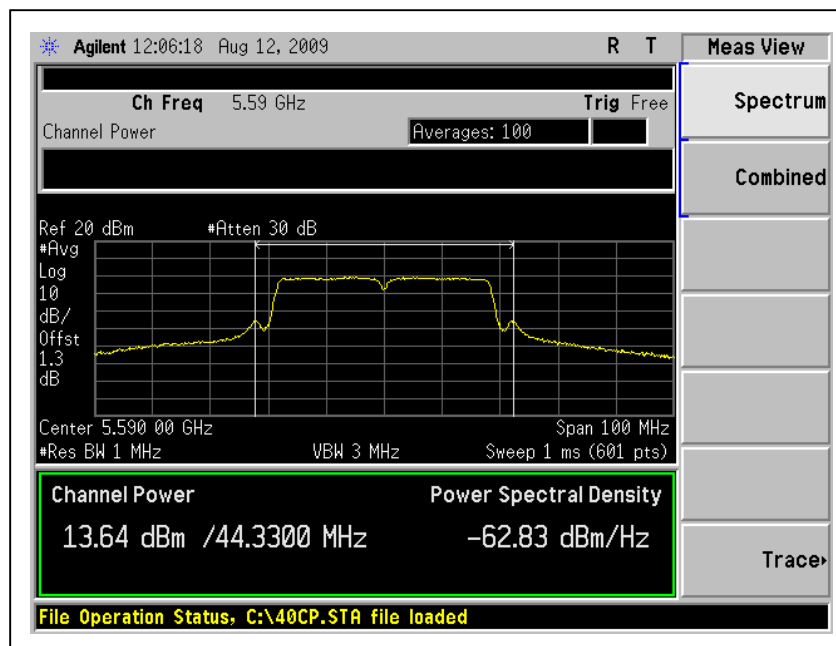
## CH62



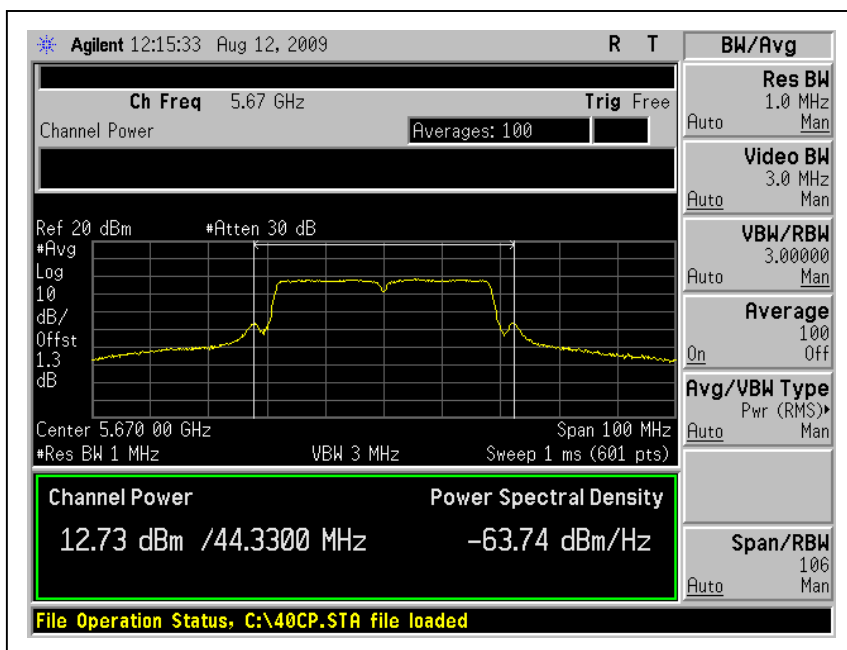
## CH102



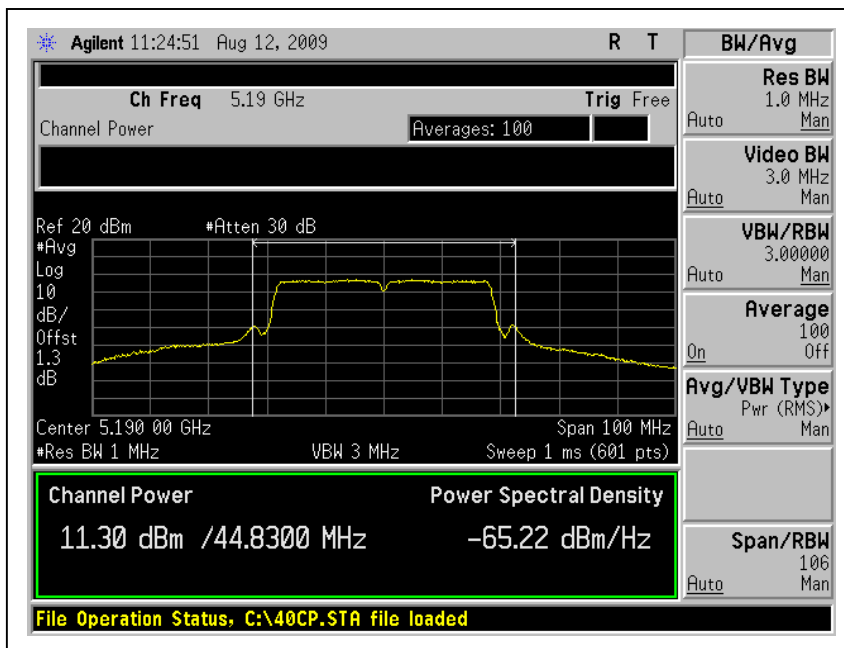
## CH118



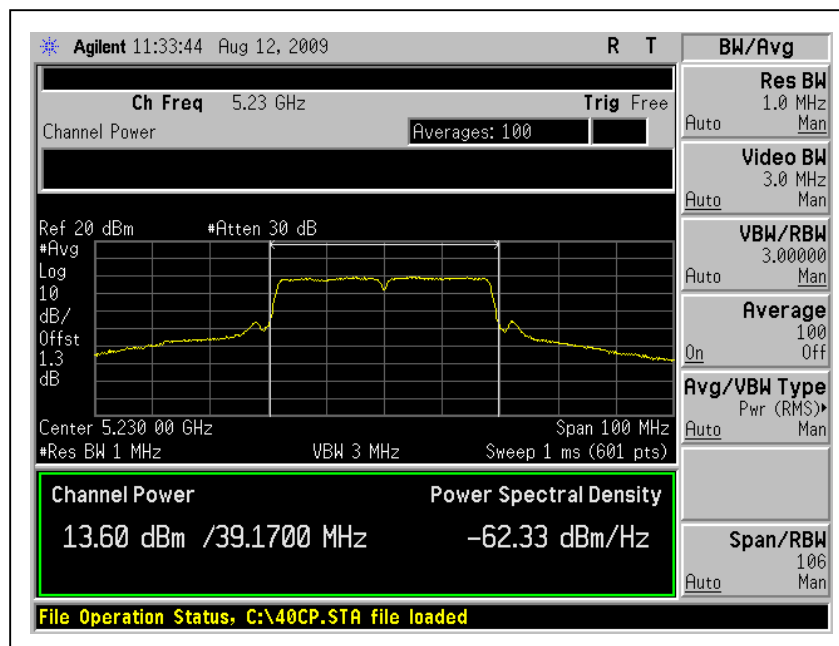
## CH134



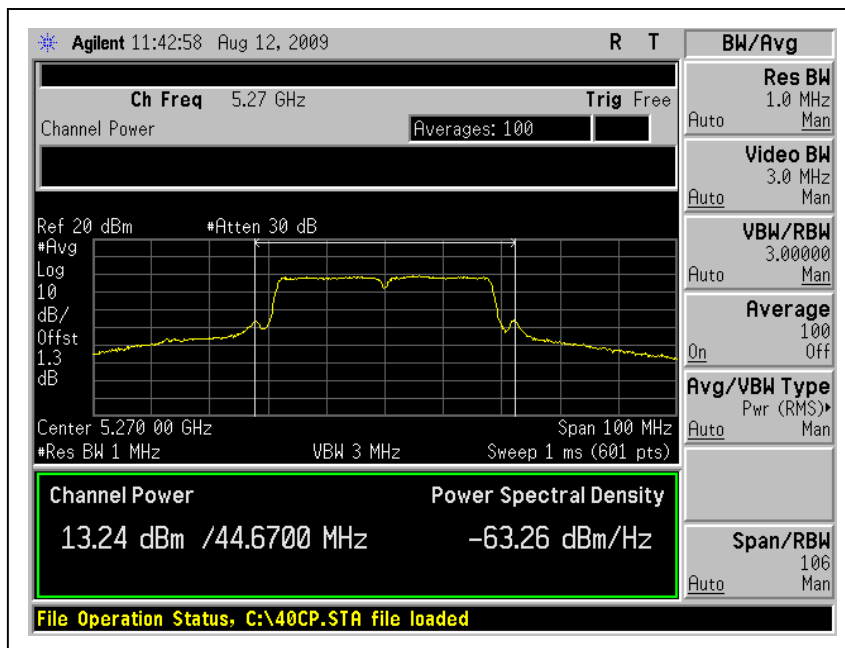
For Chain (1) :CH38



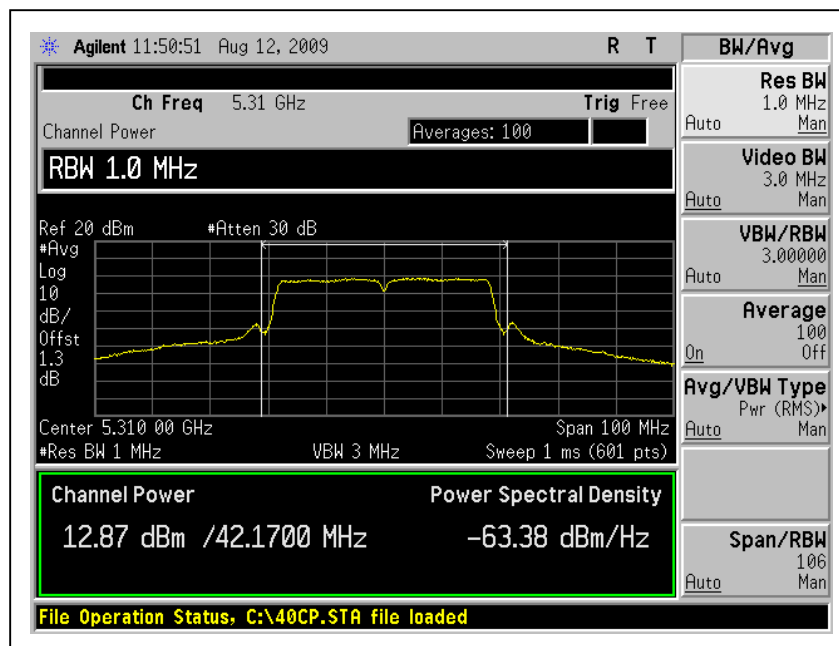
CH46



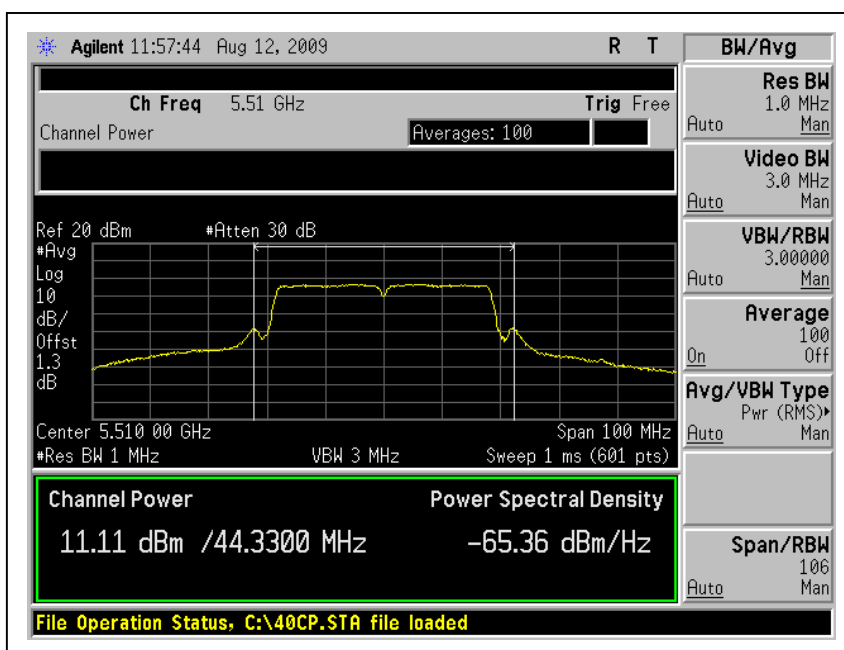
## CH54



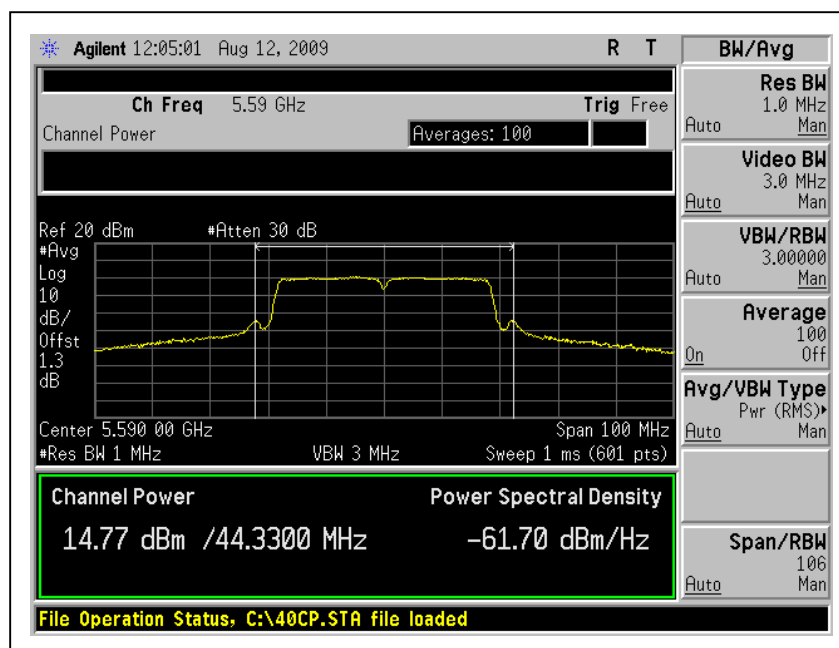
## CH62



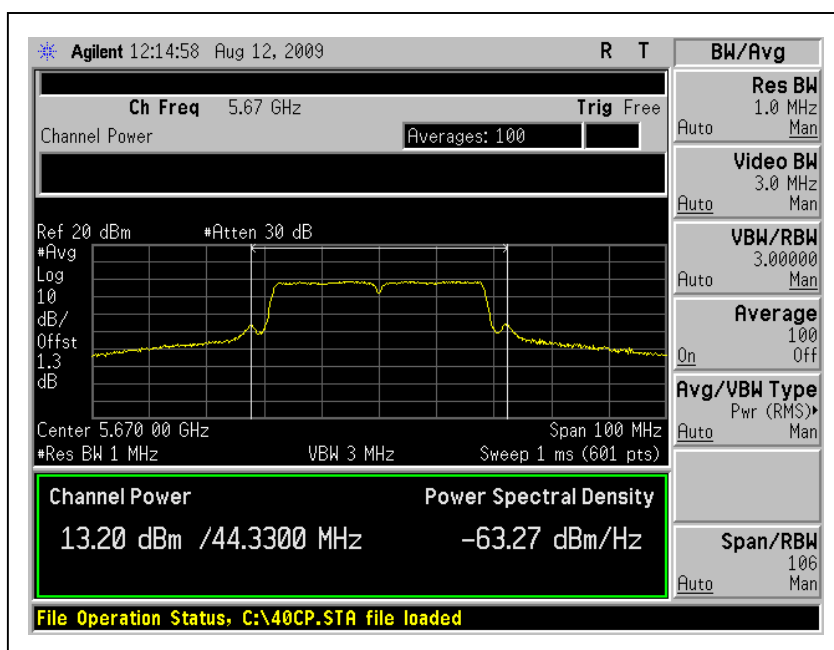
## CH102



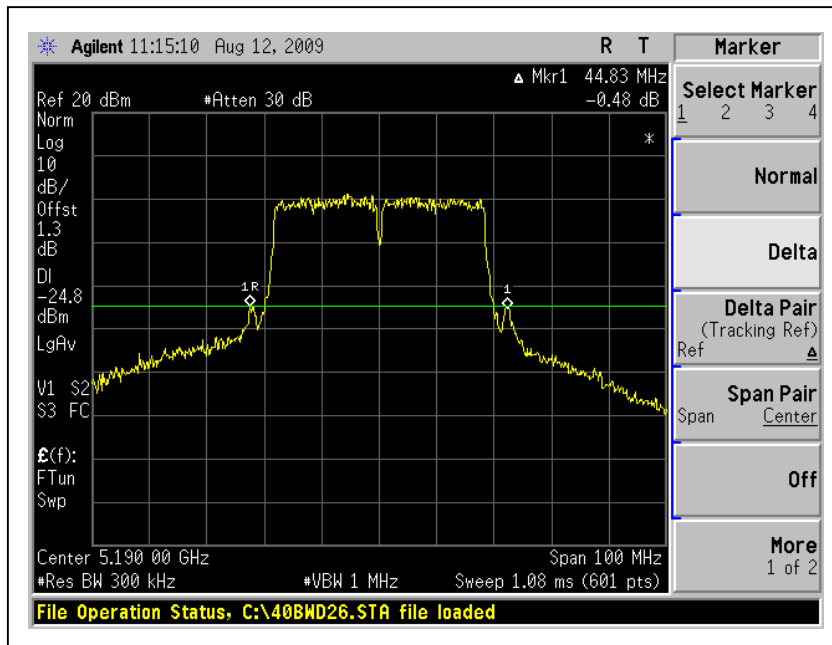
## CH118



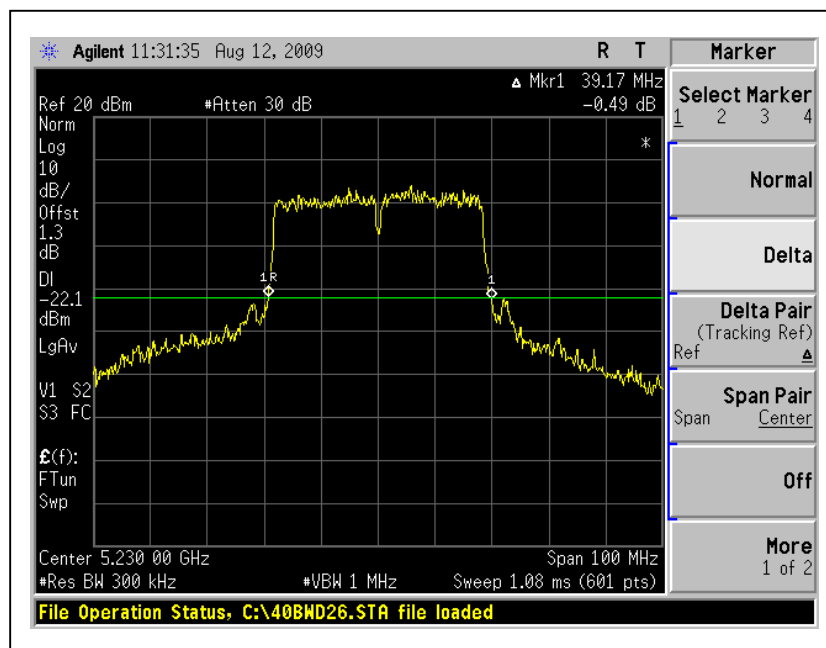
# CH134



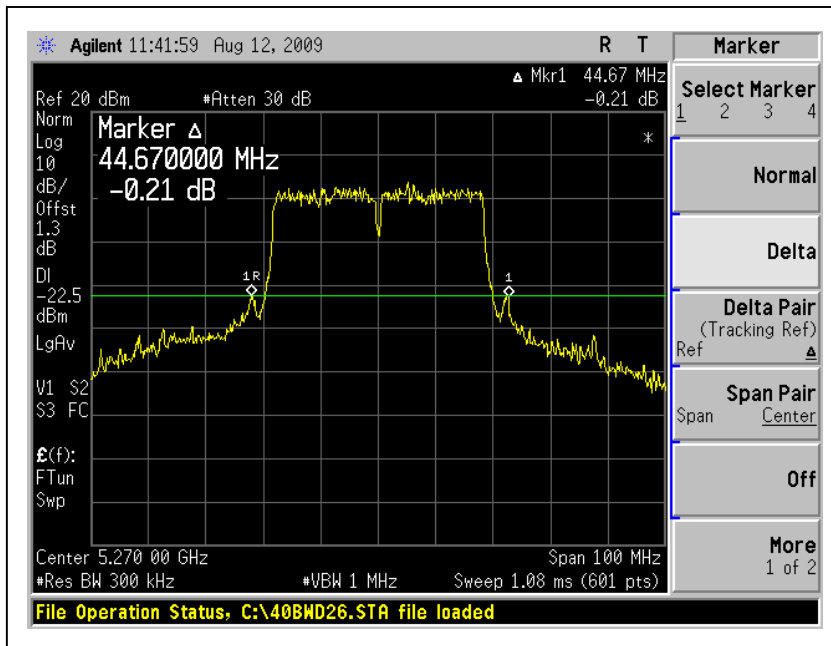
## 26dB Occupied Bandwidth: CH38



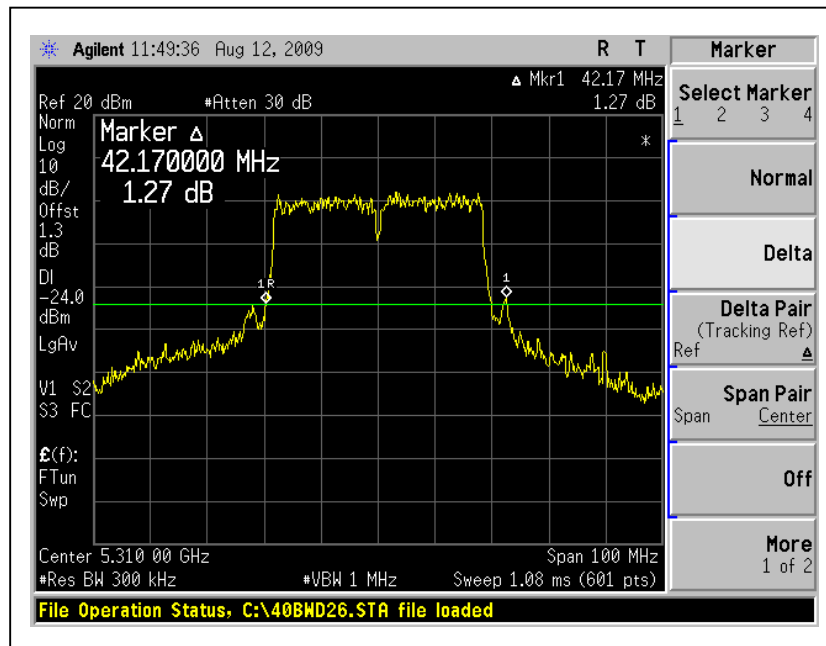
## CH46



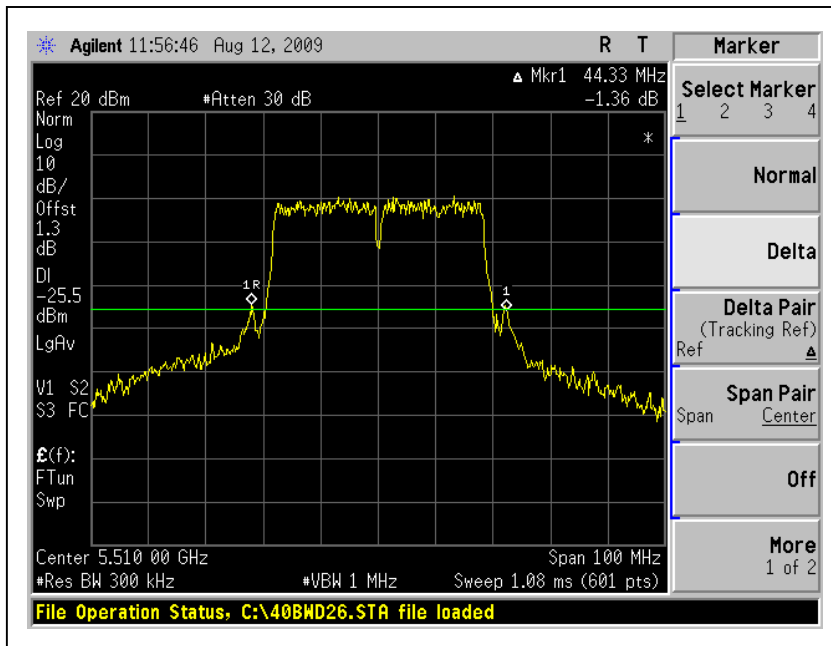
## CH54



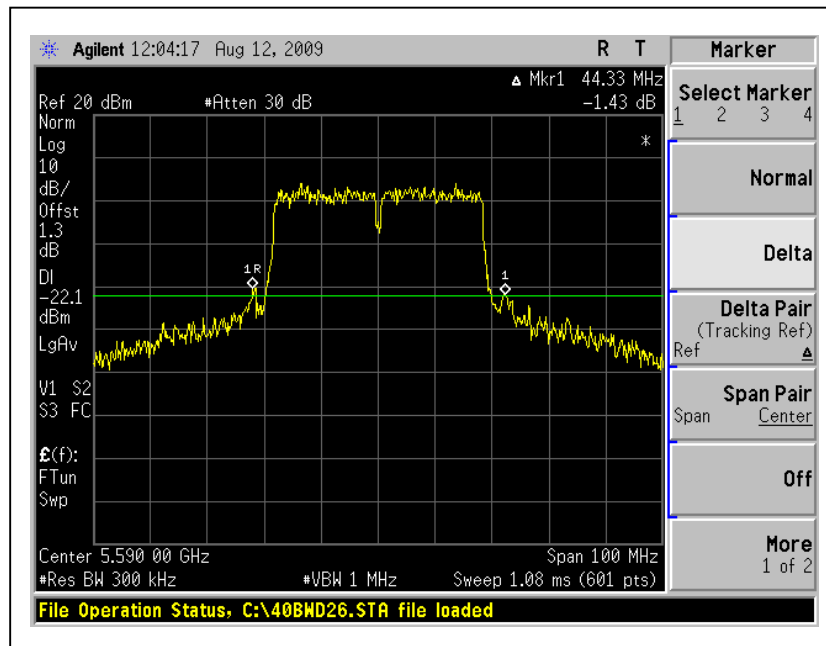
## CH62



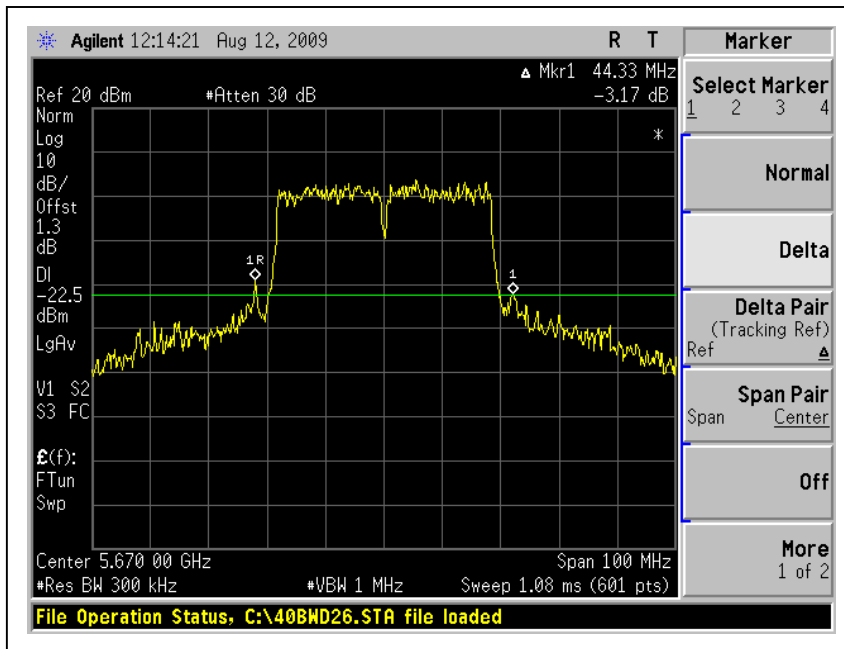
## CH102



## CH118



## CH134





A D T

## 4.4 PEAK POWER EXCURSION MEASUREMENT

### 4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

| Frequency Band    | Limit |
|-------------------|-------|
| 5.15 – 5.25 GHz   | 13dB  |
| 5.25 – 5.35 GHz   | 13dB  |
| 5.47 – 5.725GHz   | 13dB  |
| 5.725 – 5.825 GHz | 13dB  |

### 4.4.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------|-----------|------------|-----------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100037     | Aug. 03, 2009   | Aug. 02, 2010    |

**NOTE:**

- 1.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

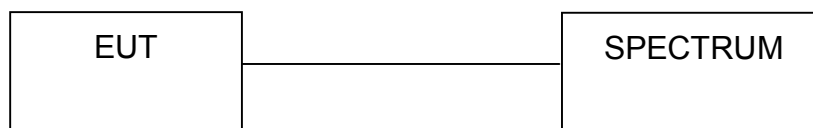
#### 4.4.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set the spectrum bandwidth span to view the entire spectrum.
3. Using peak detector and Max-hold function for Trace 1 (RB=1MHz, VB=3MHz) and 2 (RB=1MHz, VB=300KHz).
4. The largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

#### 4.4.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.4.5 TEST SETUP



#### 4.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

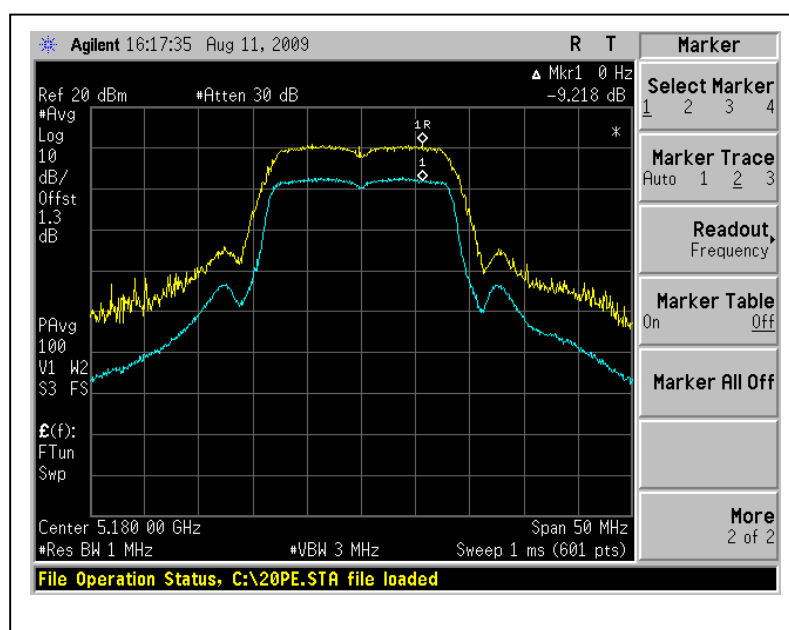
#### 4.4.7 TEST RESULTS

##### 802.11a OFDM modulation

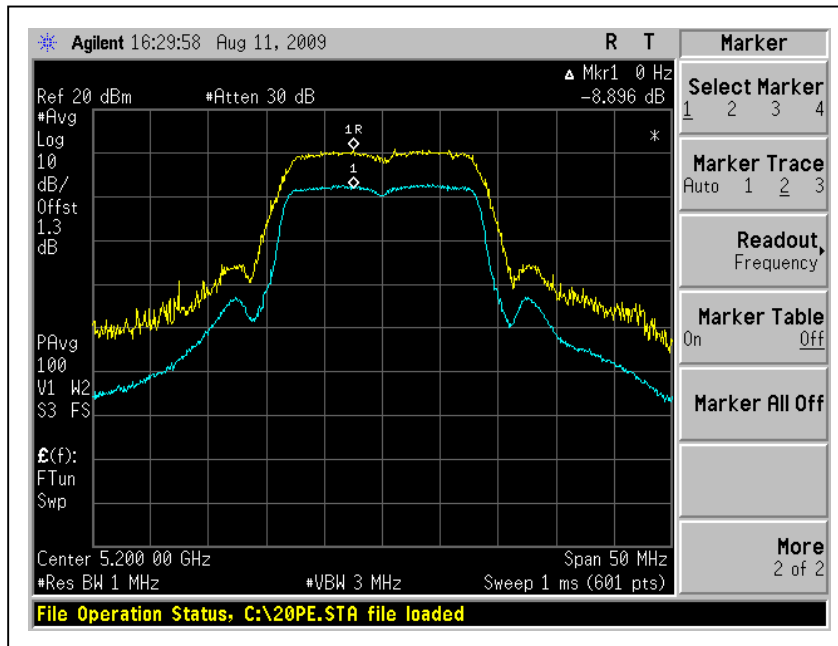
|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6Mbps                  |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 25deg.C, 60%RH, 965hPa |
| <b>TESTED BY</b>            | Phoenix Huang |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER EXCURSION (dB) | PEAK to AVERAGE EXCURSION LIMIT (dB) | PASS/FAIL |
|---------|-------------------------|---------------------------|--------------------------------------|-----------|
| 36      | 5180                    | 9.22                      | 13                                   | PASS      |
| 40      | 5200                    | 8.90                      | 13                                   | PASS      |
| 48      | 5240                    | 8.06                      | 13                                   | PASS      |
| 52      | 5260                    | 8.76                      | 13                                   | PASS      |
| 60      | 5300                    | 8.75                      | 13                                   | PASS      |
| 64      | 5320                    | 9.02                      | 13                                   | PASS      |
| 100     | 5500                    | 8.70                      | 13                                   | PASS      |
| 120     | 5600                    | 9.37                      | 13                                   | PASS      |
| 140     | 5700                    | 9.26                      | 13                                   | PASS      |

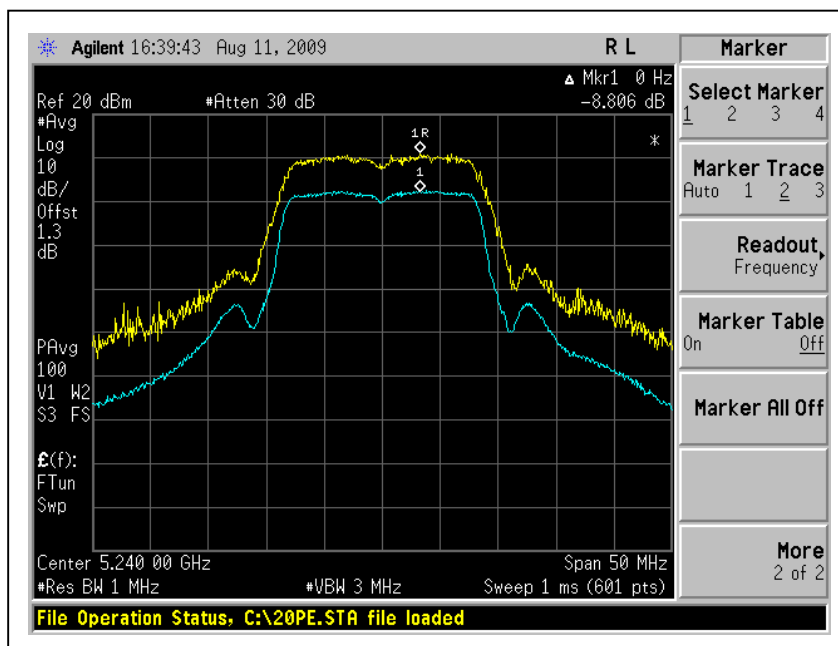
CH36



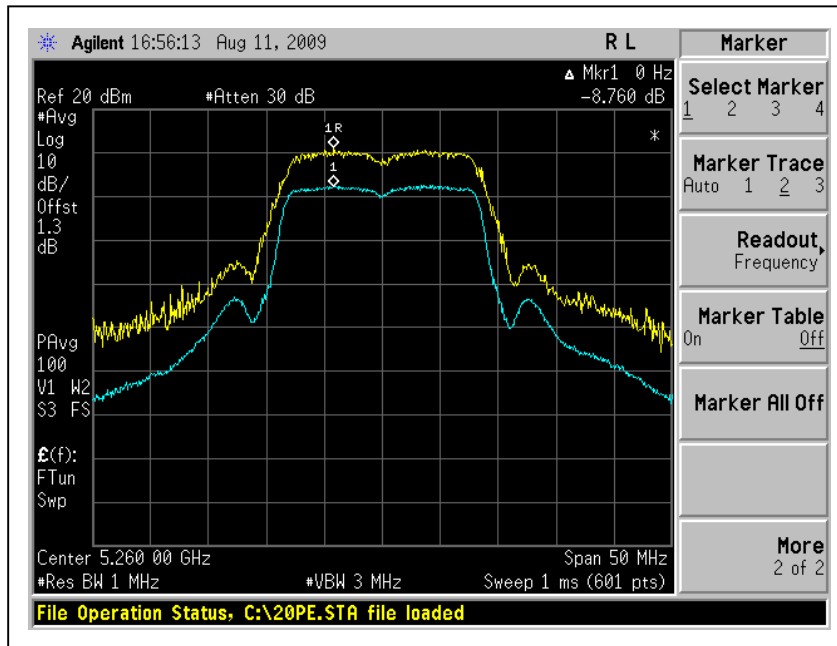
CH40



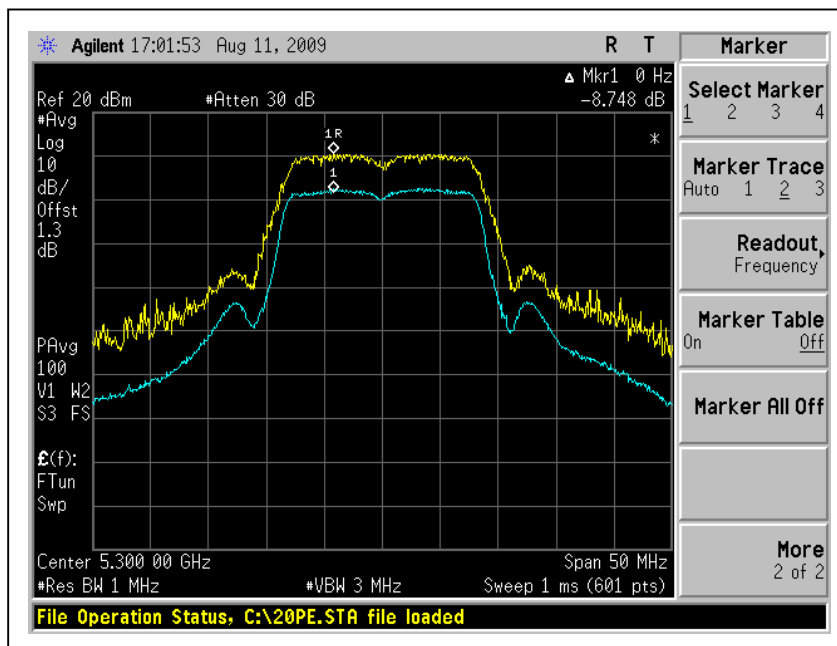
CH48



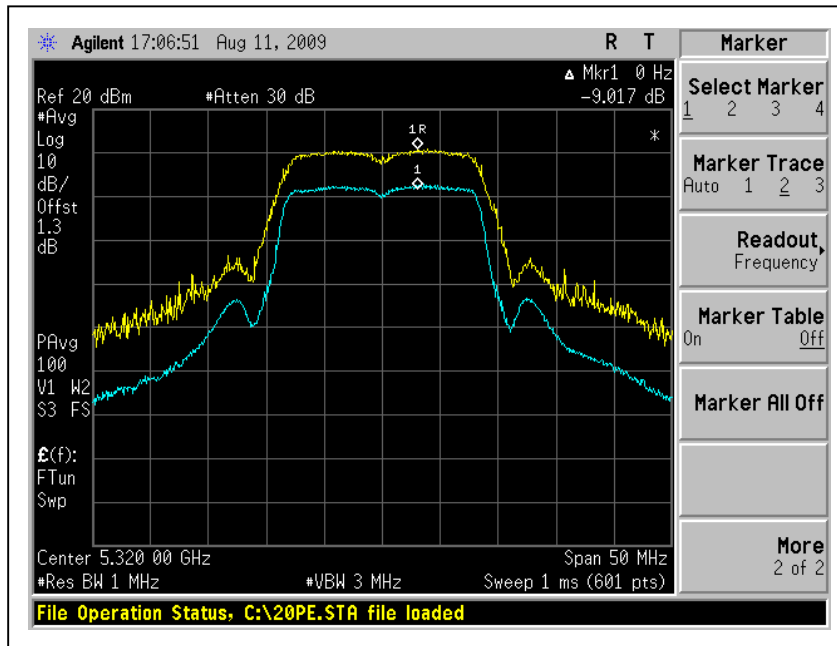
## CH52



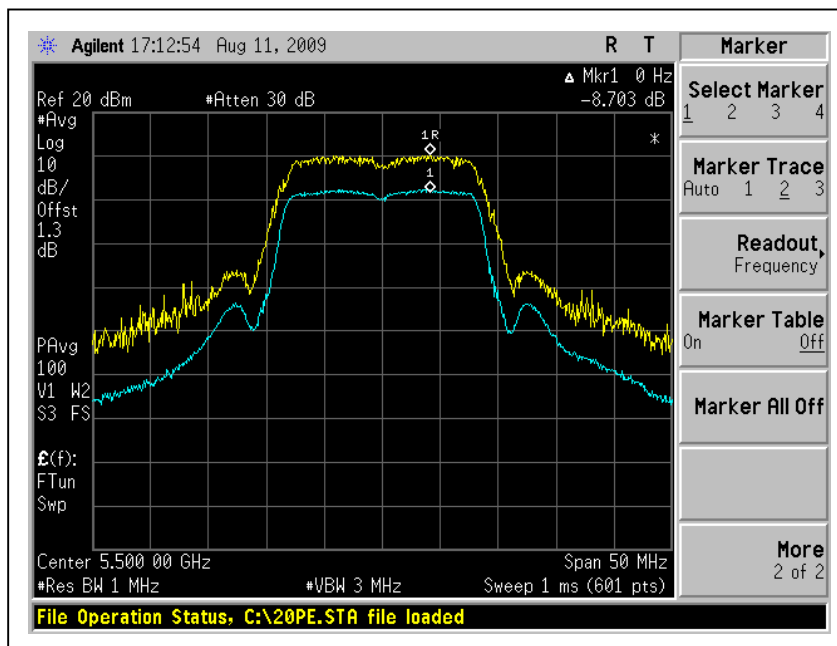
## CH60



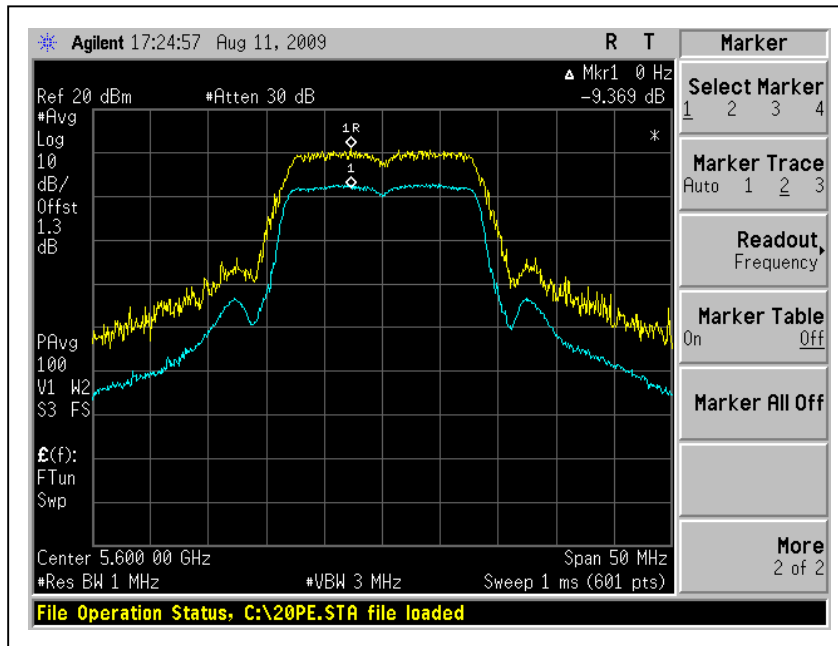
CH64



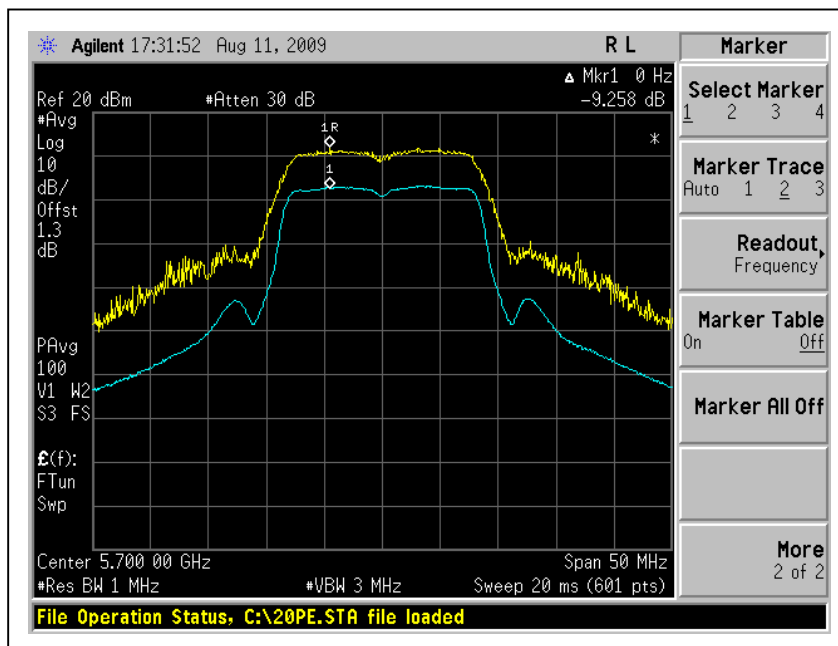
CH100



## CH120



## CH140





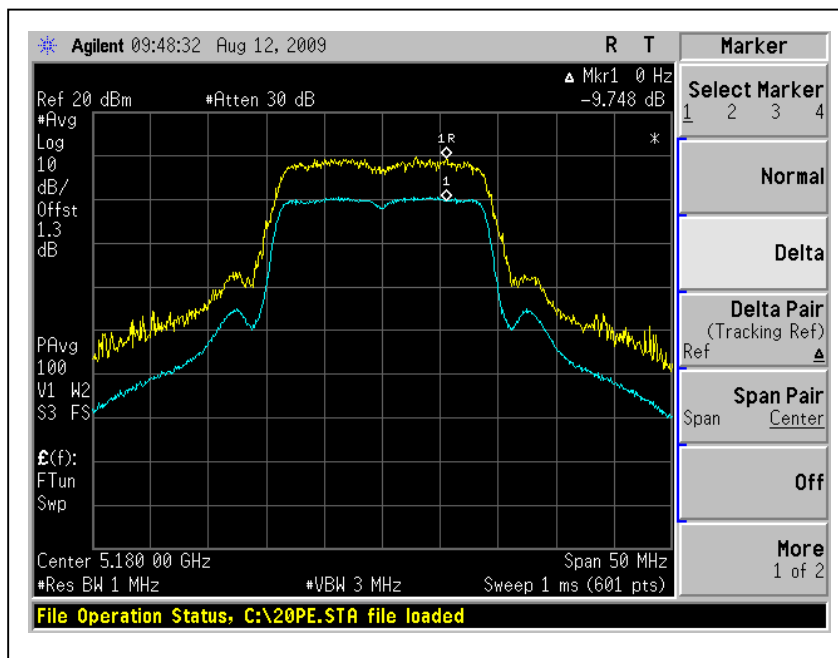
A D T

**DRAFT 802.11n (20MHz) OFDM MODULATION:**

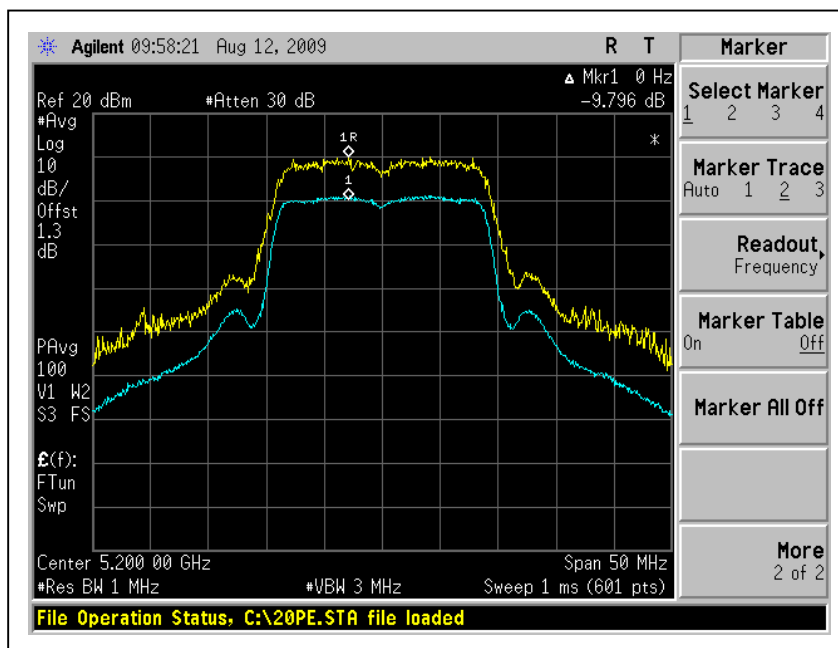
|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 13Mbps                 |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 25deg.C, 60%RH, 965hPa |
| <b>TESTED BY</b>            | Phoenix Huang |                                 |                        |

| <b>CHANNEL</b> | <b>CHANNEL FREQUENCY (MHz)</b> | <b>PEAK POWER EXCURSION (dB)</b> | <b>PEAK to AVERAGE EXCURSION LIMIT (dB)</b> | <b>PASS/FAIL</b> |
|----------------|--------------------------------|----------------------------------|---------------------------------------------|------------------|
| 36             | 5180                           | 9.75                             | 13                                          | PASS             |
| 40             | 5200                           | 9.80                             | 13                                          | PASS             |
| 48             | 5240                           | 9.23                             | 13                                          | PASS             |
| 52             | 5260                           | 9.78                             | 13                                          | PASS             |
| 60             | 5300                           | 10.68                            | 13                                          | PASS             |
| 64             | 5320                           | 9.19                             | 13                                          | PASS             |
| 100            | 5500                           | 9.53                             | 13                                          | PASS             |
| 120            | 5600                           | 9.34                             | 13                                          | PASS             |
| 140            | 5700                           | 9.43                             | 13                                          | PASS             |

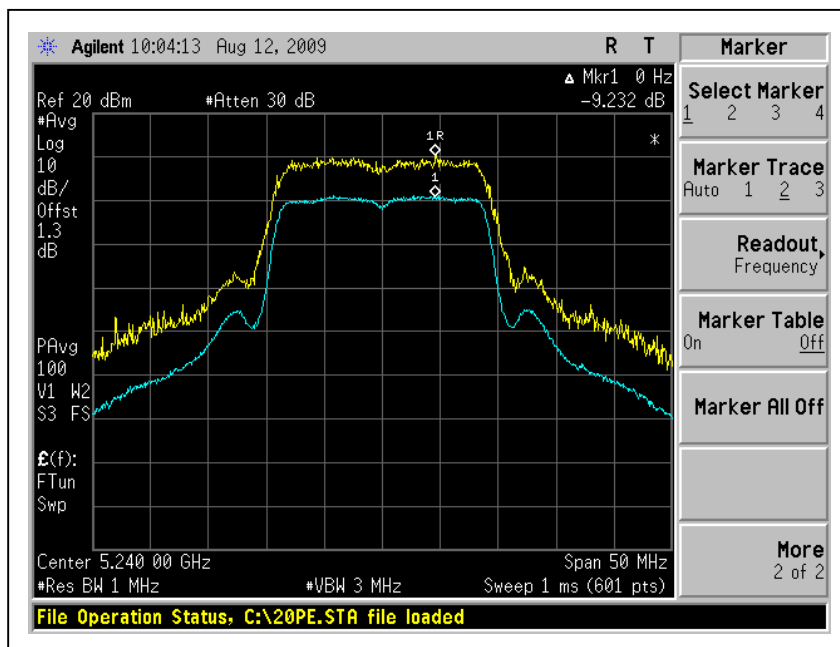
## CH36



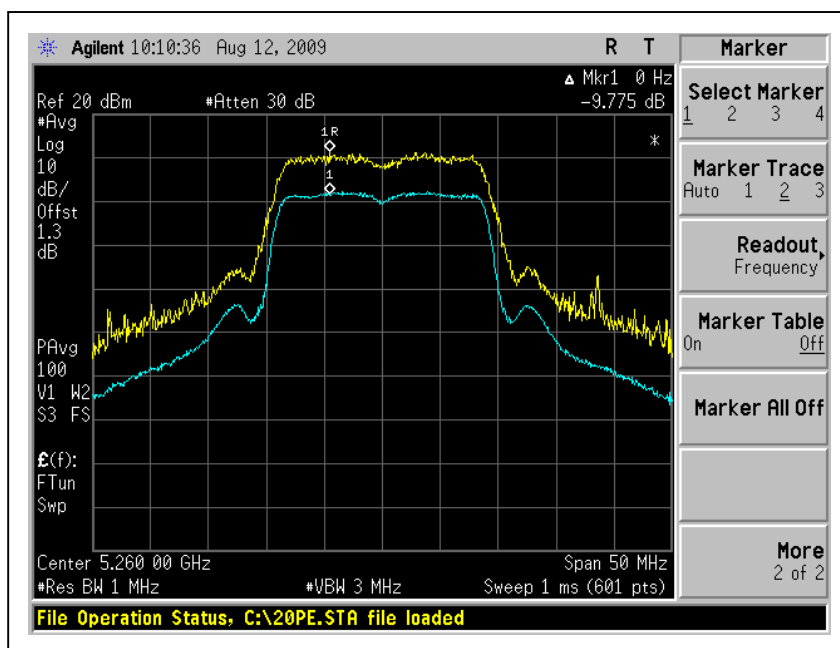
## CH40



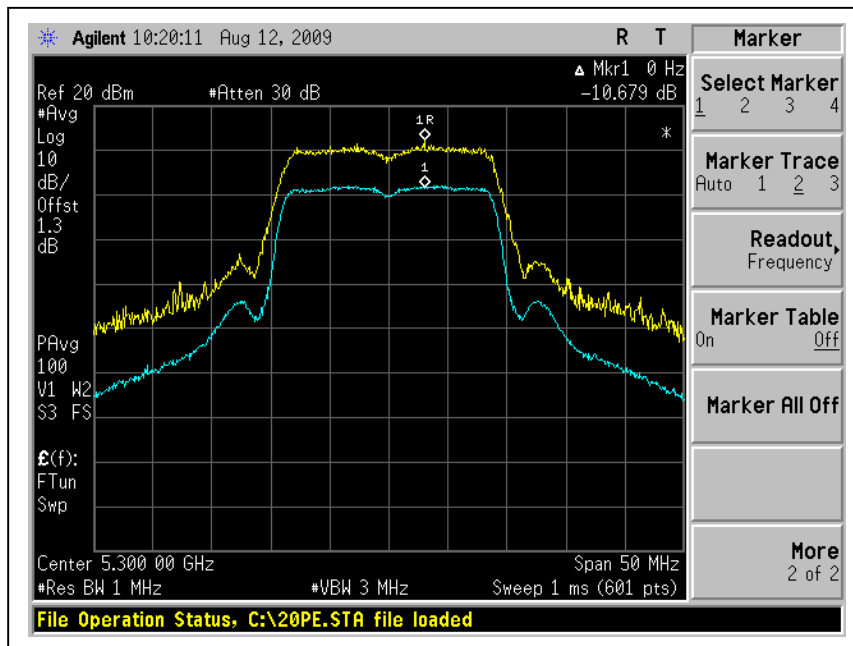
## CH48



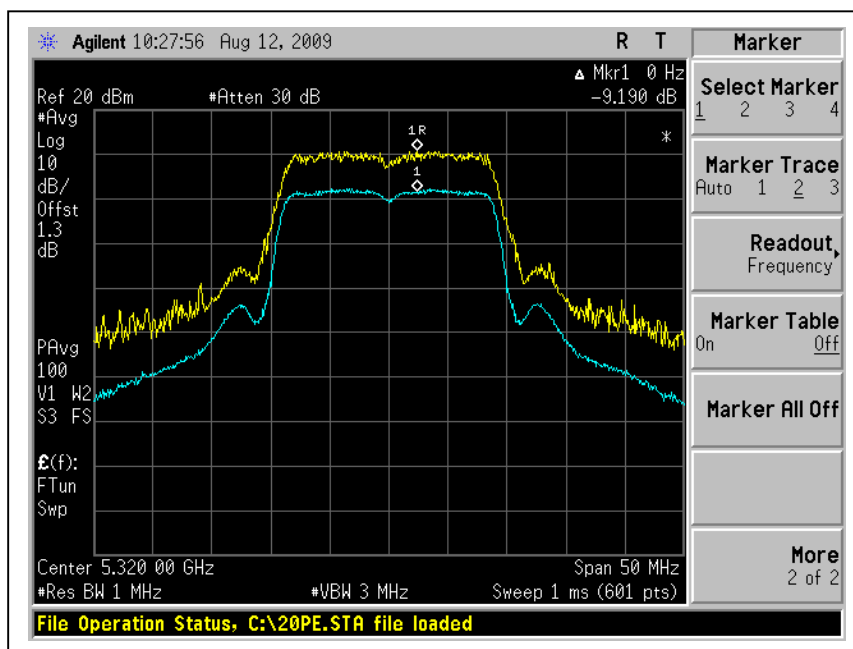
## CH52



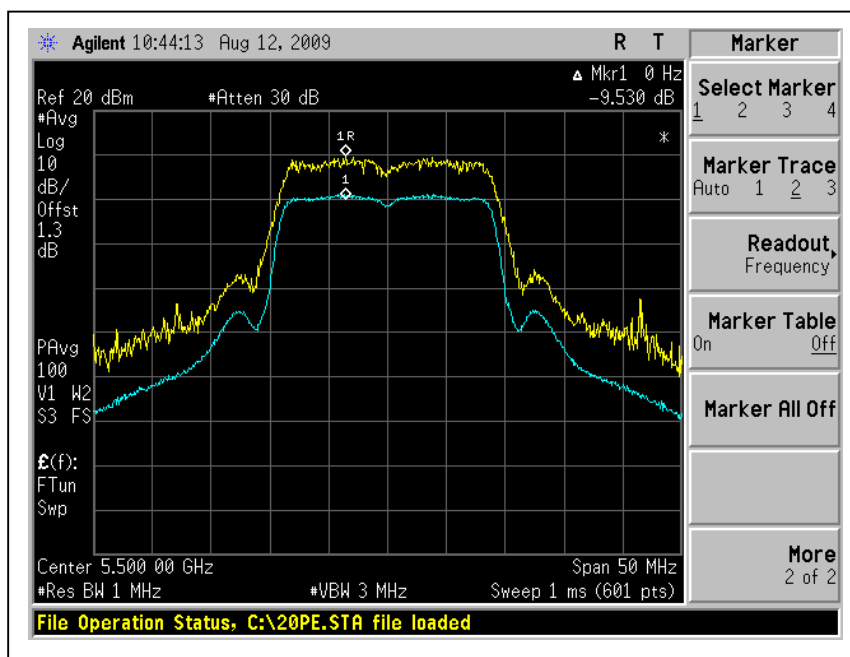
CH60



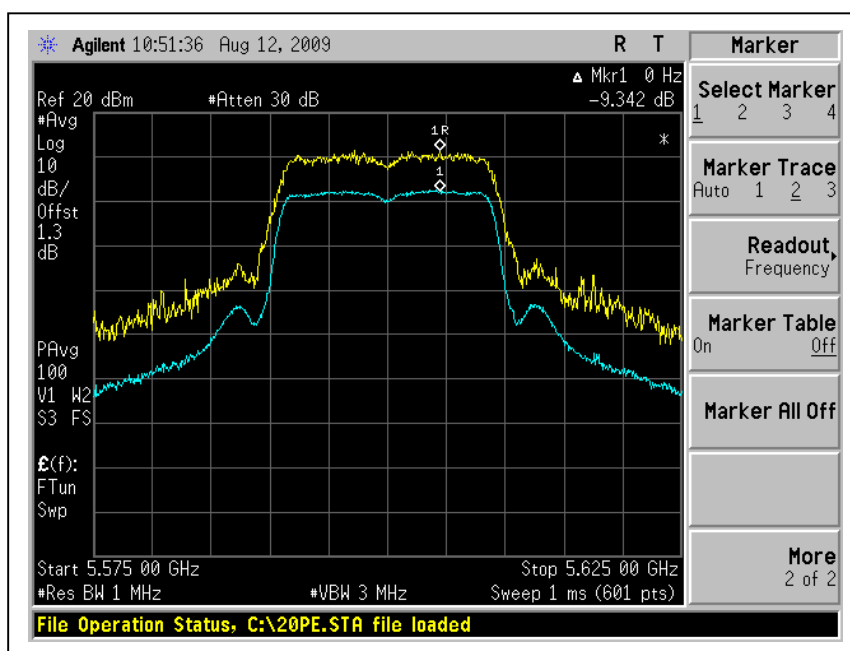
CH64



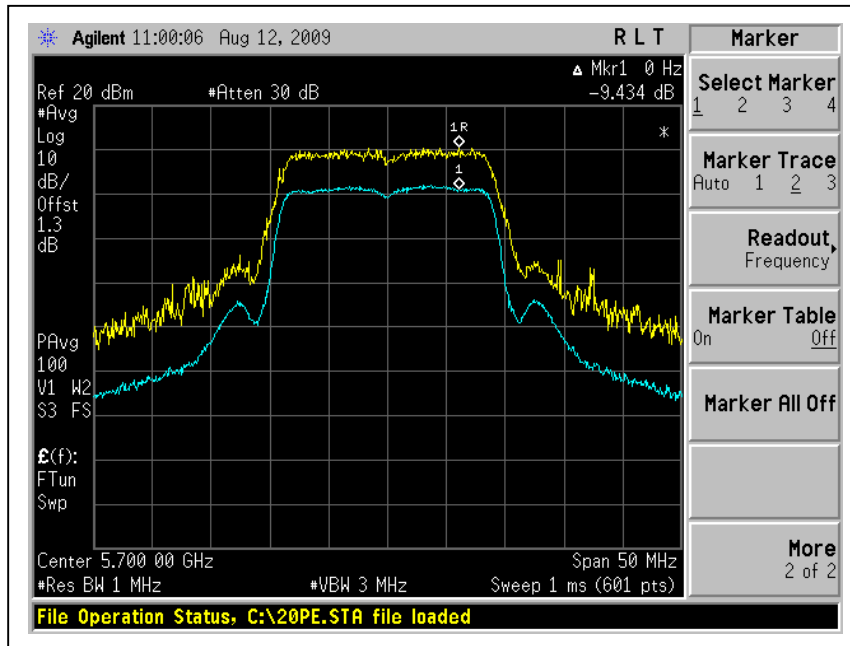
## CH100



## CH120



CH140





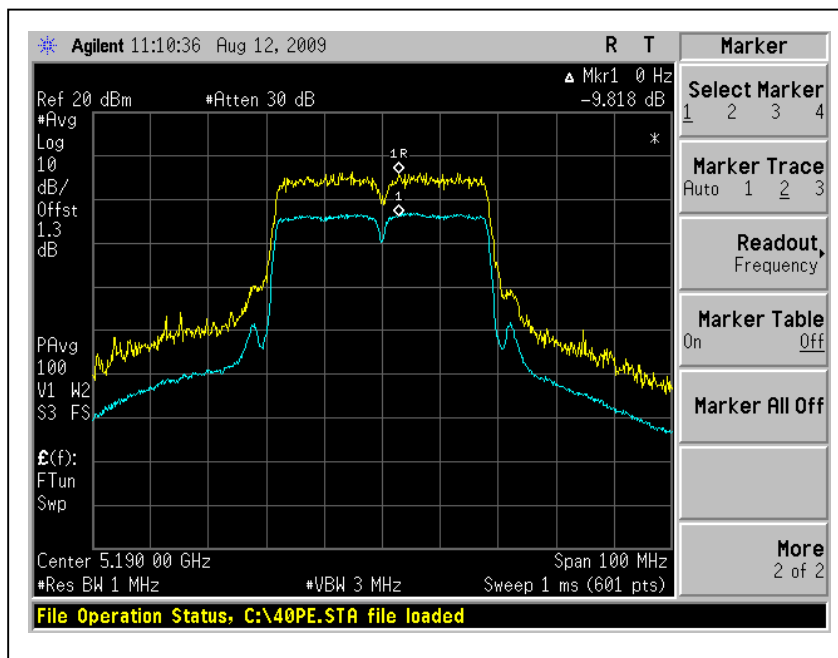
A D T

**DRAFT 802.11n (40MHz) OFDM MODULATION:**

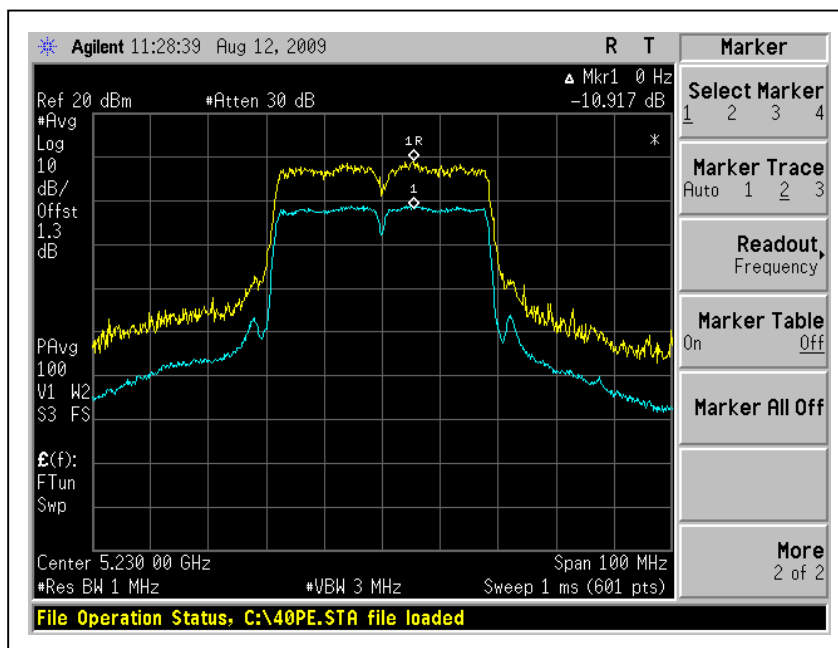
|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 27Mbps                 |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 25deg.C, 60%RH, 965hPa |
| <b>TESTED BY</b>            | Phoenix Huang |                                 |                        |

| <b>CHANNEL</b> | <b>CHANNEL FREQUENCY (MHz)</b> | <b>PEAK POWER EXCURSION (dB)</b> | <b>PEAK to AVERAGE EXCURSION LIMIT (dB)</b> | <b>PASS/FAIL</b> |
|----------------|--------------------------------|----------------------------------|---------------------------------------------|------------------|
| 38             | 5190                           | 9.82                             | 13                                          | PASS             |
| 46             | 5230                           | 10.92                            | 13                                          | PASS             |
| 54             | 5270                           | 10.21                            | 13                                          | PASS             |
| 62             | 5310                           | 10.75                            | 13                                          | PASS             |
| 102            | 5510                           | 10.24                            | 13                                          | PASS             |
| 118            | 5590                           | 10.94                            | 13                                          | PASS             |
| 134            | 5670                           | 9.44                             | 13                                          | PASS             |

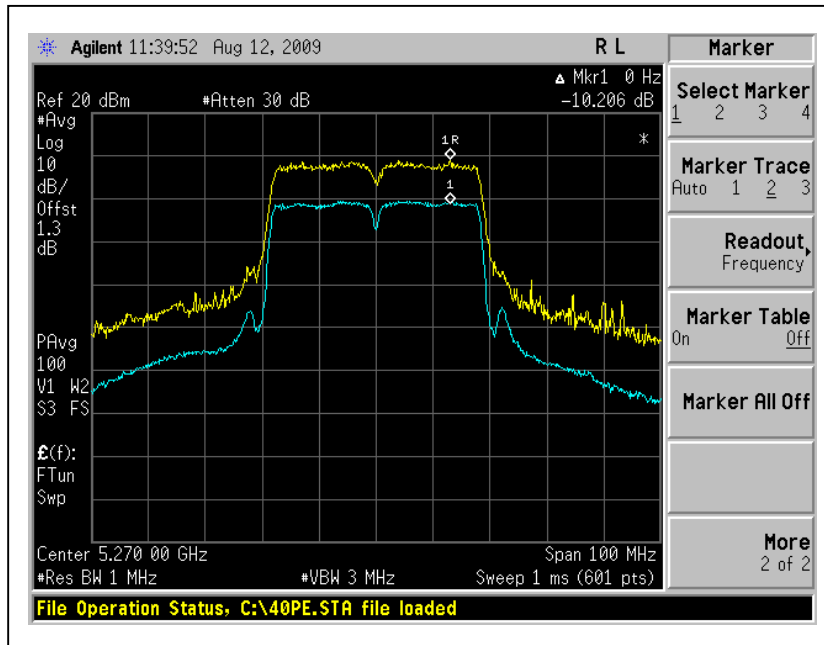
## CH38



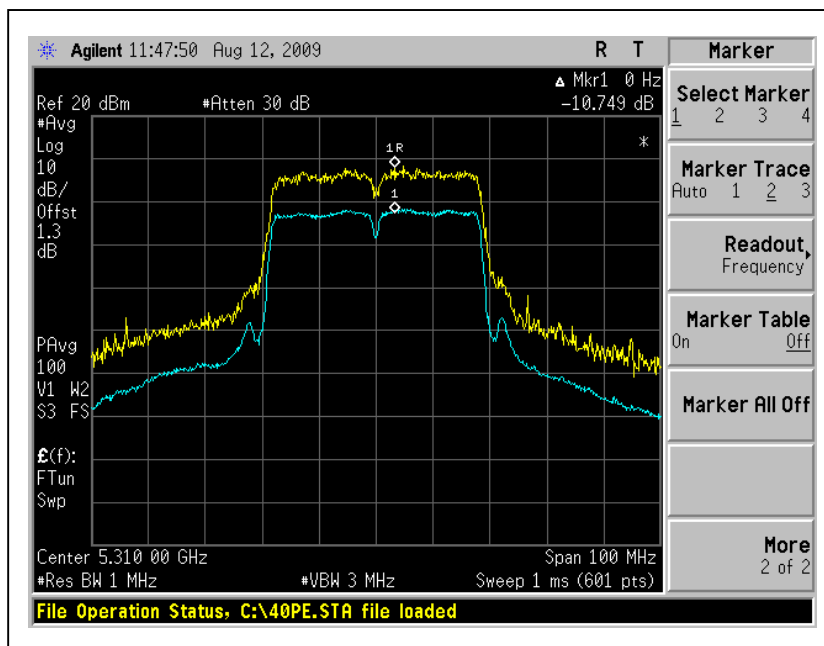
## CH46



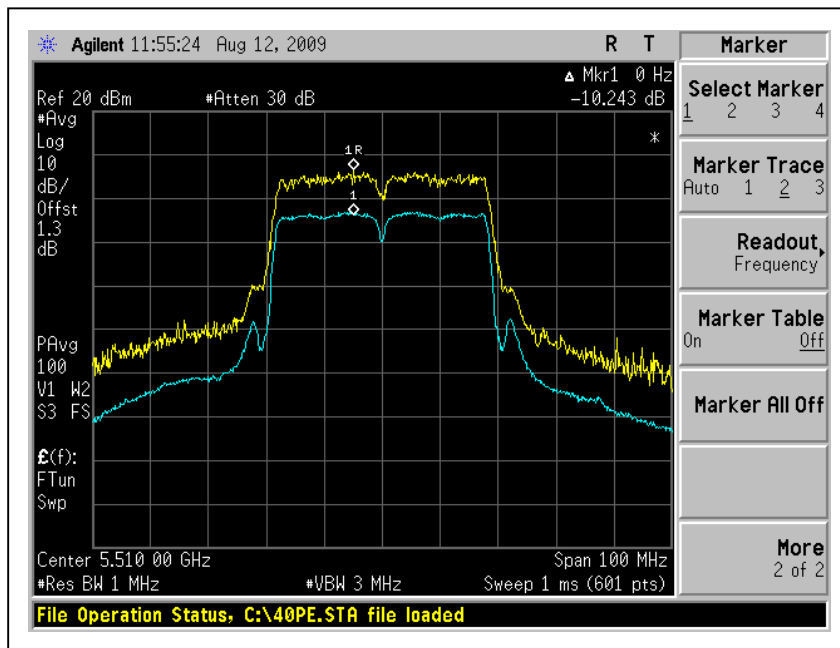
## CH54



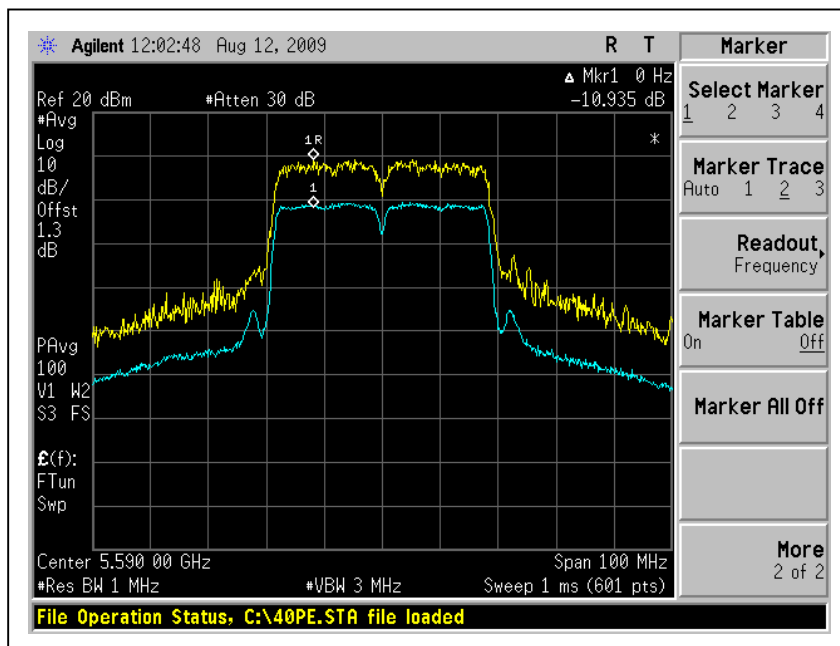
## CH62



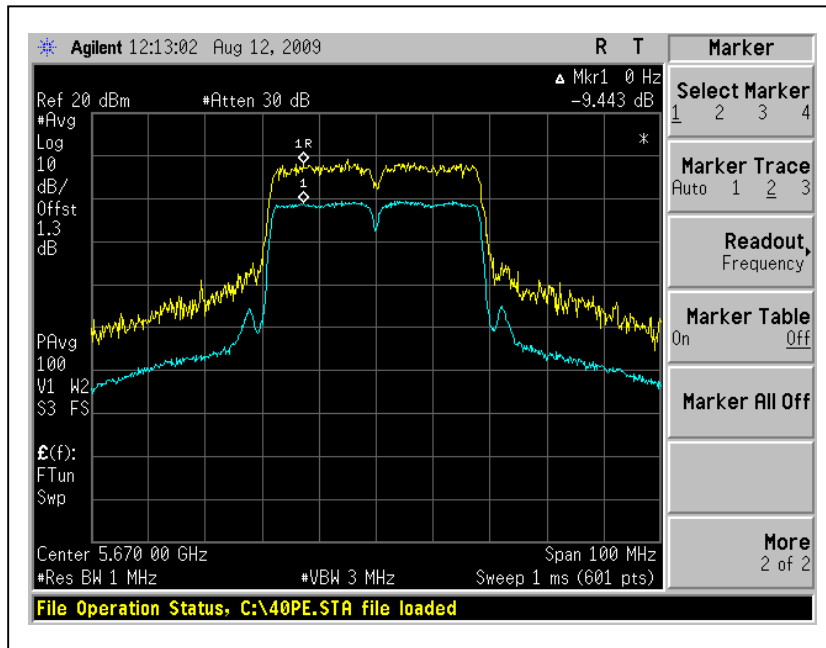
## CH102



## CH118



# CH134



## 4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

### 4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

| Frequency Band   | Limit |
|------------------|-------|
| 5.15 ~ 5.25GHz   | 4dBm  |
| 5.25 ~ 5.35GHz   | 11dBm |
| 5.47 ~ 5.725GHz  | 11dBm |
| 5.725 ~ 5.825GHz | 17dBm |

### 4.5.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------|-----------|------------|-----------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100037     | Aug. 03, 2009   | Aug. 02, 2010    |

#### NOTE:

- 1.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.5.3 TEST PROCEDURES

1. The transmitter output was connected to the spectrum analyzer.
2. Set RBW=1MHz, VBW=3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

#### 4.5.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.5.5 TEST SETUP



#### 4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6



A D T

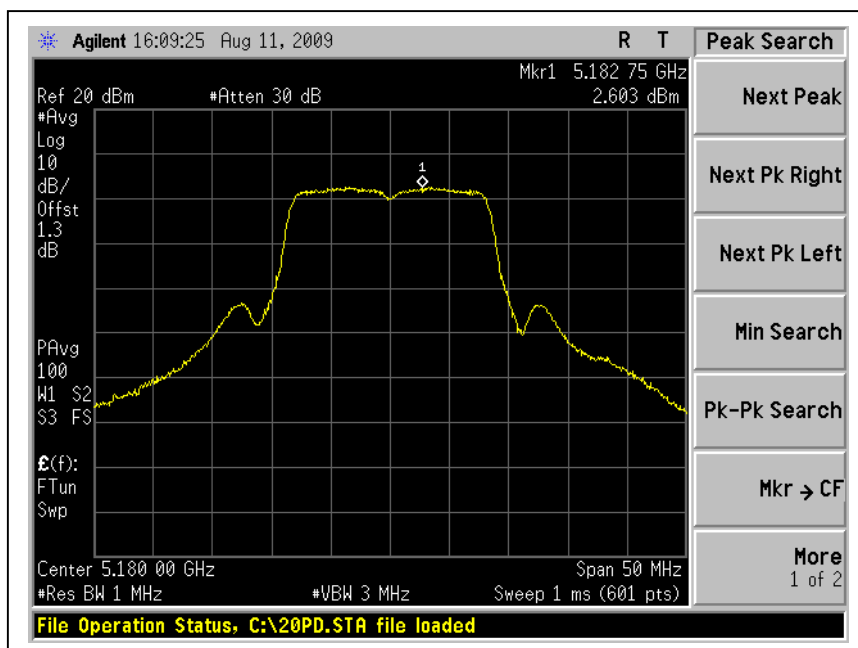
#### 4.5.7 TEST RESULTS

##### 802.11a OFDM modulation

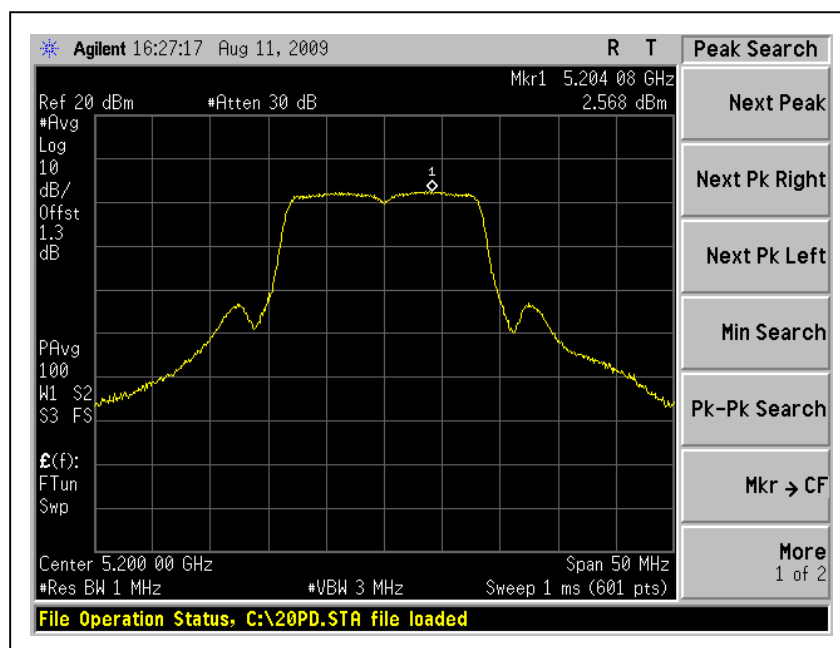
|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6Mbps                  |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 25deg.C, 60%RH, 965hPa |
| <b>TESTED BY</b>            | Phoenix Huang |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 1MHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---------|--------------------------|---------------------------------|---------------------|-----------|
| 36      | 5180                     | 2.60                            | 4                   | PASS      |
| 40      | 5200                     | 2.57                            | 4                   | PASS      |
| 48      | 5240                     | 2.90                            | 4                   | PASS      |
| 52      | 5260                     | 2.59                            | 11                  | PASS      |
| 60      | 5300                     | 2.83                            | 11                  | PASS      |
| 64      | 5320                     | 2.81                            | 11                  | PASS      |
| 100     | 5500                     | 2.41                            | 11                  | PASS      |
| 120     | 5600                     | 2.77                            | 11                  | PASS      |
| 140     | 5700                     | 3.30                            | 11                  | PASS      |

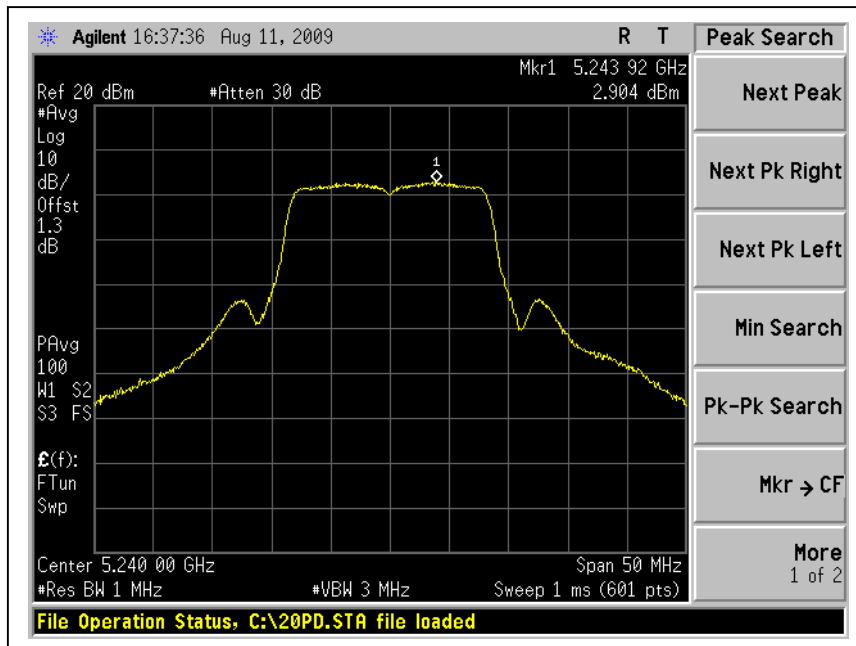
## CH36



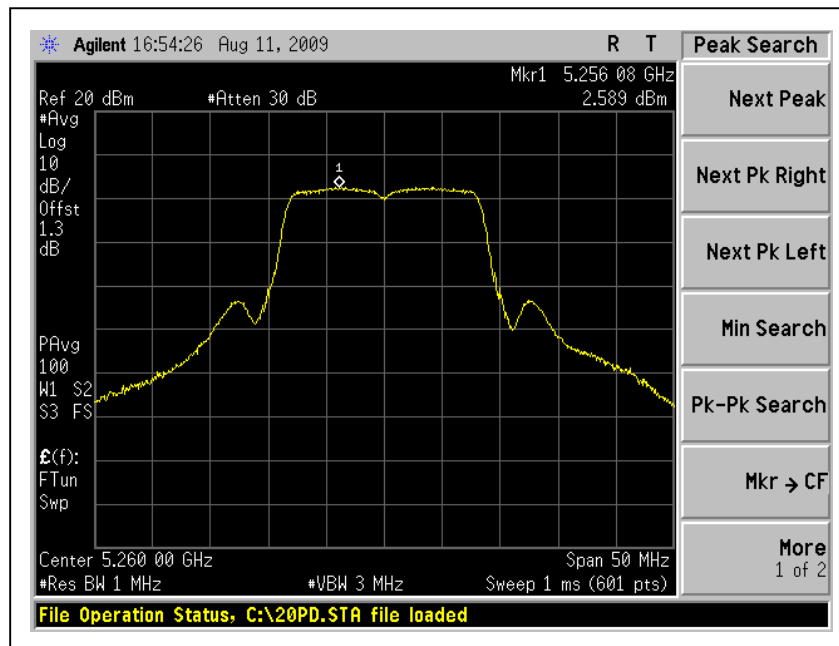
## CH40



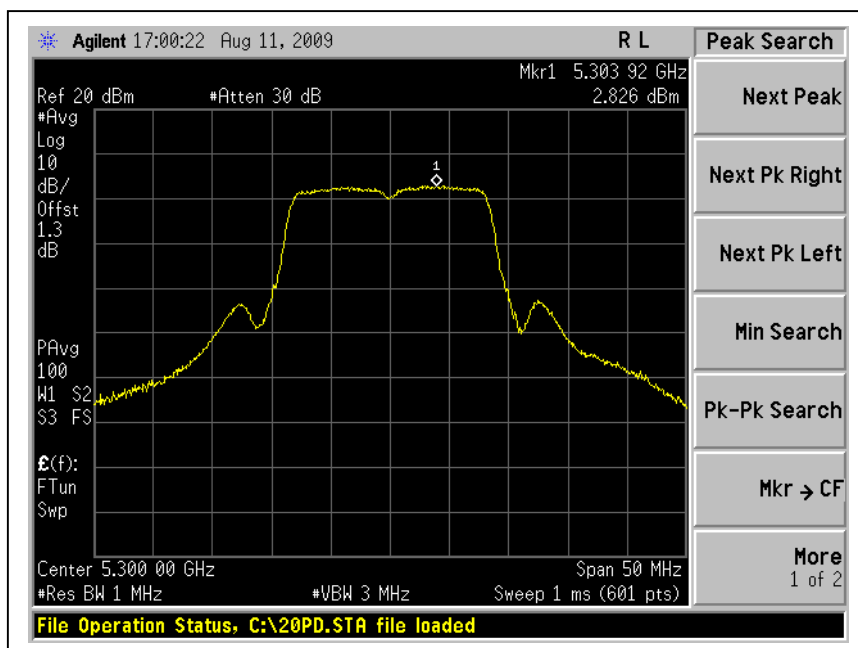
## CH48



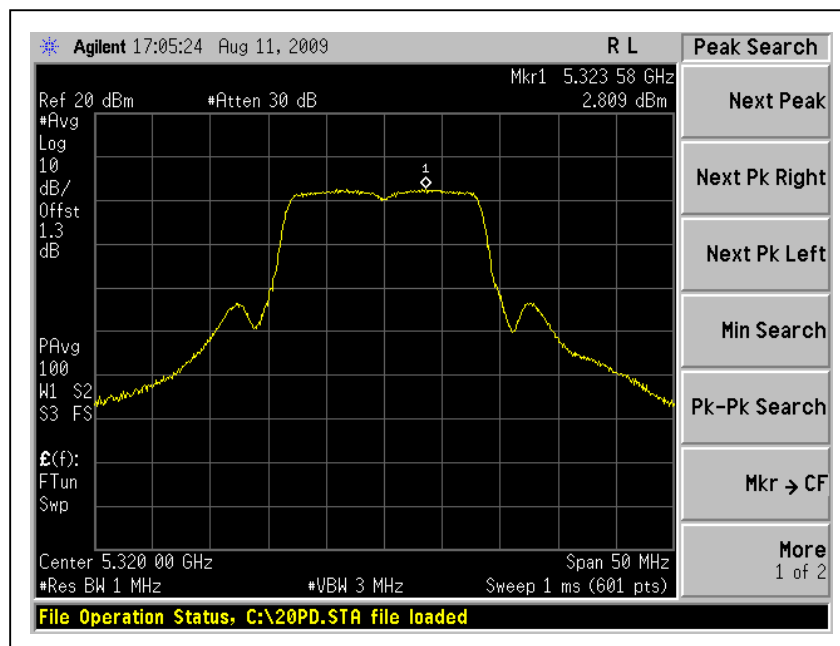
## CH52



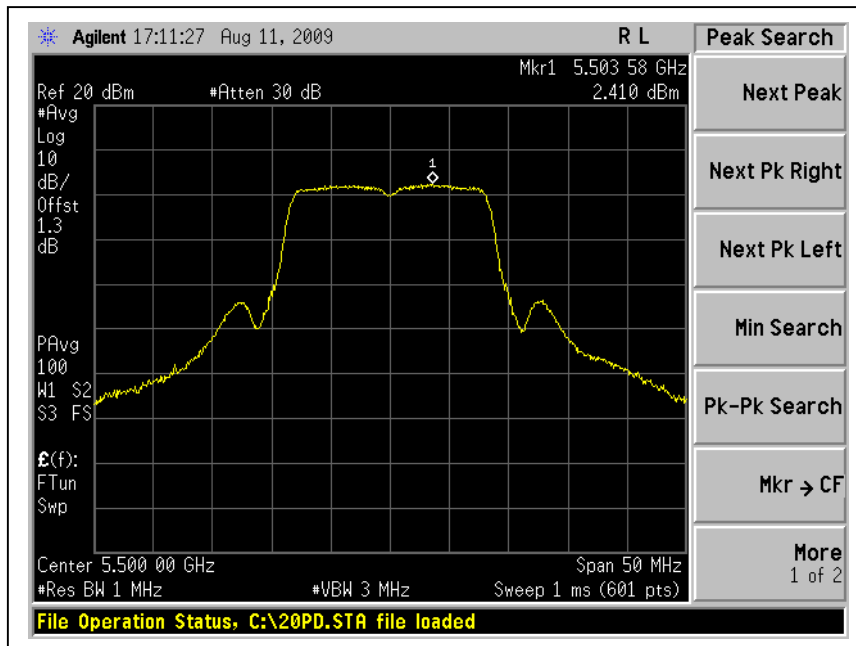
## CH60



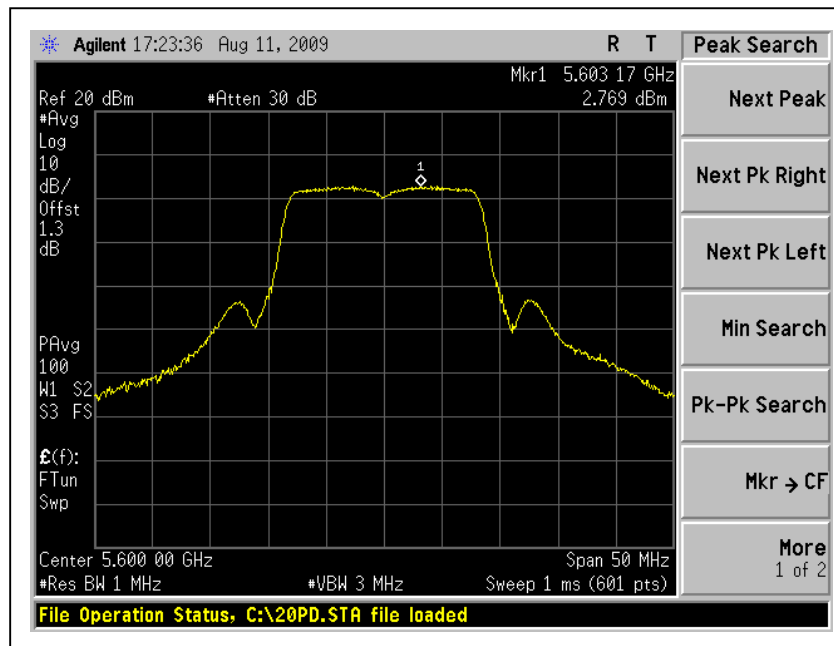
## CH64



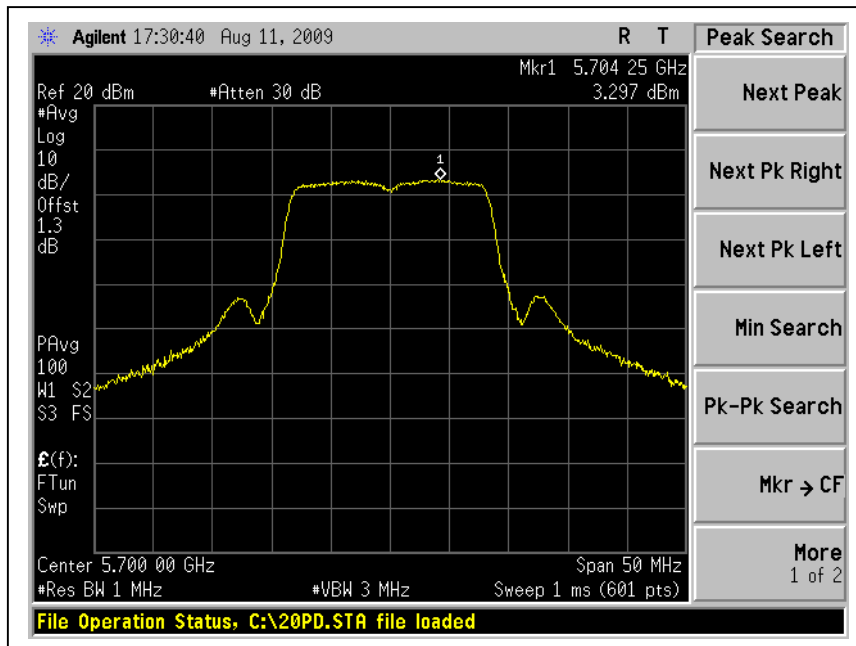
## CH100



## CH120



## CH140





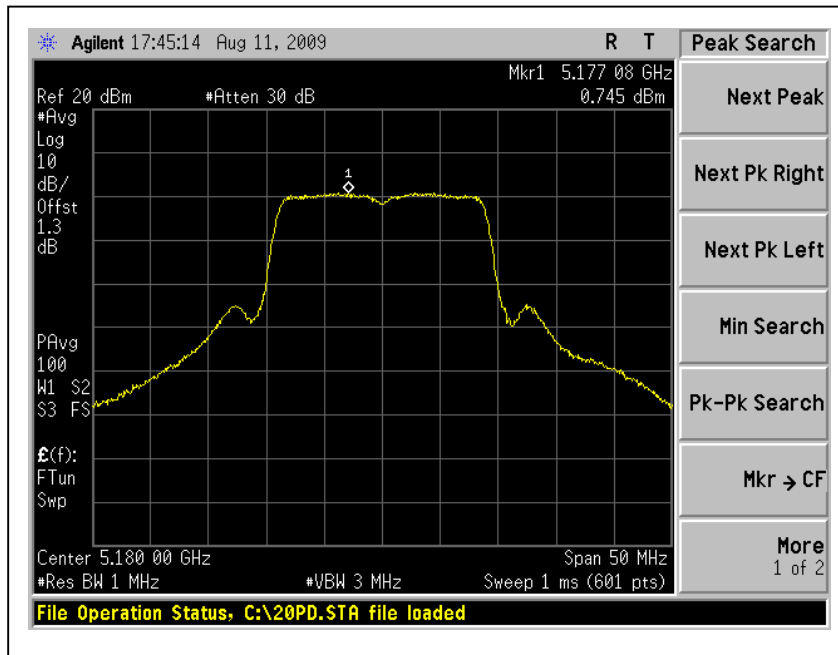
A D T

**DRAFT 802.11n (20MHz) OFDM MODULATION:**

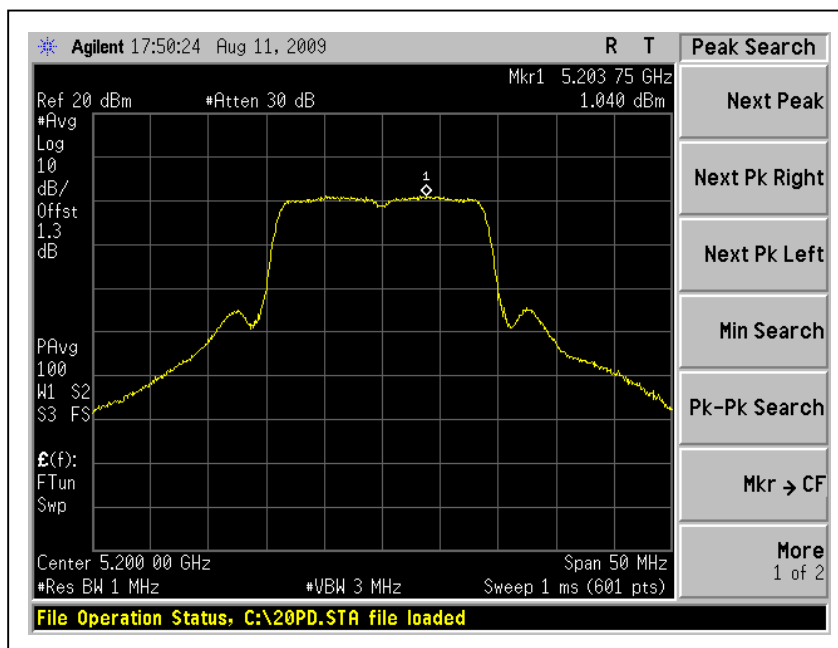
|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 13Mbps                 |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 25deg.C, 60%RH, 965hPa |
| <b>TESTED BY</b>            | Phoenix Huang |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 1MHz BW (dBm) |          | TOTAL OUTPUT POWER DENSITY (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|---------------------------------|----------|----------------------------------|---------------------|-----------|
|         |                         | Chain (0)                       | Chain(1) |                                  |                     |           |
| 36      | 5180                    | 0.75                            | 0.83     | 3.80                             | 4                   | PASS      |
| 40      | 5200                    | 1.04                            | 0.88     | 3.97                             | 4                   | PASS      |
| 48      | 5240                    | 0.85                            | 0.85     | 3.86                             | 4                   | PASS      |
| 52      | 5260                    | 1.85                            | 2.02     | 4.95                             | 11                  | PASS      |
| 60      | 5300                    | 1.91                            | 2.23     | 5.08                             | 11                  | PASS      |
| 64      | 5320                    | 2.10                            | 2.29     | 5.20                             | 11                  | PASS      |
| 100     | 5500                    | 1.54                            | 0.92     | 4.25                             | 11                  | PASS      |
| 120     | 5600                    | 2.14                            | 2.39     | 5.28                             | 11                  | PASS      |
| 140     | 5700                    | 0.82                            | 1.62     | 4.25                             | 11                  | PASS      |

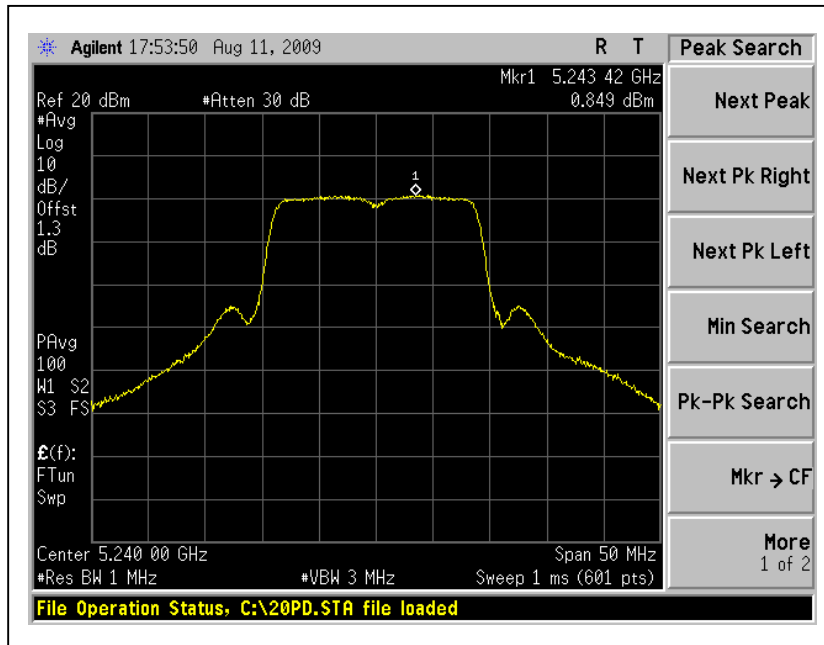
For Chain (0) : CH36



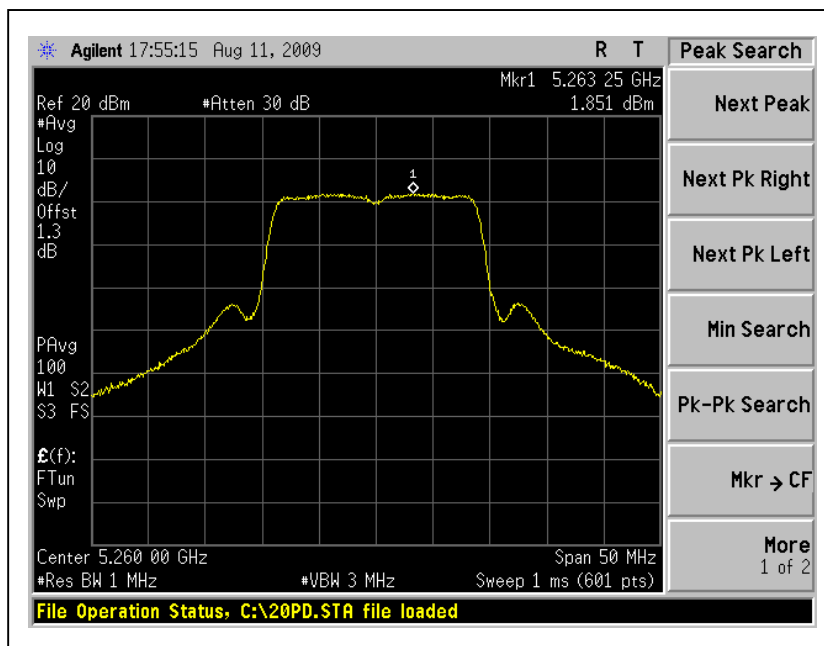
CH40



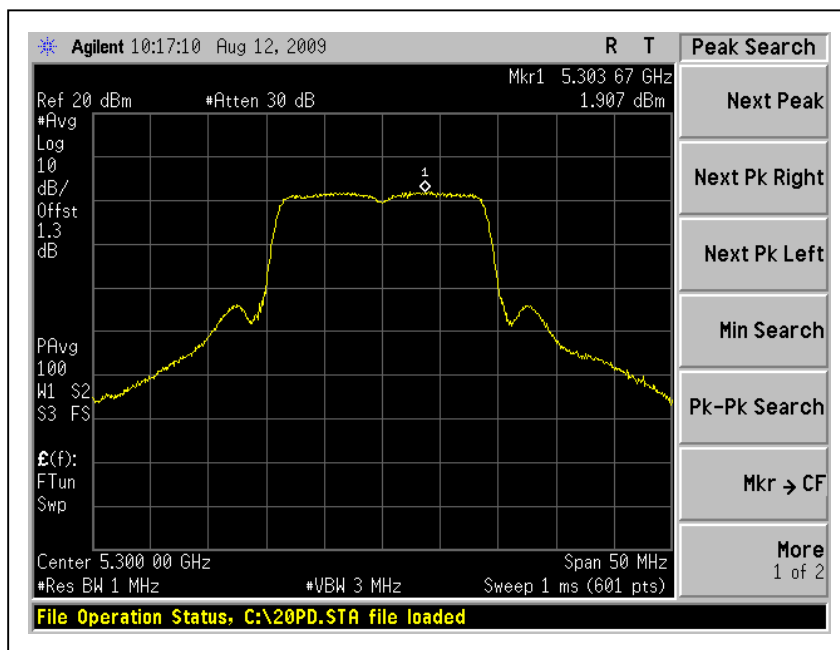
## CH48



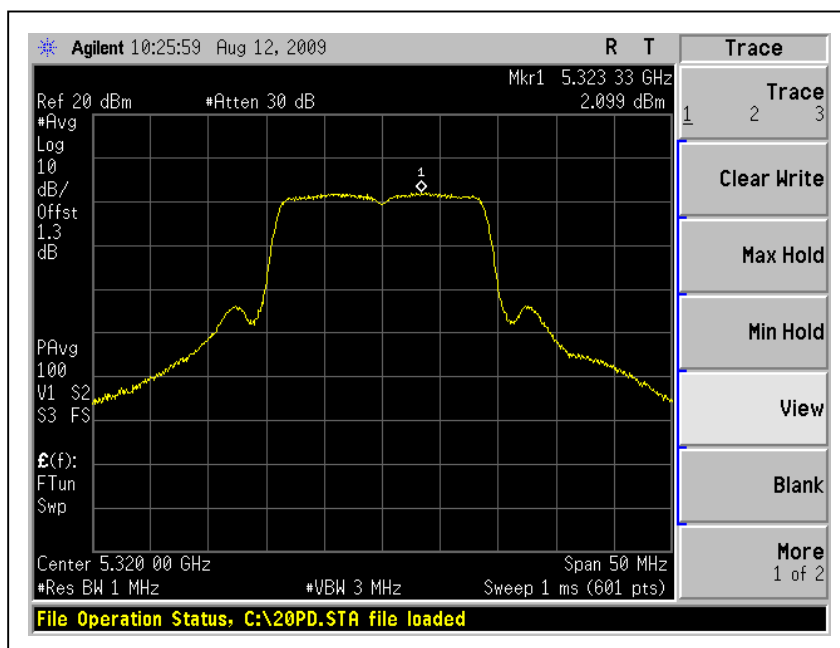
## CH52



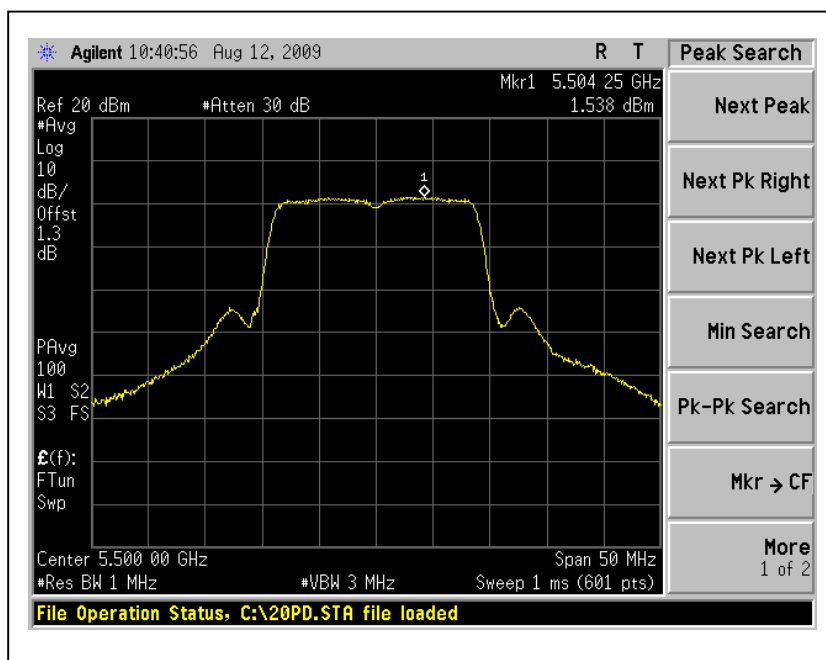
## CH60



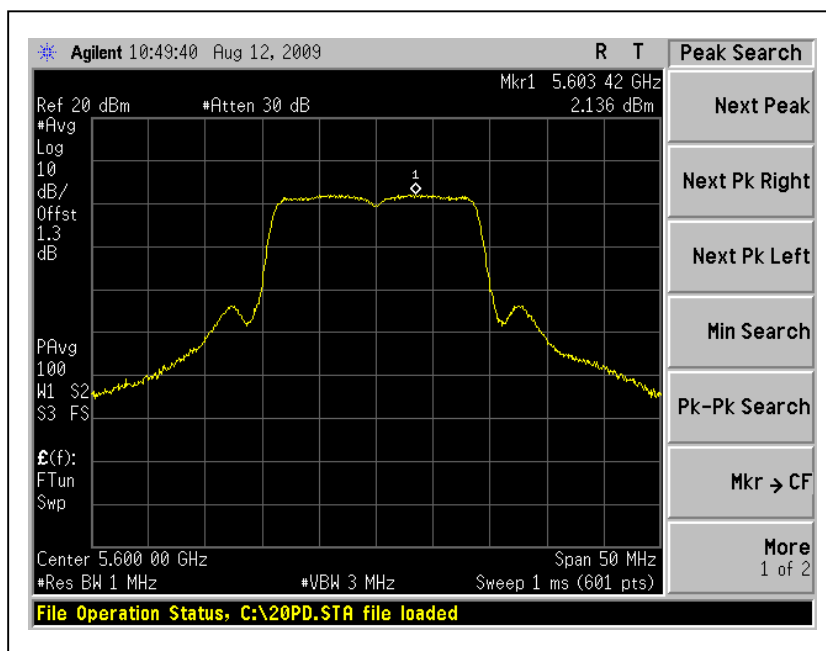
## CH64



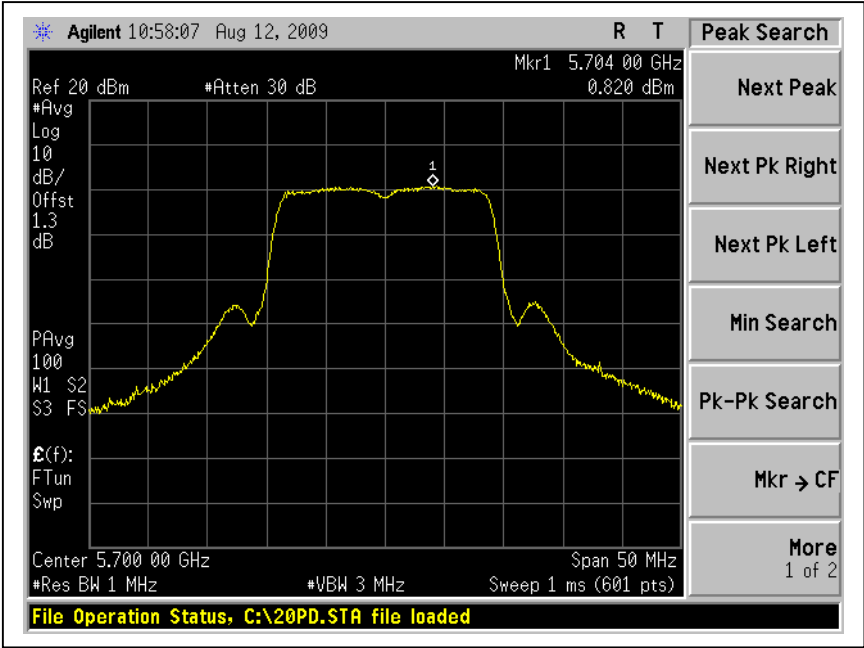
## CH100



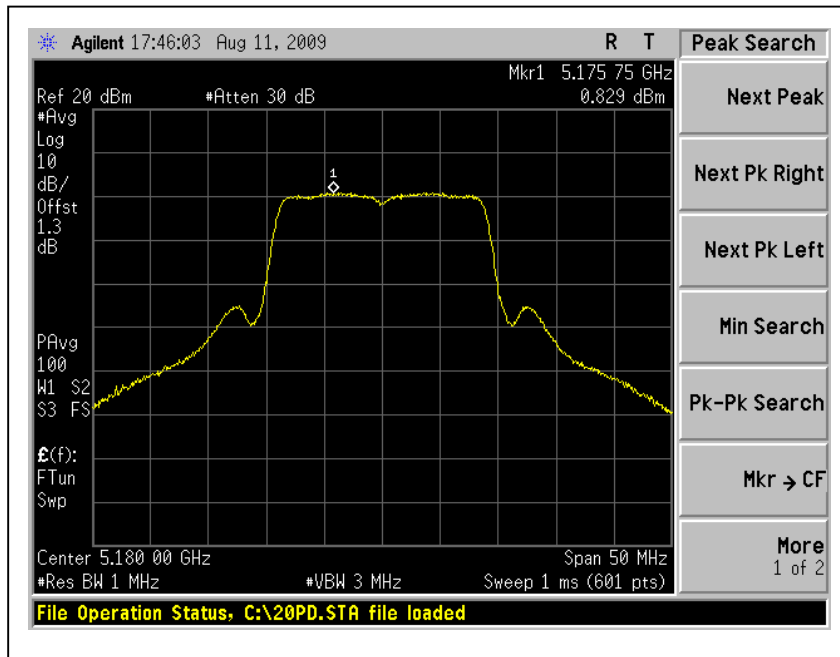
## CH120



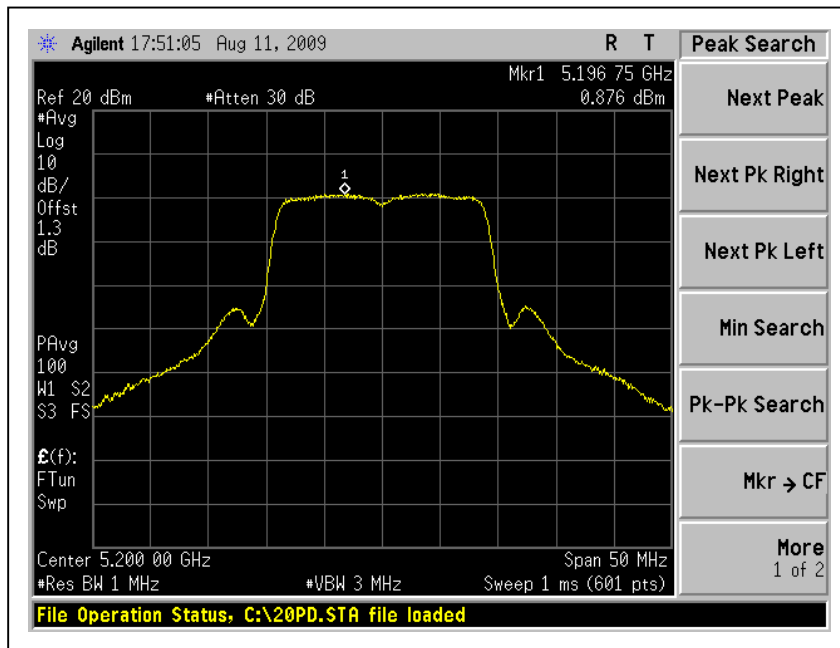
CH140



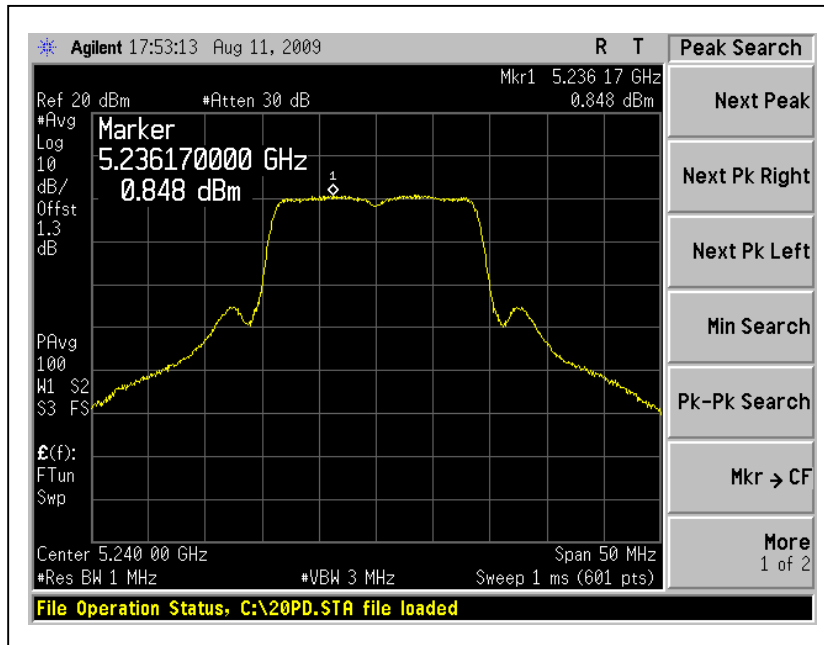
For Chain (1) : CH36



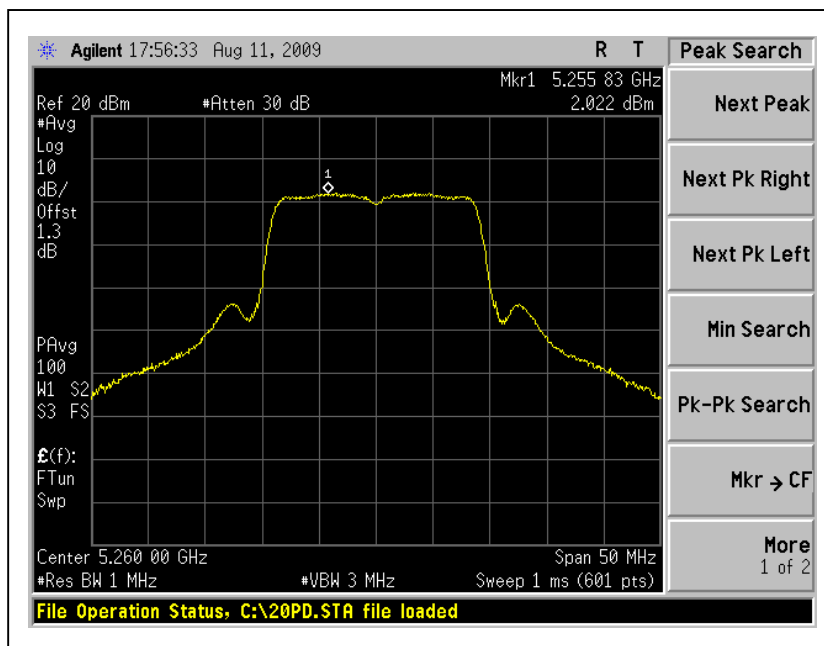
CH40



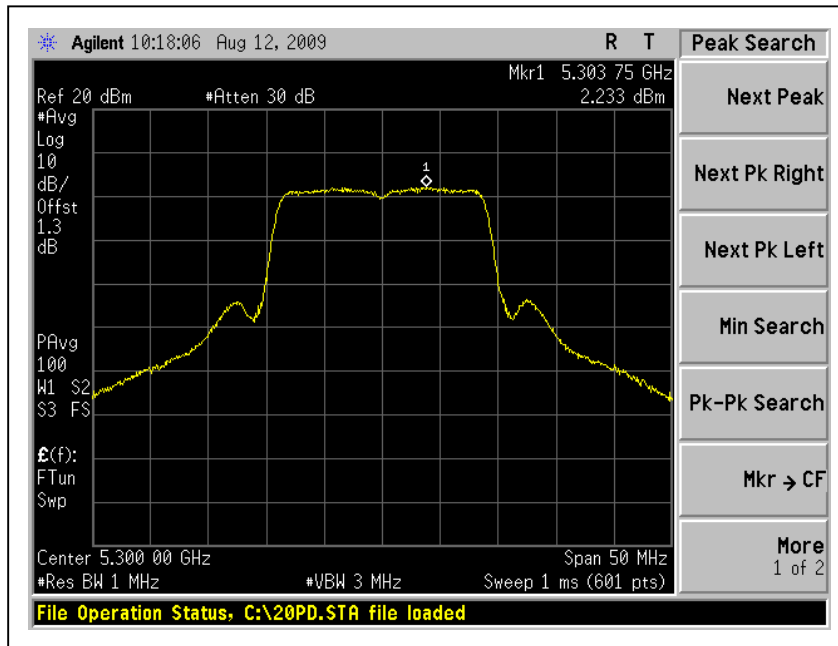
## CH48



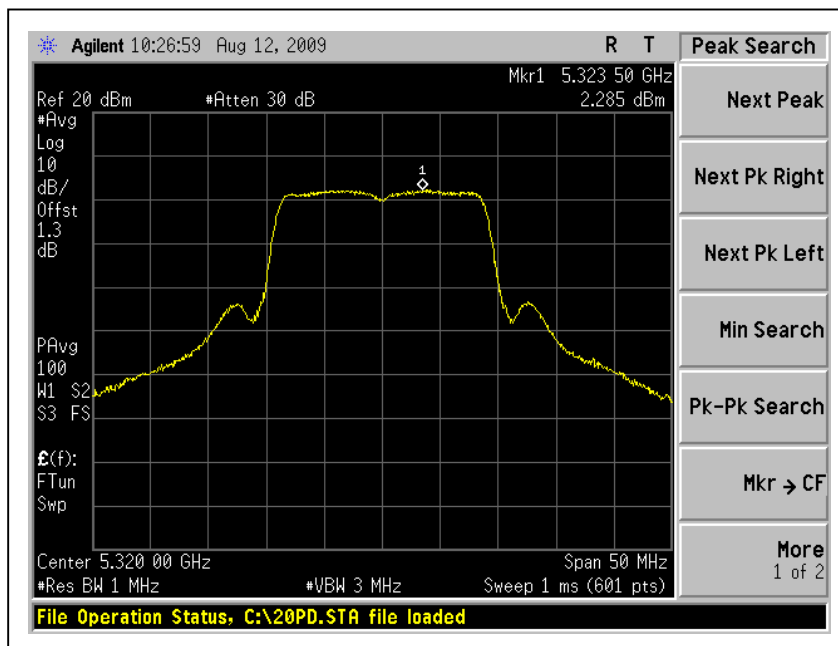
## CH52



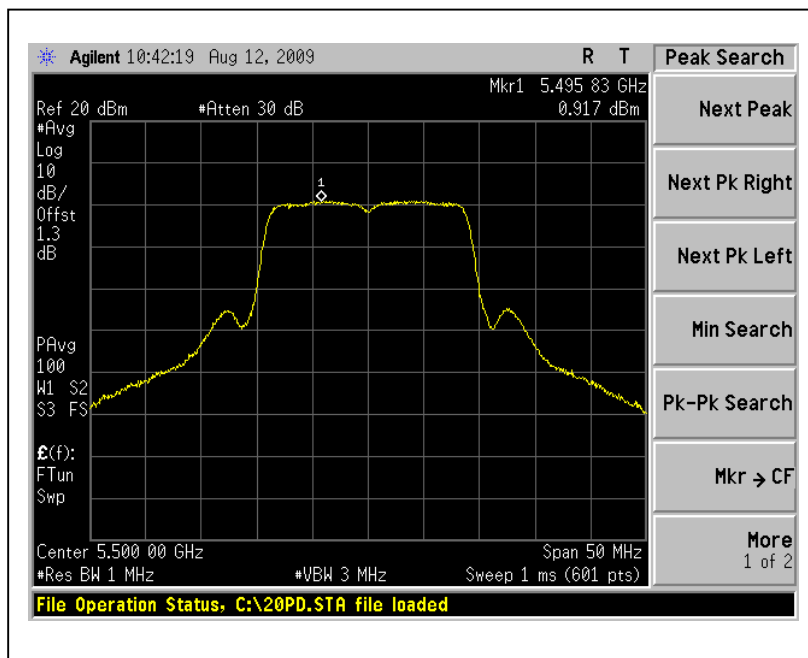
CH60



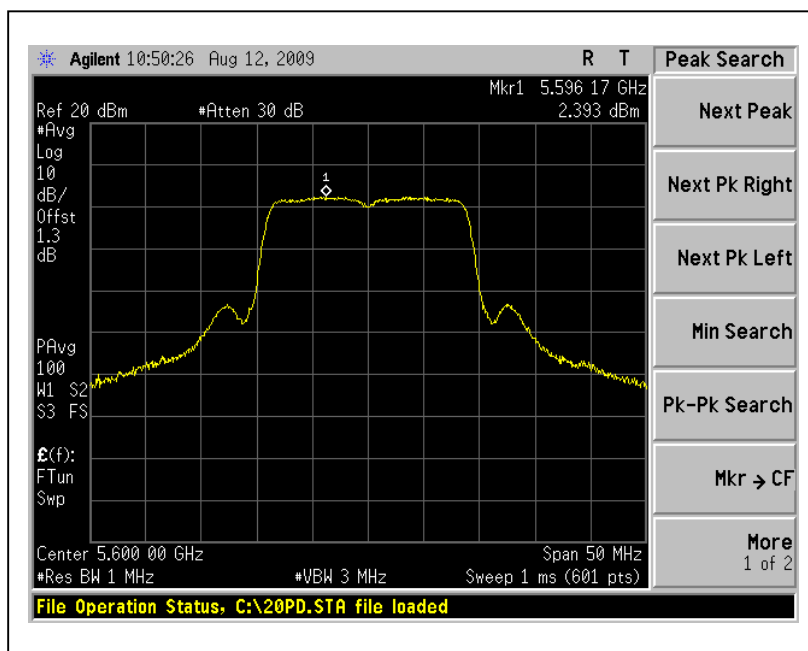
CH64



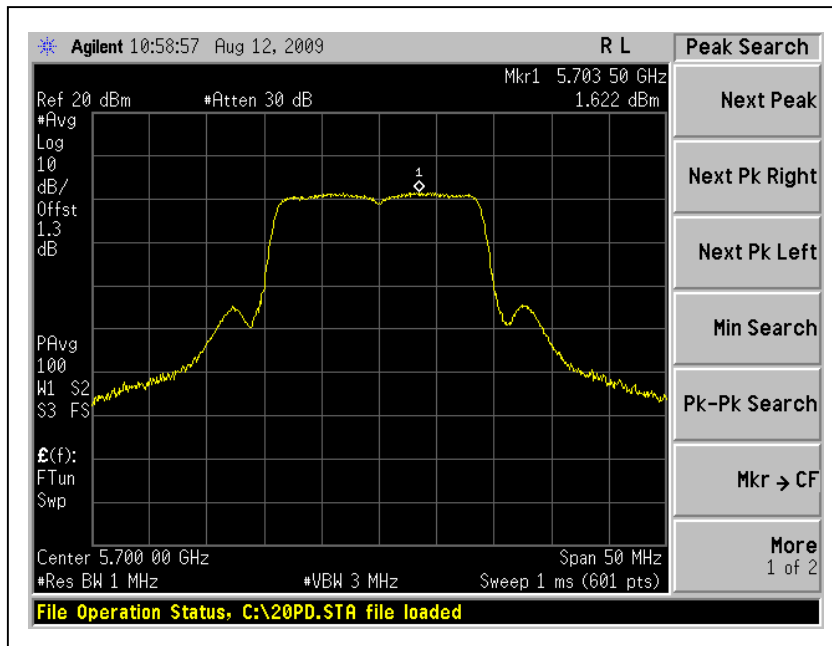
## CH100



## CH120



## CH140





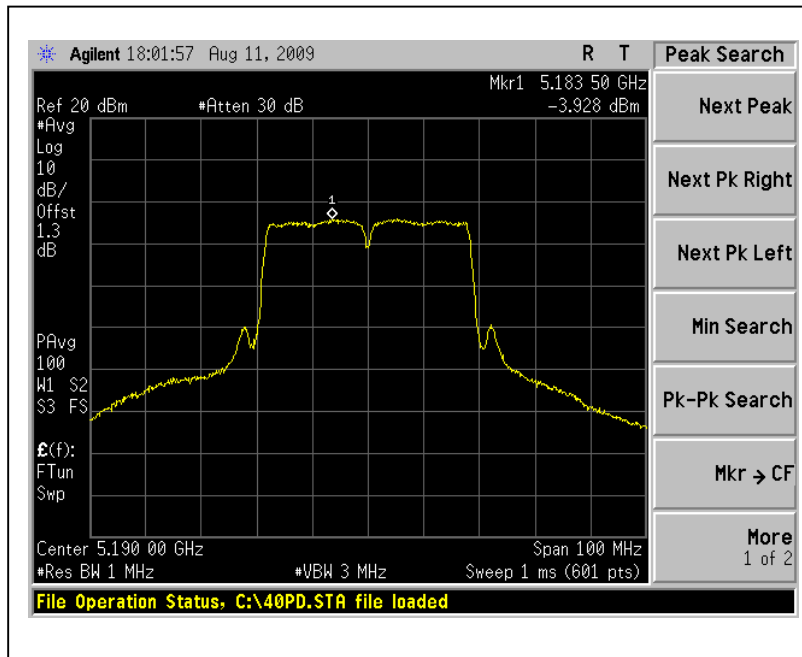
A D T

**DRAFT 802.11n (40MHz) OFDM MODULATION:**

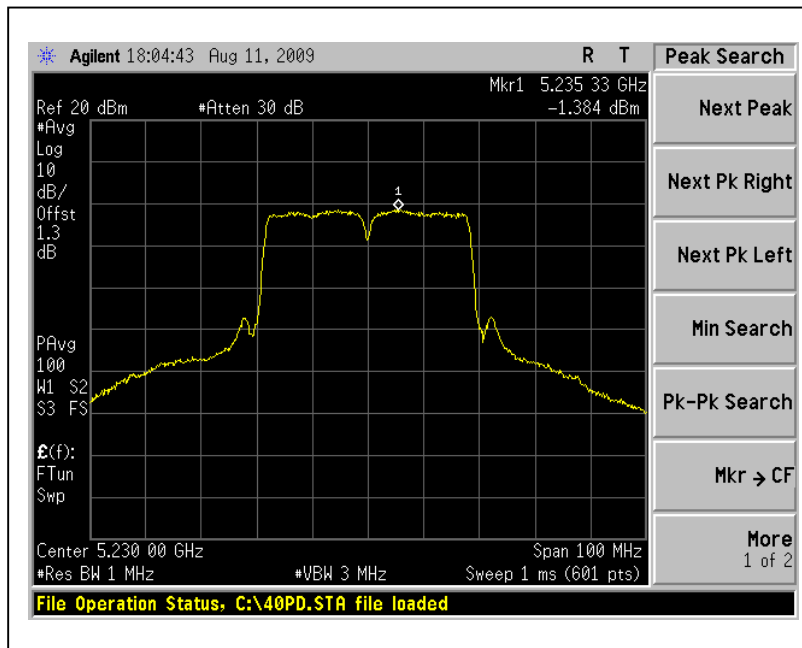
|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 27Mbps                 |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 25deg.C, 60%RH, 965hPa |
| <b>TESTED BY</b>            | Phoenix Huang |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | RF POWER LEVEL IN 1MHz BW (dBm) |          | TOTAL OUTPUT POWER DENSITY (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---------|-------------------------|---------------------------------|----------|----------------------------------|---------------------|-----------|
|         |                         | Chain (0)                       | Chain(1) |                                  |                     |           |
| 38      | 5190                    | -3.93                           | -3.85    | -0.88                            | 4                   | PASS      |
| 46      | 5230                    | -1.38                           | -0.67    | 1.99                             | 4                   | PASS      |
| 54      | 5270                    | -0.75                           | -0.50    | 2.39                             | 11                  | PASS      |
| 62      | 5310                    | -2.12                           | -1.45    | 1.24                             | 11                  | PASS      |
| 102     | 5510                    | -3.84                           | -3.49    | -0.66                            | 11                  | PASS      |
| 118     | 5590                    | -0.20                           | 0.39     | 3.12                             | 11                  | PASS      |
| 134     | 5670                    | -0.09                           | -1.76    | 2.16                             | 11                  | PASS      |

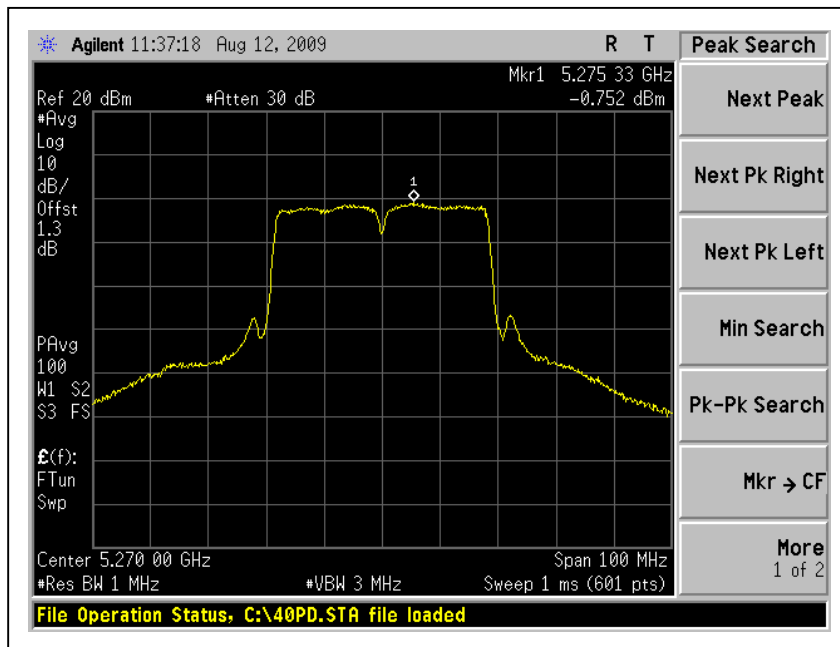
For Chain (0) : CH38



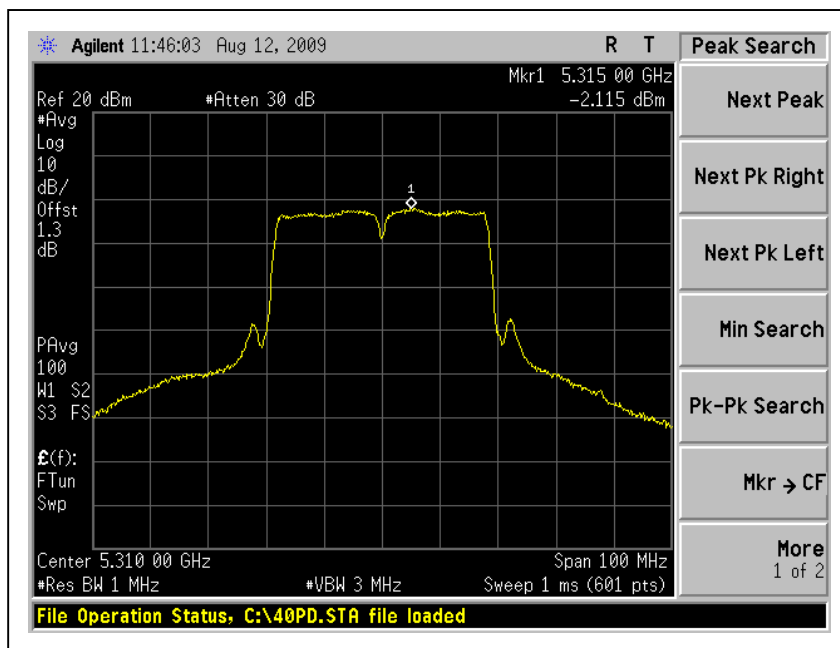
CH46



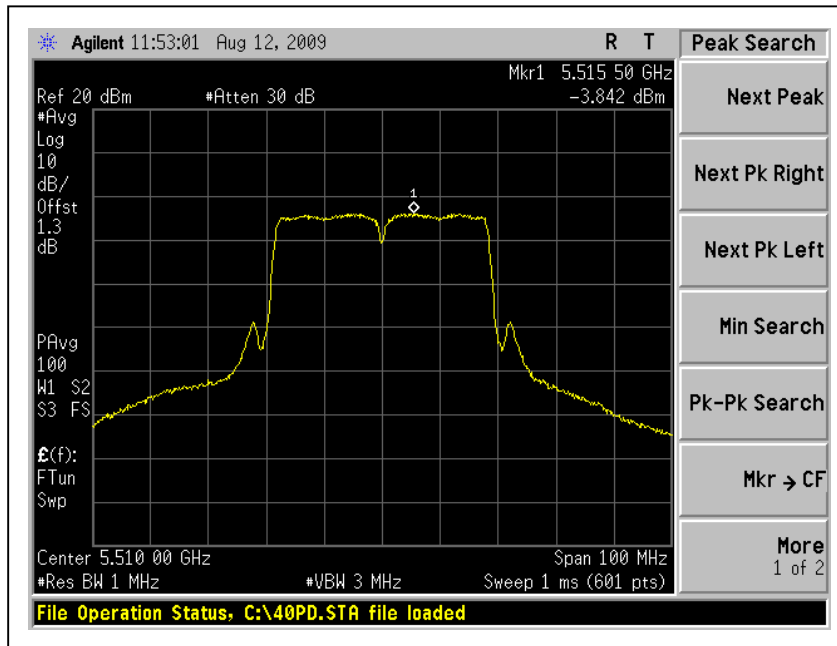
## CH54



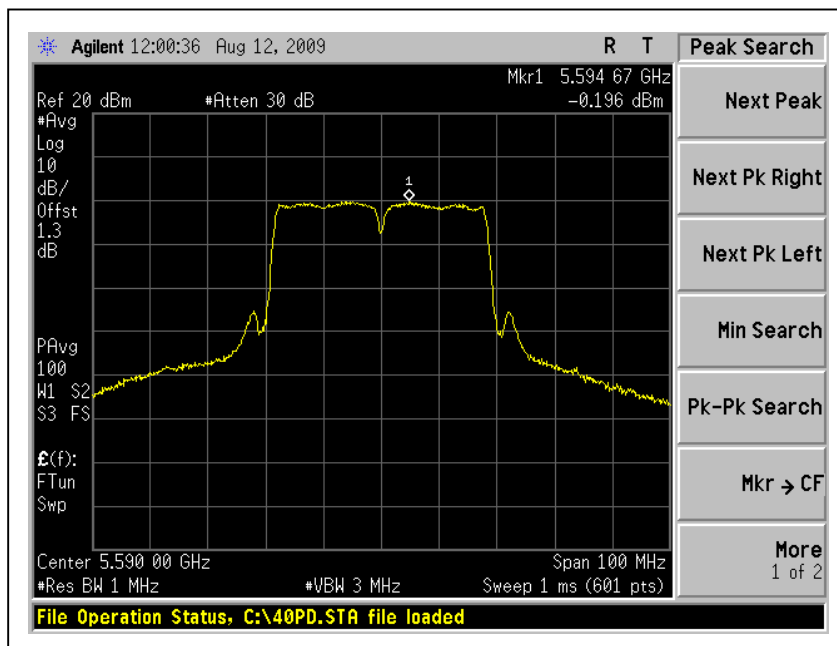
## CH62



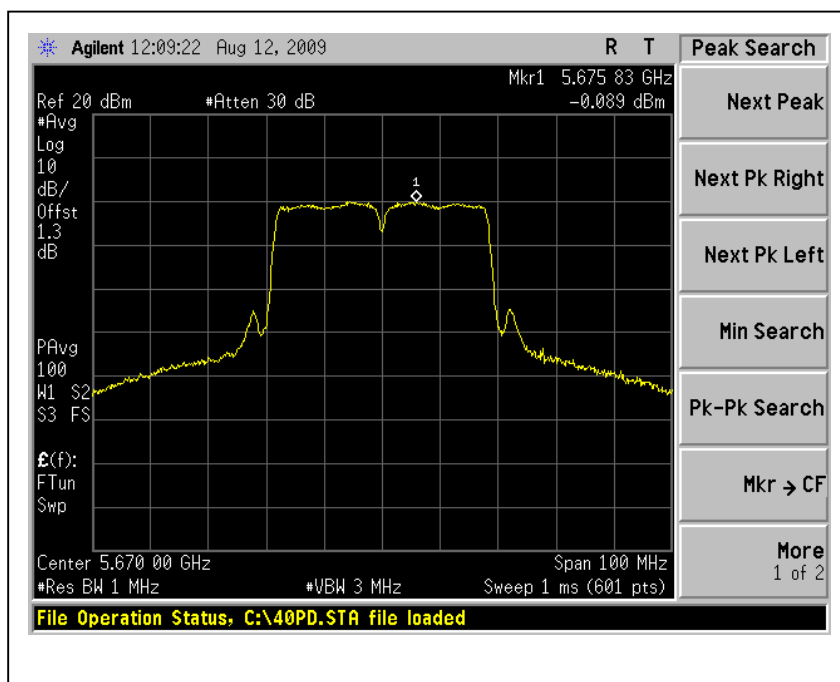
## CH102



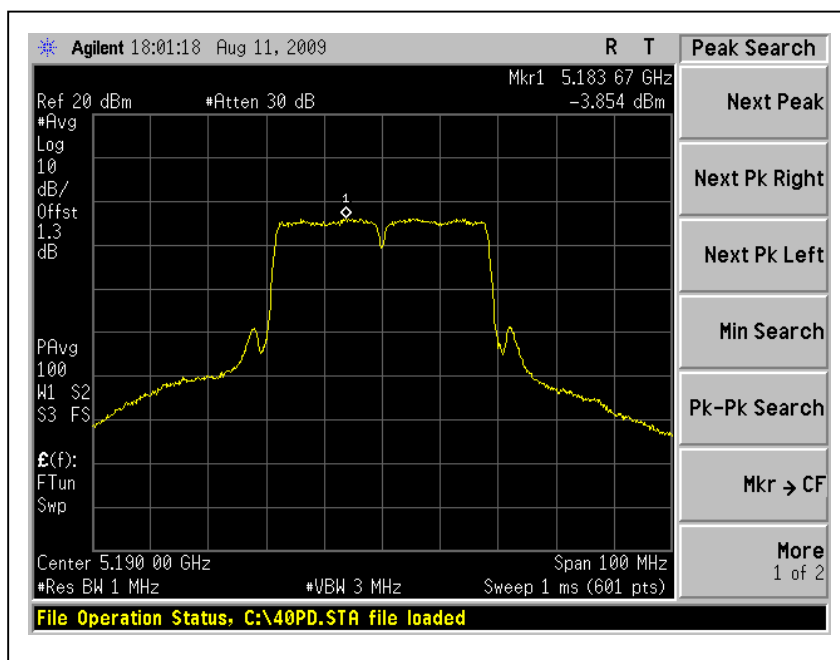
## CH118



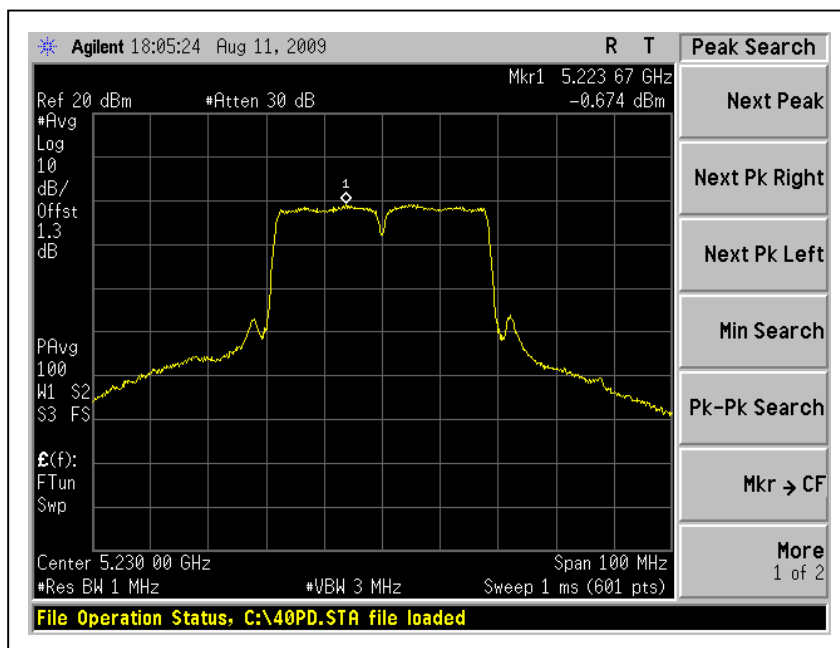
## CH134



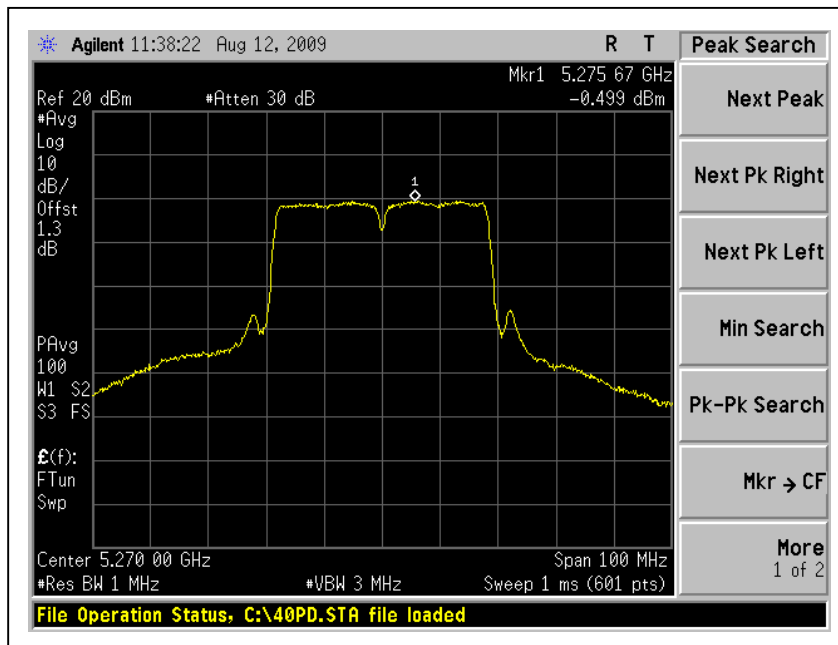
For Chain (1) : CH38



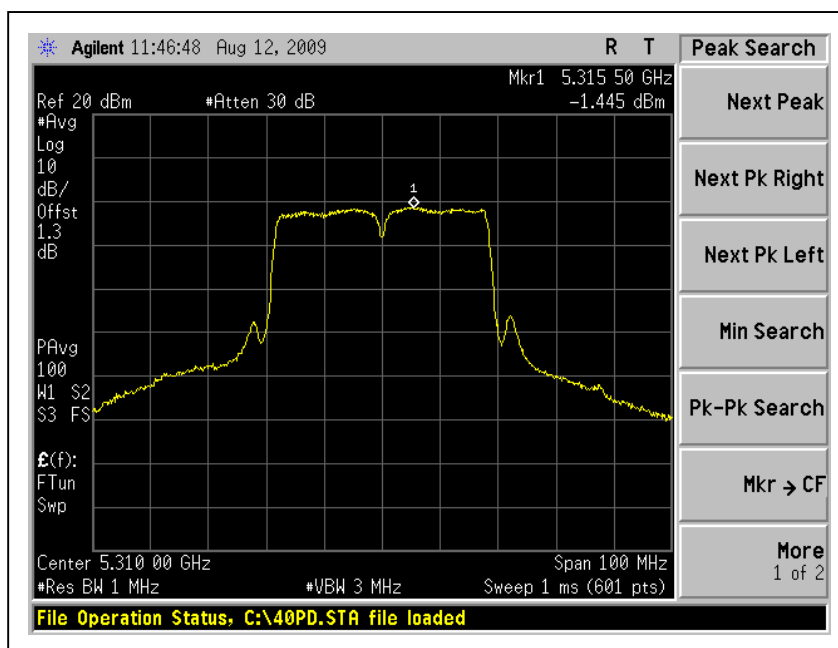
CH46



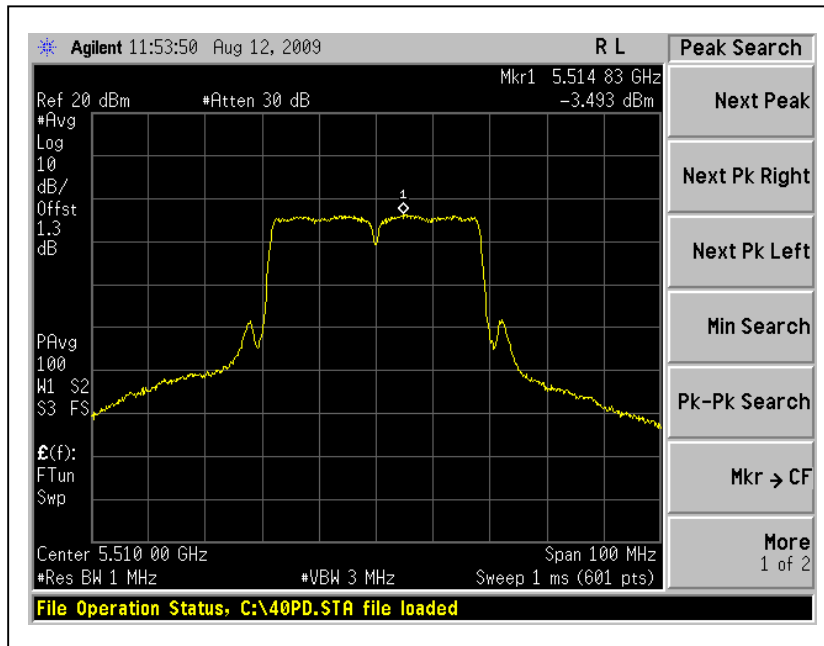
## CH54



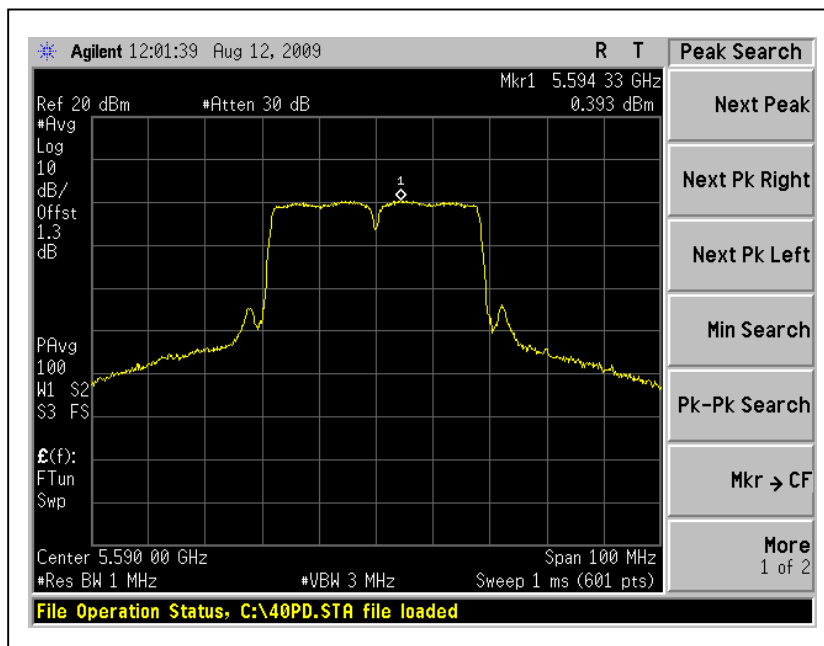
## CH62



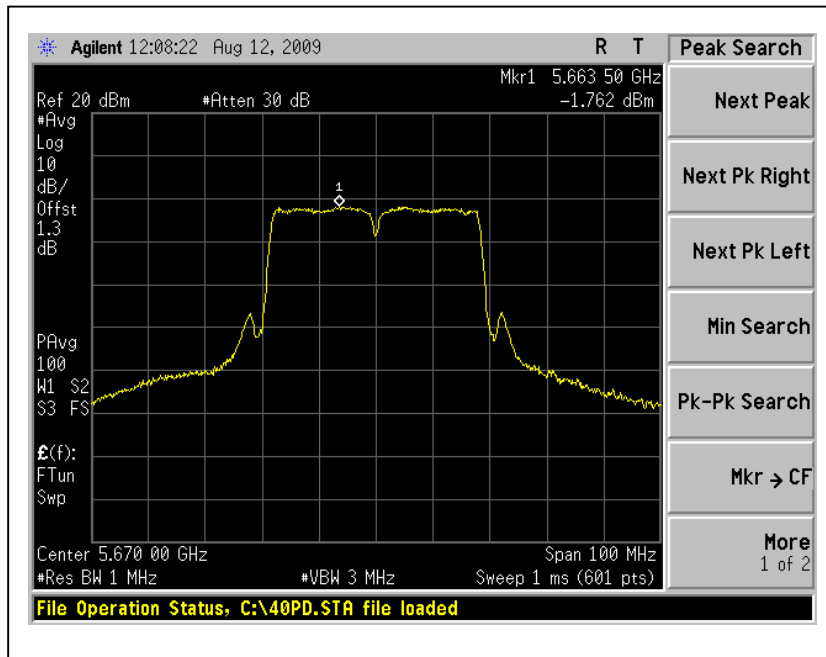
## CH102



## CH118



# CH134



## 4.6 FREQUENCY STABILITY

### 4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.02\%$  of the operating frequency over a temperature variation of  $-30$  degrees to  $50$  degrees C at normal supply voltage, and for a variation in the primary supply voltage from  $85\%$  to  $115\%$  of the rated supply voltage at a temperature of  $20$  degrees C.

### 4.6.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------|-----------|------------|-----------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100037     | Aug. 03, 2009   | Aug. 02, 2010    |

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

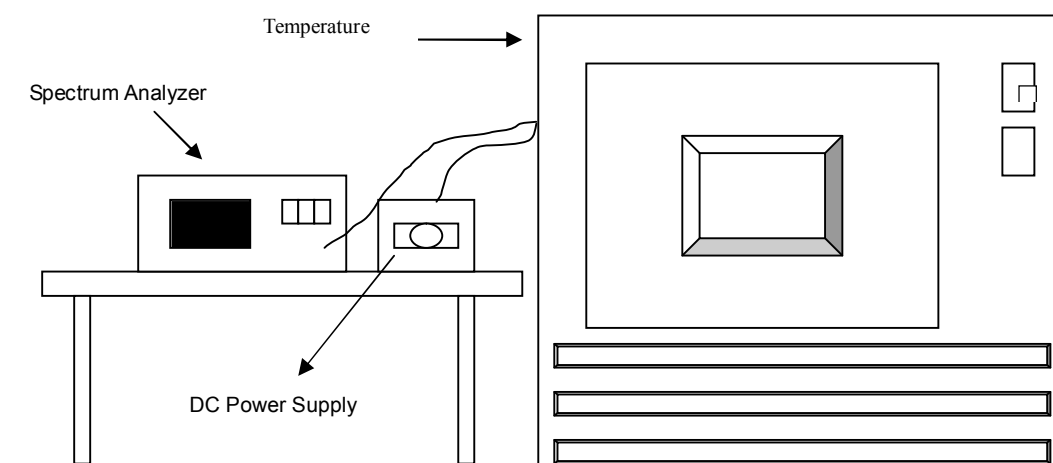
### 4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at  $+20$  degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from  $85\%$  to  $115\%$  and the frequency record.

#### 4.6.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.6.5 TEST SETUP



#### 4.6.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

#### 4.6.7 TEST RESULTS

| Operating frequency: 5320MHz |                          |           |          | Limit : $\pm 0.02\%$ |          |           |          |
|------------------------------|--------------------------|-----------|----------|----------------------|----------|-----------|----------|
| Temp.<br>(°C)                | Power<br>supply<br>(VAC) | 2 minute  |          | 5 minute             |          | 10 minute |          |
|                              |                          | (MHz)     | (%)      | (MHz)                | (%)      | (MHz)     | (%)      |
| 50                           | 126.5                    | 5320.011  | 0.000207 | 5319.9920            | 0.000150 | 5320.0180 | 0.000338 |
|                              | 110                      | 5319.99   | 0.000188 | 5320.0100            | 0.000188 | 5319.9800 | 0.000376 |
|                              | 93.5                     | 5320.0102 | 0.000192 | 5319.9950            | 0.000094 | 5320.0100 | 0.000188 |
| 40                           | 126.5                    | 5320.0338 | 0.000635 | 5320.0341            | 0.000641 | 5320.0342 | 0.000643 |
|                              | 110                      | 5320.0338 | 0.000635 | 5320.034             | 0.000639 | 5320.0342 | 0.000643 |
|                              | 93.5                     | 5320.034  | 0.000639 | 5320.0338            | 0.000635 | 5320.0342 | 0.000643 |
| 30                           | 126.5                    | 5320.009  | 0.000169 | 5320.0085            | 0.000160 | 5320.0082 | 0.000154 |
|                              | 110                      | 5320.009  | 0.000169 | 5320.0087            | 0.000164 | 5320.0085 | 0.000160 |
|                              | 93.5                     | 5320.009  | 0.000169 | 5320.0085            | 0.000160 | 5320.0082 | 0.000154 |
| 20                           | 126.5                    | 5319.9896 | 0.000195 | 5319.9893            | 0.000201 | 5319.9891 | 0.000205 |
|                              | 110                      | 5319.996  | 0.000075 | 5319.997             | 0.000056 | 5319.9960 | 0.000075 |
|                              | 93.5                     | 5319.9896 | 0.000195 | 5319.9893            | 0.000201 | 5319.9890 | 0.000207 |
| 10                           | 126.5                    | 5320.0381 | 0.000716 | 5320.0380            | 0.000714 | 5320.0380 | 0.000714 |
|                              | 110                      | 5320.0387 | 0.000727 | 5320.0378            | 0.000711 | 5320.0384 | 0.000722 |
|                              | 93.5                     | 5320.0384 | 0.000722 | 5320.0379            | 0.000712 | 5320.0381 | 0.000716 |
| 0                            | 126.5                    | 5320.04   | 0.000752 | 5320.0398            | 0.000748 | 5320.0390 | 0.000733 |
|                              | 110                      | 5320.042  | 0.000789 | 5320.045             | 0.000846 | 5320.0410 | 0.000771 |
|                              | 93.5                     | 5320.041  | 0.000771 | 5320.042             | 0.000789 | 5320.0400 | 0.000752 |
| -10                          | 126.5                    | 5320.0436 | 0.000820 | 5320.0435            | 0.000818 | 5320.0432 | 0.000812 |
|                              | 110                      | 5320.0437 | 0.000821 | 5320.0432            | 0.000812 | 5320.0436 | 0.000820 |
|                              | 93.5                     | 5320.0435 | 0.000818 | 5320.0434            | 0.000816 | 5320.0435 | 0.000818 |
| -20                          | 126.5                    | 5320.0368 | 0.000692 | 5320.0365            | 0.000686 | 5320.0364 | 0.000684 |
|                              | 110                      | 5320.0367 | 0.000690 | 5320.0366            | 0.000688 | 5320.0368 | 0.000692 |
|                              | 93.5                     | 5320.0366 | 0.000688 | 5320.0364            | 0.000684 | 5320.0367 | 0.000690 |
| -30                          | 126.5                    | 5320.011  | 0.000207 | 5319.9920            | 0.000150 | 5320.0180 | 0.000338 |
|                              | 110                      | 5319.99   | 0.000188 | 5320.0100            | 0.000188 | 5319.9800 | 0.000376 |
|                              | 93.5                     | 5320.0102 | 0.000192 | 5319.9950            | 0.000094 | 5320.0100 | 0.000188 |



A D T

## 4.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT

### 4.7.1 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------|-----------|------------|-----------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100037     | Aug. 03, 2009   | Aug. 02, 2010    |

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

### 4.7.2 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set RBW of spectrum analyzer to 1MHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges were measured and recorded.

### 4.7.3 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

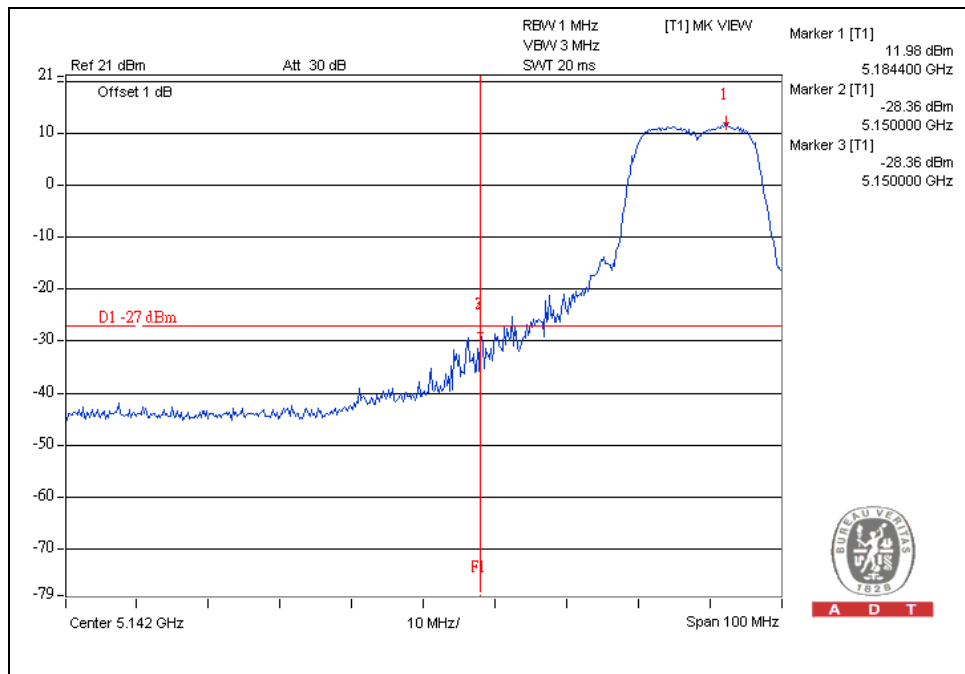
#### 4.7.4 TEST RESULTS

For 5.15 to 5.35GHz band:

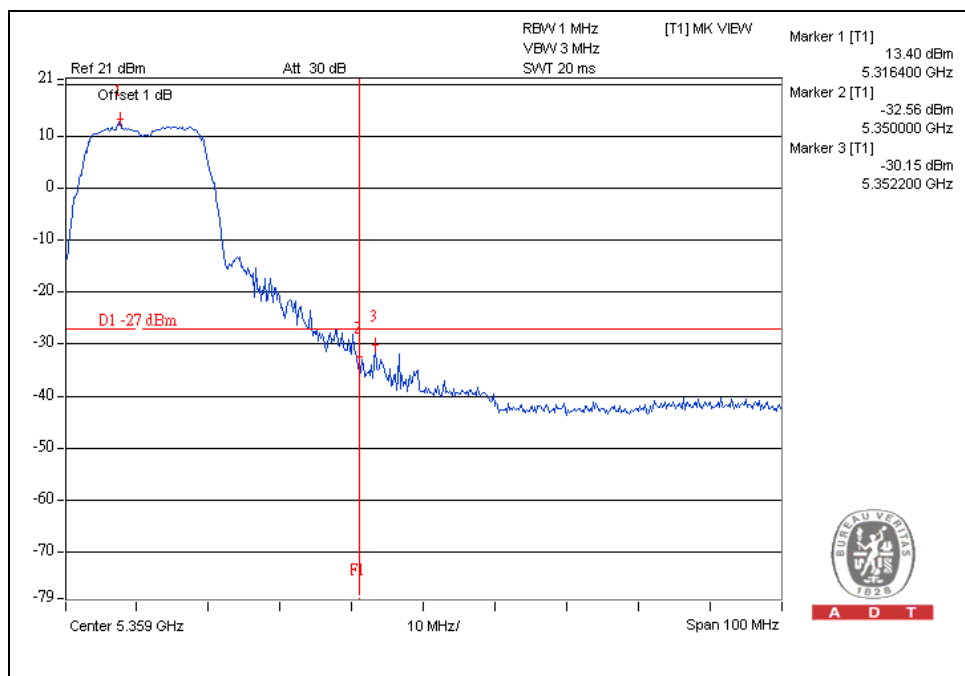
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

## 802.11a OFDM modulation

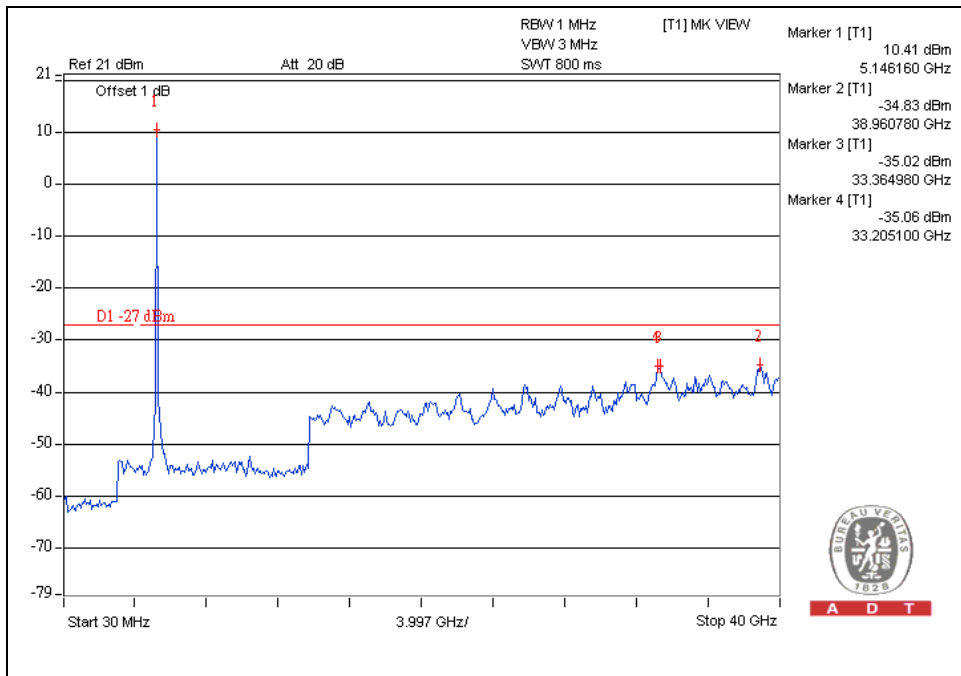
### CH 36



### CH 64

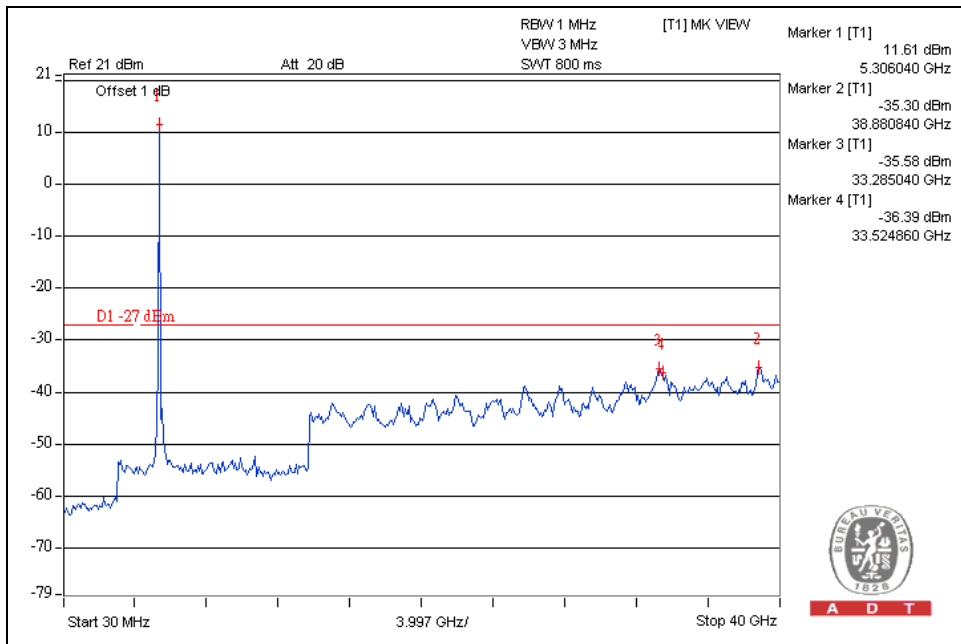


## CH 36



A D T

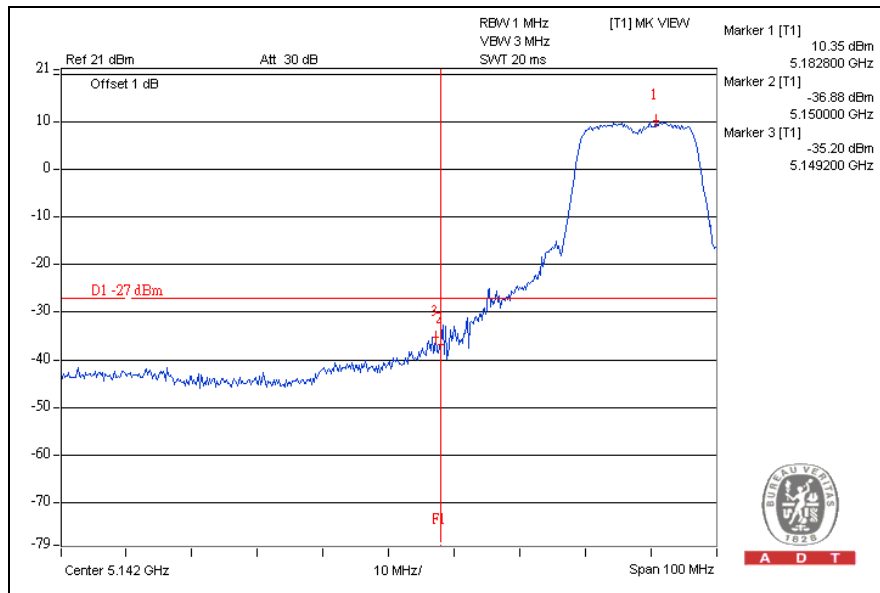
## CH 64



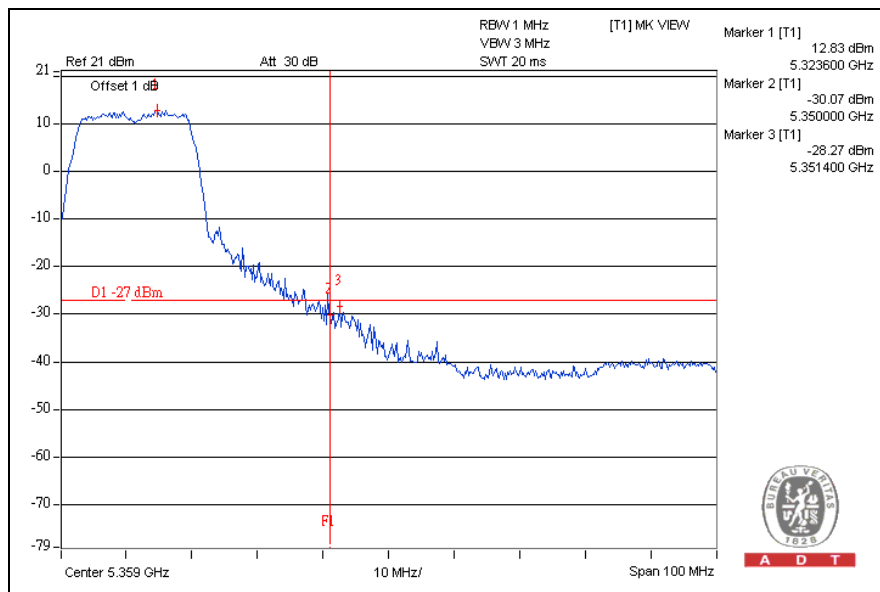
A D T

## DRAFT 802.11n (20MHz) OFDM MODULATION:

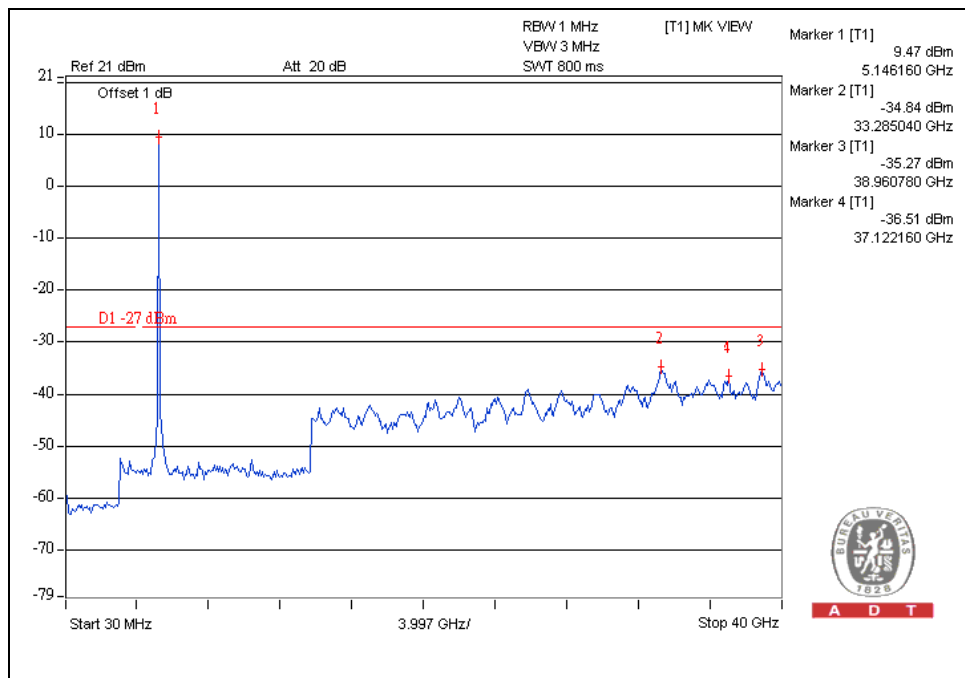
### CH36



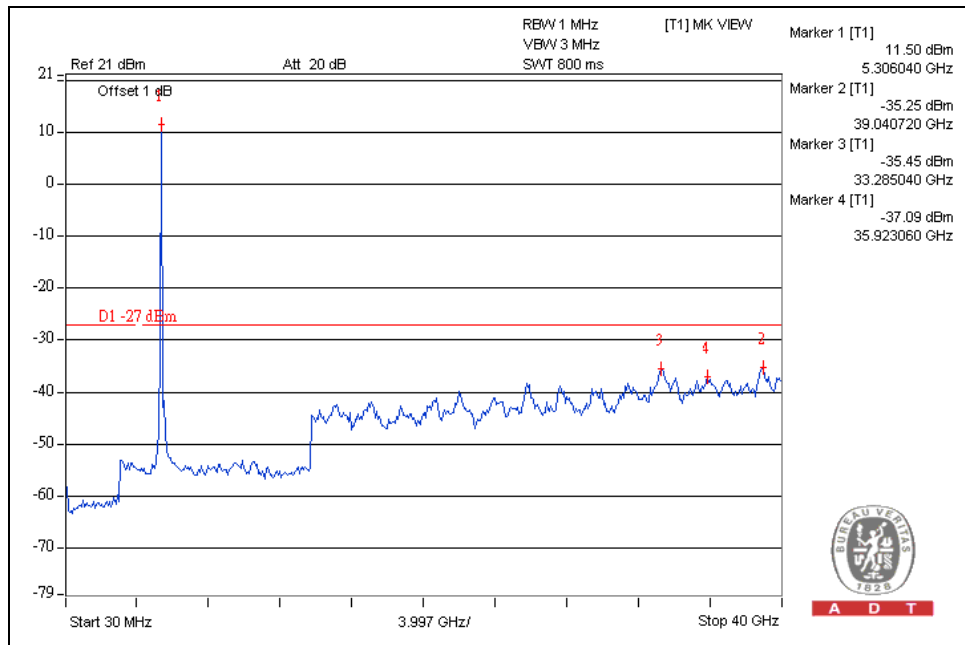
### CH64



## CH36

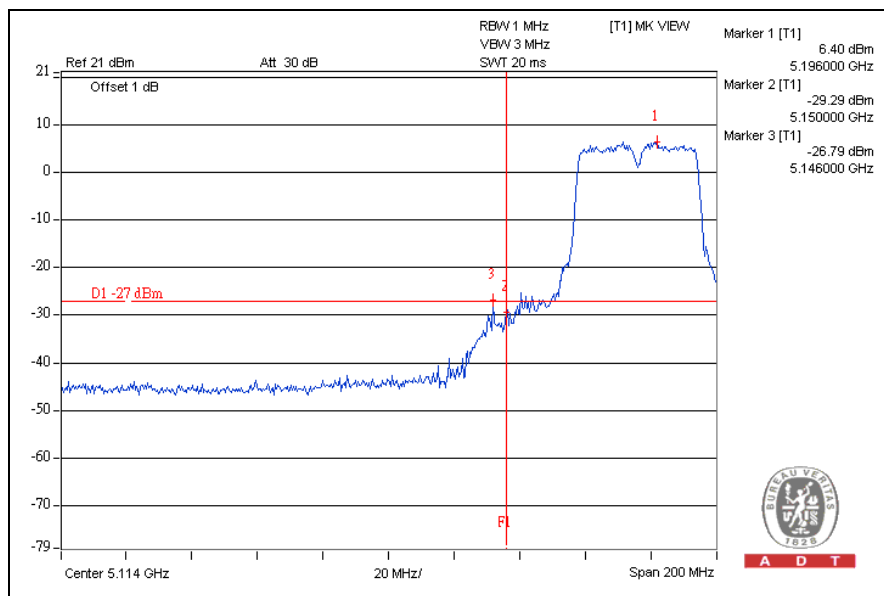


## CH64

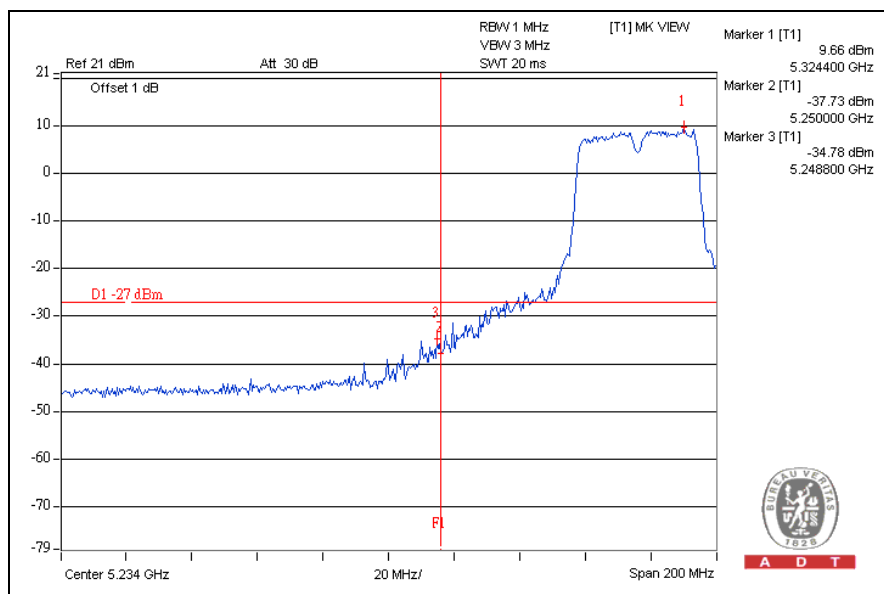


## DRAFT 802.11n (40MHz) OFDM MODULATION:

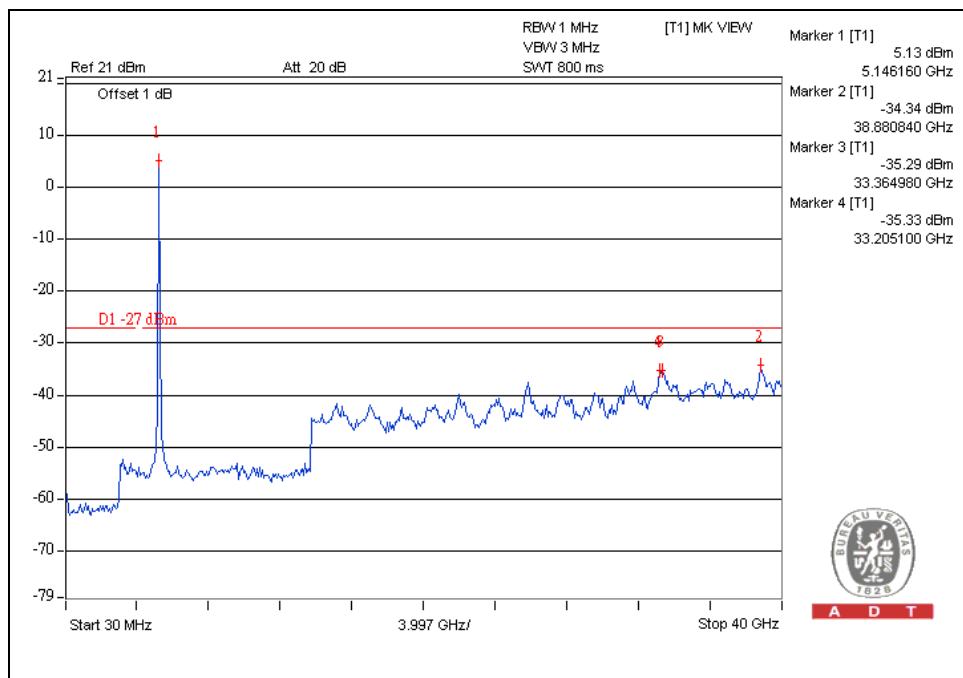
### CH38



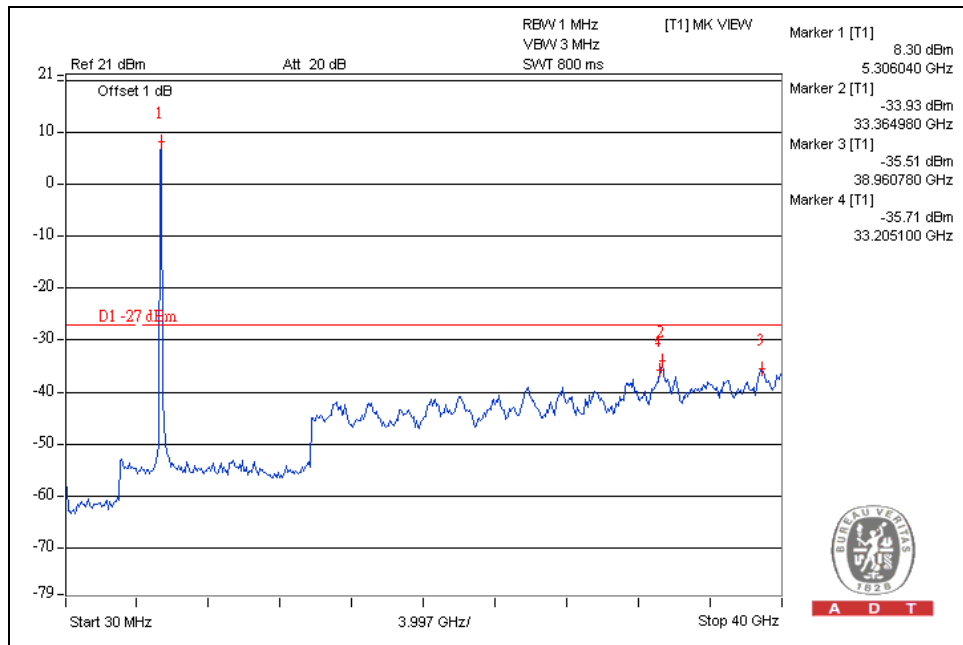
### CH62



## CH38



## CH62

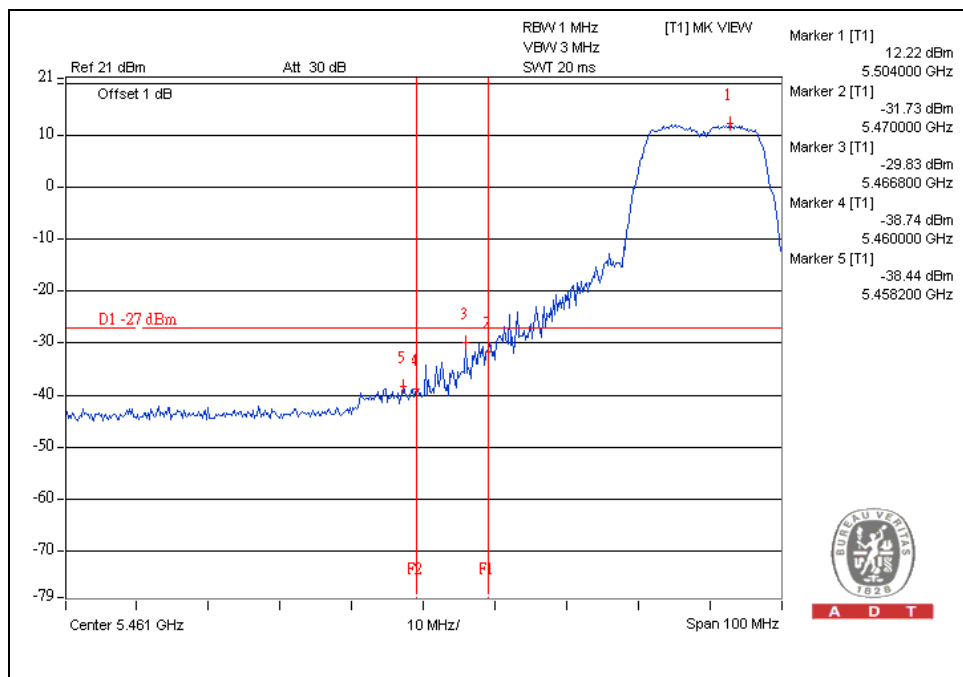


For 5.47 to 5.725GHz band:

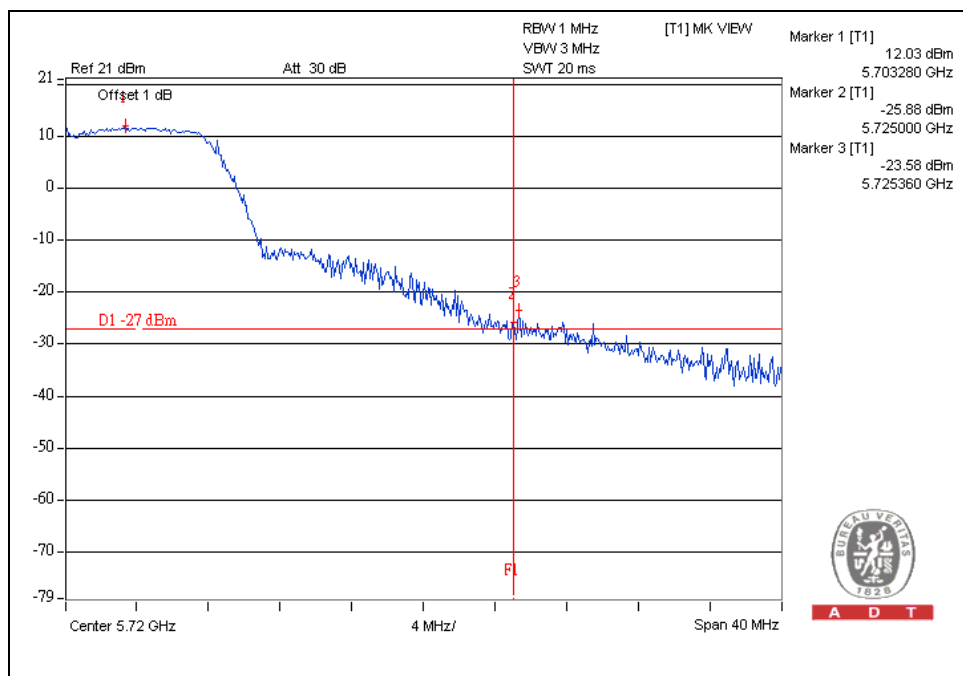
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

## 802.11a OFDM modulation

### CH 100



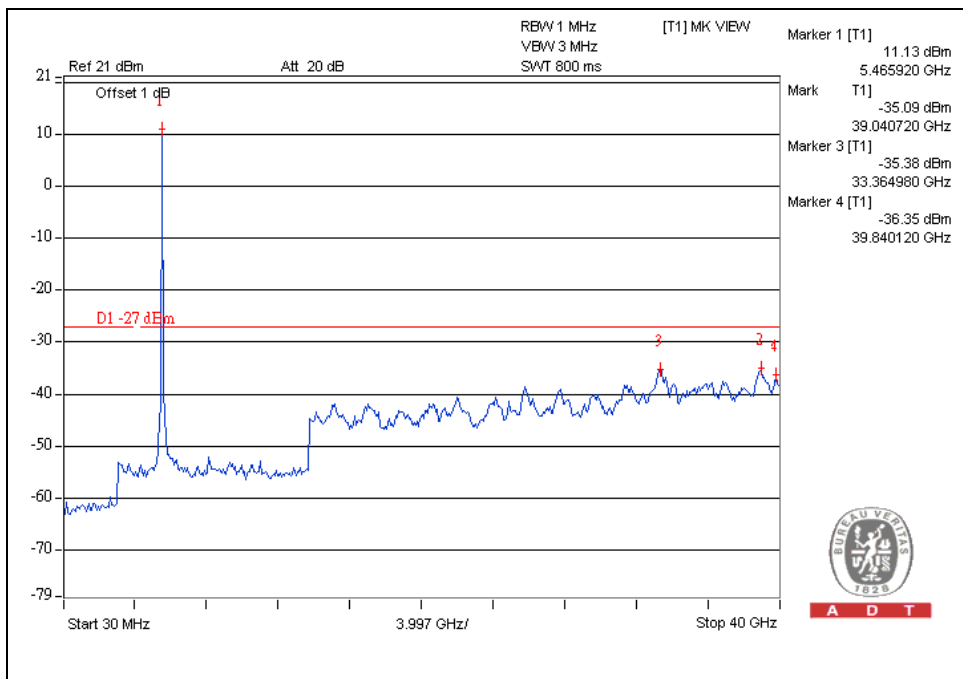
### CH 140





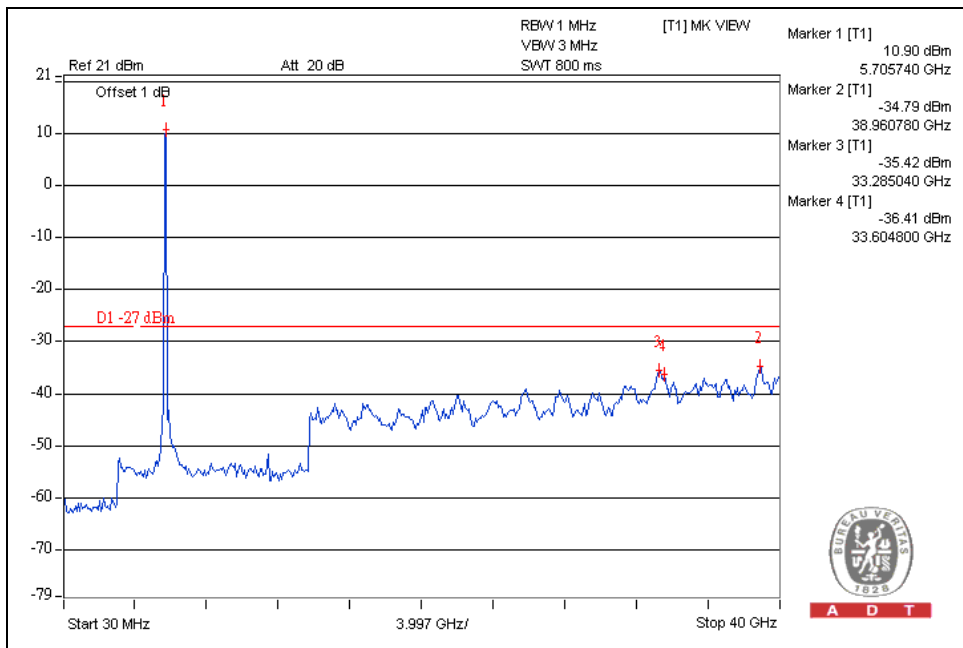
A D T

## CH 100



A D T

## CH 140



A D T

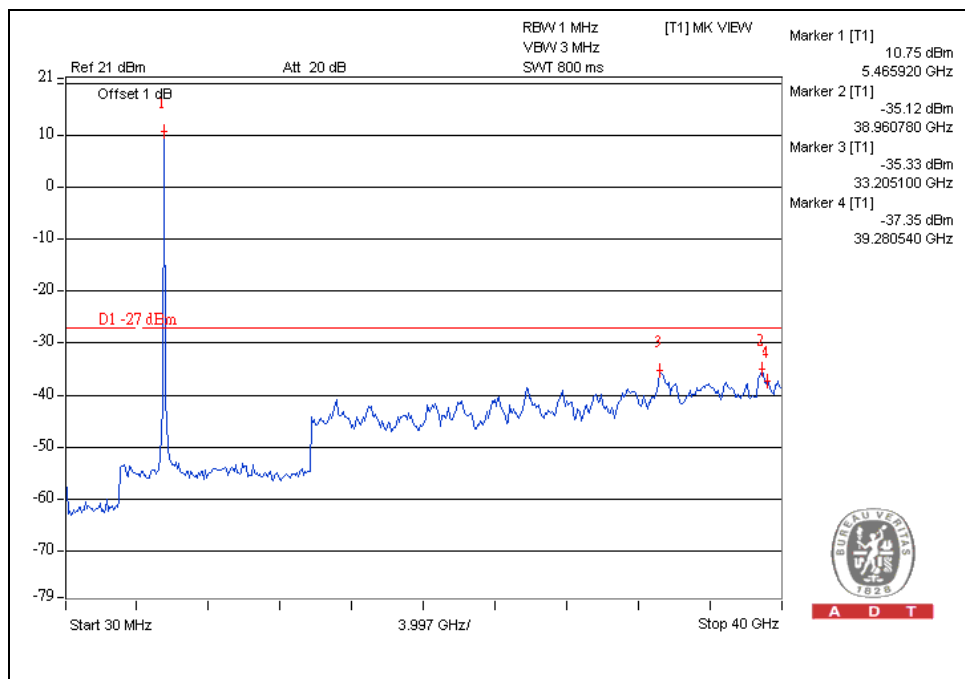
## CH100



---

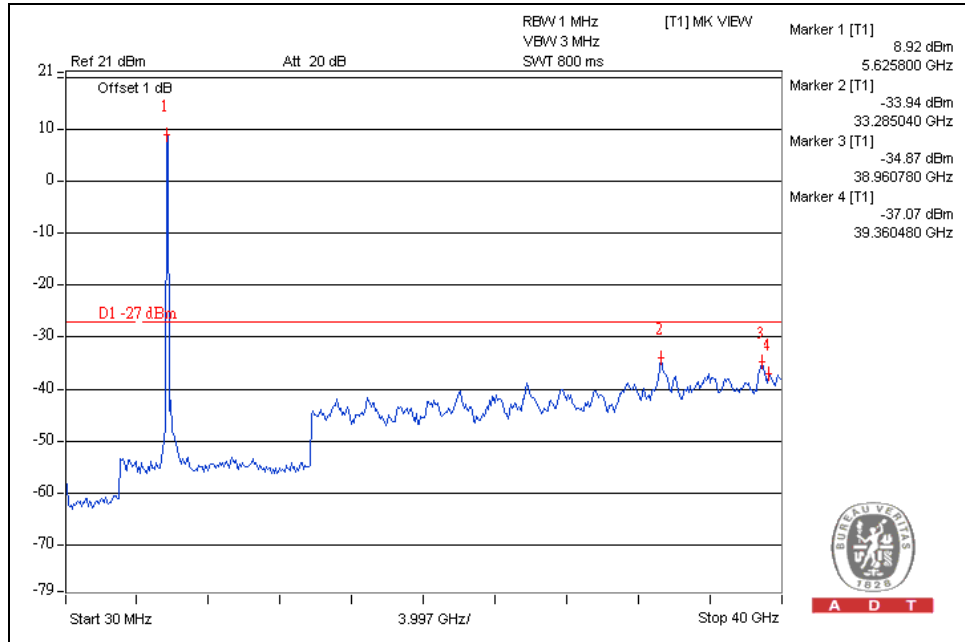


## CH100



A D T

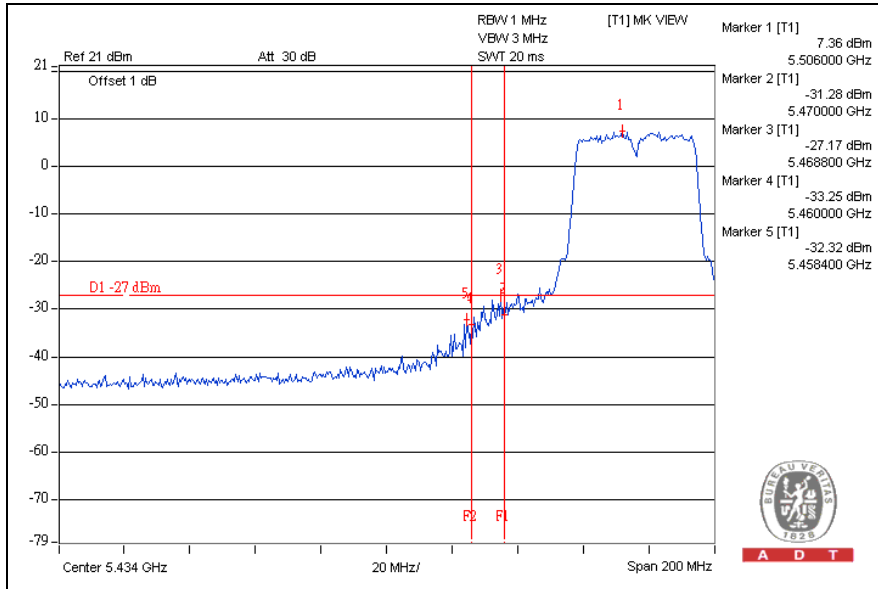
## CH140



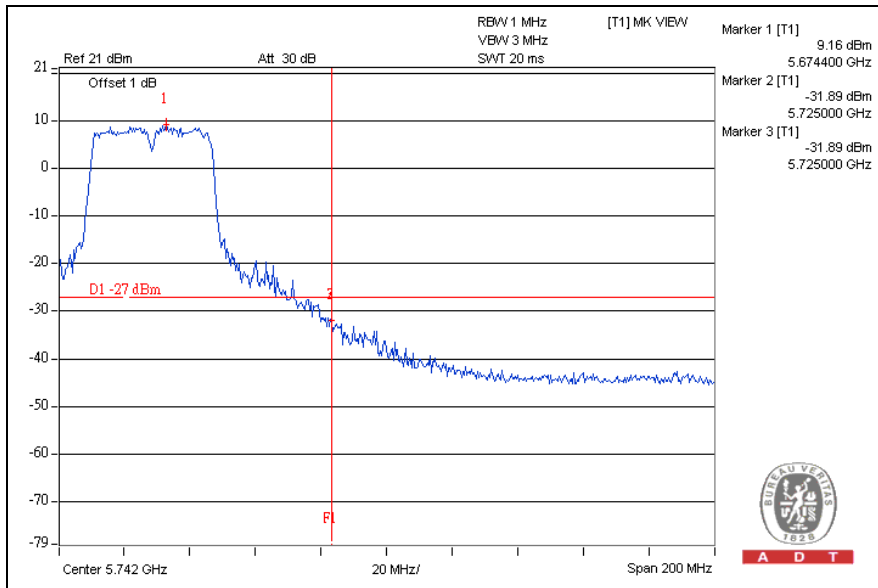
A D T

## DRAFT 802.11n (40MHz) OFDM MODULATION:

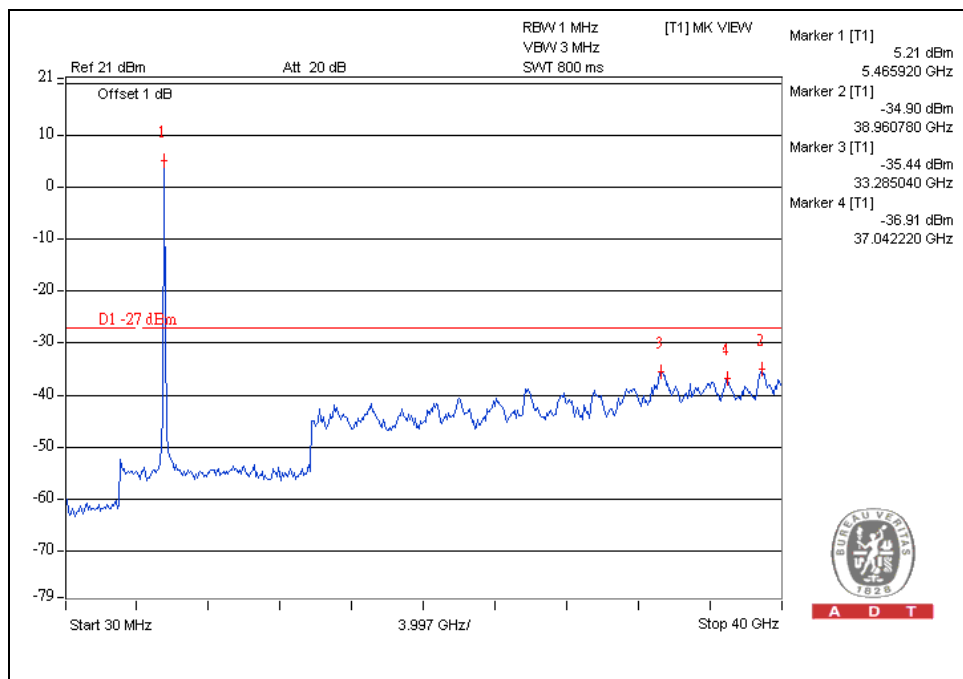
### CH102



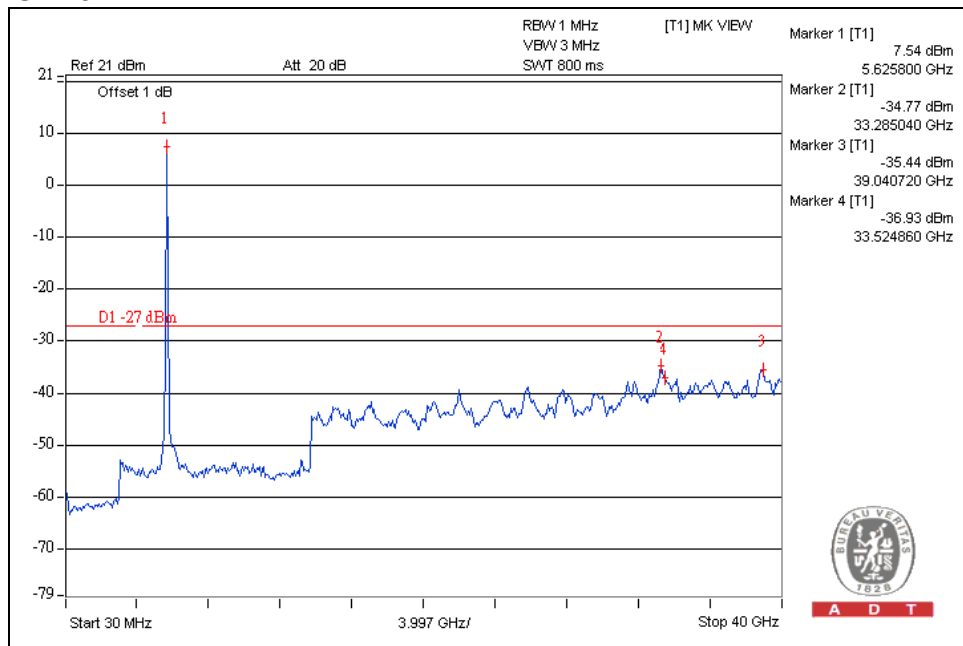
### CH134



## CH102



## CH134



## 4.8 ANTENNA REQUIREMENT

### 4.8.1 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 15.407(a), 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.

### 4.8.2 ANTENNA CONNECTED CONSTRUCTION

There are two antennas provided to this EUT, please refer to the following table:

| Chain    | Antenna Gain             |                        | Antenna Type       | Connector   | Cable Length<br>(External only, if any) |
|----------|--------------------------|------------------------|--------------------|-------------|-----------------------------------------|
|          | For 2.4GHz<br>Gain (dBi) | For 5GHz<br>Gain (dBi) |                    |             |                                         |
| Chain(0) | 2                        | 4                      | Printed Board Type | Hirose U.FL | 680cm(black)                            |
| Chain(1) | 2                        | 4                      | Printed Board Type | Hirose U.FL | 950cm(black)                            |

## 5. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025:

|                    |                      |
|--------------------|----------------------|
| <b>USA</b>         | FCC, NVLAP           |
| <b>Germany</b>     | TUV Rheinland        |
| <b>Japan</b>       | VCCI                 |
| <b>Norway</b>      | NEMKO                |
| <b>Canada</b>      | INDUSTRY CANADA, CSA |
| <b>R.O.C.</b>      | TAF, BSMI, NCC       |
| <b>Netherlands</b> | Telefication         |
| <b>Singapore</b>   | GOST-ASIA (MOU)      |
| <b>Russia</b>      | CERTIS (MOU)         |

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

[www.adt.com.tw/index.5/phtml](http://www.adt.com.tw/index.5/phtml). If you have any comments, please feel free to contact us at the following:

**Linko EMC/RF Lab:**

Tel: 886-2-26052180

Fax: 886-2-26052943

**Hsin Chu EMC/RF Lab:**

Tel: 886-3-5935343

Fax: 886-3-5935342

**Hwa Ya EMC/RF/Safety Telecom Lab:**

Tel: 886-3-3183232

Fax: 886-3-3185050

**Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

The address and road map of all our labs can be found in our web site also



A D T

## **6.APPENDIX-A- Modifications recorders for engineering changes to the eut BY THE LAB**

No any modifications are made to the EUT by the lab during the test.

**---END---**