

# DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 2)

| EUT TEST CONDITION       |                            | MEASUREMENT DETAIL   |                          |
|--------------------------|----------------------------|----------------------|--------------------------|
| CHANNEL                  | Channel 1                  | FREQUENCY RANGE      | 1 ~ 25GHz                |
| MODULATION TYPE          | BPSK                       | INPUT POWER (SYSTEM) | 120Vac, 60 Hz            |
| TRANSFER RATE            | 13.5Mbps                   | DETECTOR FUNCTION    | Peak(PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 18deg. C, 65%RH,<br>971hPa | TESTED BY            | Moris Lin                |

| 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                                                   | 2390.00     | 59.20 PK                | 74.00          | -14.80      | 1.25 H             | 196                  | 27.69            | 31.51                    |
| 1                                                   | 2390.00     | 48.50 AV                | 54.00          | -5.50       | 1.25 H             | 196                  | 16.99            | 31.51                    |
| 2                                                   | *2422.00    | 99.10 PK                |                |             | 1.25 H             | 196                  | 67.49            | 31.61                    |
| 2                                                   | *2422.00    | 88.90 AV                |                |             | 1.25 H             | 196                  | 57.29            | 31.61                    |
| 3                                                   | 3229.00     | 51.70 PK                | 74.00          | -22.30      | 1.08 H             | 352                  | 18.44            | 33.26                    |
| 3                                                   | 3229.00     | 48.10 AV                | 54.00          | -5.90       | 1.08 H             | 352                  | 14.84            | 33.26                    |
| 4                                                   | 4824.00     | 51.20 PK                | 74.00          | -22.80      | 1.12 H             | 349                  | 14.24            | 36.96                    |
| 4                                                   | 4824.00     | 45.50 AV                | 54.00          | -8.50       | 1.12 H             | 349                  | 8.54             | 36.96                    |
| 5                                                   | 7236.00     | 52.00 PK                | 74.00          | -22.00      | 1.24 H             | 58                   | 9.00             | 43.00                    |
| 5                                                   | 7236.00     | 39.00 AV                | 54.00          | -15.00      | 1.24 H             | 58                   | -4.00            | 43.00                    |

| 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                                                 | 2390.00     | 69.00 PK                | 74.00          | -5.00       | 1.06 V             | 356                  | 37.49            | 31.51                    |
| 1                                                 | 2390.00     | 53.70 AV                | 54.00          | -0.30       | 1.06 V             | 356                  | 22.19            | 31.51                    |
| 2                                                 | *2422.00    | 110.70 PK               |                |             | 1.06 V             | 356                  | 79.09            | 31.61                    |
| 2                                                 | *2422.00    | 100.40 AV               |                |             | 1.06 V             | 356                  | 68.79            | 31.61                    |
| 3                                                 | 3229.00     | 47.80 PK                | 74.00          | -26.20      | 1.00 V             | 331                  | 14.54            | 33.26                    |
| 3                                                 | 3229.00     | 45.30 AV                | 54.00          | -8.70       | 1.00 V             | 331                  | 12.04            | 33.26                    |
| 4                                                 | 4844.00     | 50.40 PK                | 74.00          | -23.60      | 1.09 V             | 27                   | 13.36            | 37.04                    |
| 4                                                 | 4844.00     | 44.80 AV                | 54.00          | -9.20       | 1.09 V             | 27                   | 7.76             | 37.04                    |
| 5                                                 | 7266.00     | 51.70 PK                | 74.00          | -22.30      | 1.27 V             | 68                   | 8.68             | 43.02                    |
| 5                                                 | 7266.00     | 38.30 AV                | 54.00          | -15.70      | 1.27 V             | 68                   | -4.72            | 43.02                    |

- 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. The limit value is defined as per 15.247.
  6. “ \* “: Fundamental frequency.

| EUT TEST CONDITION       |                            | MEASUREMENT DETAIL   |                          |
|--------------------------|----------------------------|----------------------|--------------------------|
| CHANNEL                  | Channel 4                  | FREQUENCY RANGE      | 1 ~ 25GHz                |
| MODULATION TYPE          | BPSK                       | INPUT POWER (SYSTEM) | 120Vac, 60 Hz            |
| TRANSFER RATE            | 13.5Mbps                   | DETECTOR FUNCTION    | Peak(PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 18deg. C, 65%RH,<br>971hPa | TESTED BY            | Moris Lin                |

| 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                                                   | *2437.00    | 99.70 PK                |                |             | 1.22 H             | 198                  | 68.04            | 31.66                    |
| 1                                                   | *2437.00    | 89.40 AV                |                |             | 1.22 H             | 198                  | 57.74            | 31.66                    |
| 2                                                   | 3249.00     | 51.80 PK                | 74.00          | -22.20      | 1.06 H             | 347                  | 18.48            | 33.32                    |
| 2                                                   | 3249.00     | 48.80 AV                | 54.00          | -5.20       | 1.06 H             | 347                  | 15.48            | 33.32                    |
| 3                                                   | 4874.00     | 51.40 PK                | 74.00          | -22.60      | 1.09 H             | 357                  | 14.25            | 37.15                    |
| 3                                                   | 4874.00     | 45.80 AV                | 54.00          | -8.20       | 1.09 H             | 357                  | 8.65             | 37.15                    |
| 4                                                   | 7311.00     | 52.30 PK                | 74.00          | -21.70      | 1.15 H             | 43                   | 9.21             | 43.09                    |
| 4                                                   | 7311.00     | 39.10 AV                | 54.00          | -14.90      | 1.15 H             | 43                   | -3.99            | 43.09                    |

| 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                                                 | *2437.00    | 111.20 PK               |                |             | 1.10 V             | 347                  | 79.54            | 31.66                    |
| 1                                                 | *2437.00    | 100.50 AV               |                |             | 1.10 V             | 347                  | 68.84            | 31.66                    |
| 2                                                 | 3249.00     | 50.90 PK                | 74.00          | -23.10      | 1.00 V             | 327                  | 17.58            | 33.32                    |
| 2                                                 | 3249.00     | 47.70 AV                | 54.00          | -6.30       | 1.00 V             | 327                  | 14.38            | 33.32                    |
| 3                                                 | 4874.00     | 50.80 PK                | 74.00          | -23.20      | 1.07 V             | 21                   | 13.65            | 37.15                    |
| 3                                                 | 4874.00     | 45.10 AV                | 54.00          | -8.90       | 1.07 V             | 21                   | 7.95             | 37.15                    |
| 4                                                 | 7311.00     | 52.10 PK                | 74.00          | -21.90      | 1.24 V             | 63                   | 9.01             | 43.09                    |
| 4                                                 | 7311.00     | 38.80 AV                | 54.00          | -15.20      | 1.24 V             | 63                   | -4.29            | 43.09                    |

**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. The limit value is defined as per 15.247.
6. “ \* “: Fundamental frequency.

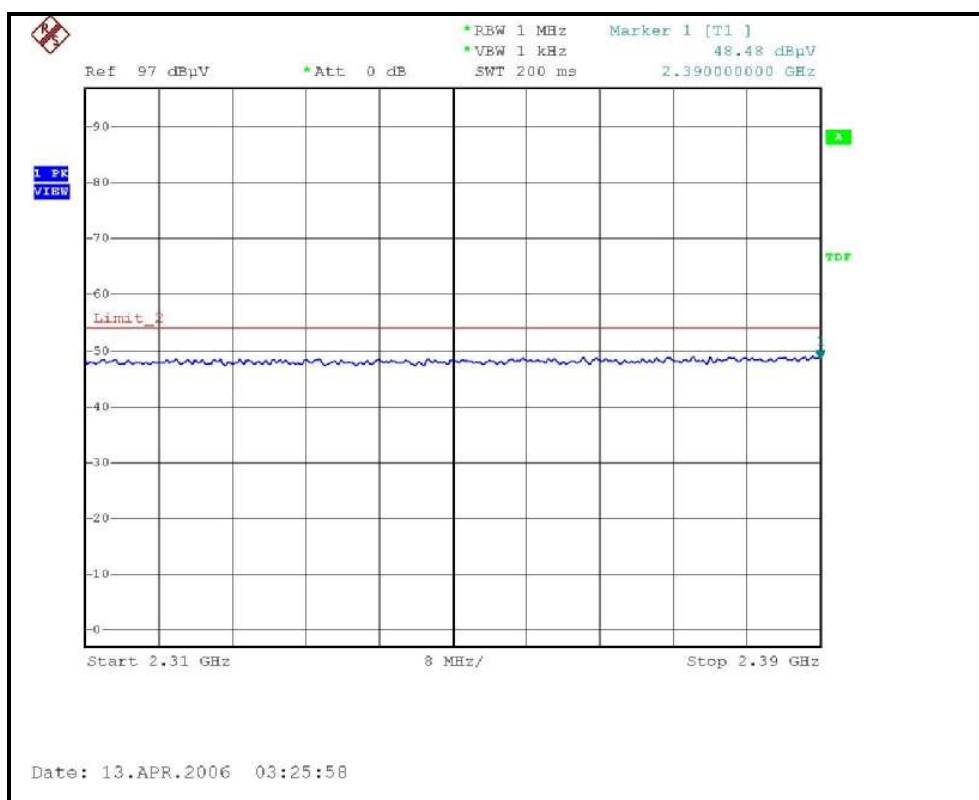
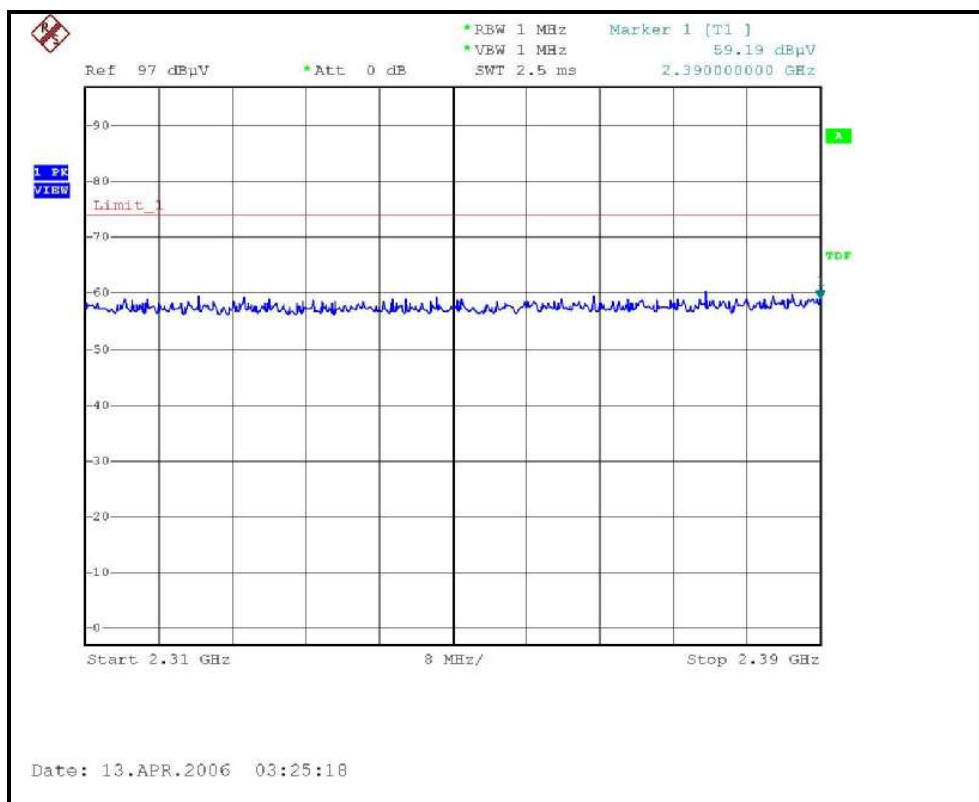
| EUT TEST CONDITION       |                            | MEASUREMENT DETAIL   |                          |
|--------------------------|----------------------------|----------------------|--------------------------|
| CHANNEL                  | Channel 7                  | FREQUENCY RANGE      | 1 ~ 25GHz                |
| MODULATION TYPE          | BPSK                       | INPUT POWER (SYSTEM) | 120Vac, 60 Hz            |
| TRANSFER RATE            | 13.5Mbps                   | DETECTOR FUNCTION    | Peak(PK)<br>Average (AV) |
| ENVIRONMENTAL CONDITIONS | 18deg. C, 65%RH,<br>971hPa | TESTED BY            | Moris Lin                |

| 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                                                   | *2462.00    | 97.90 PK                |                |             | 1.24 H             | 197                  | 66.16            | 31.74                    |
| 1                                                   | *2462.00    | 87.80 AV                |                |             | 1.24 H             | 197                  | 56.06            | 31.74                    |
| 2                                                   | 2483.50     | 59.70 PK                | 74.00          | -14.30      | 1.24 H             | 197                  | 27.89            | 31.81                    |
| 2                                                   | 2483.50     | 49.50 AV                | 54.00          | -4.50       | 1.24 H             | 197                  | 17.69            | 31.81                    |
| 3                                                   | 3269.00     | 49.80 PK                | 74.00          | -24.20      | 1.04 H             | 353                  | 16.42            | 33.38                    |
| 3                                                   | 3269.00     | 47.60 AV                | 54.00          | -6.40       | 1.04 H             | 353                  | 14.22            | 33.38                    |
| 4                                                   | 4904.00     | 50.30 PK                | 74.00          | -23.70      | 1.13 H             | 347                  | 13.04            | 37.26                    |
| 4                                                   | 4904.00     | 44.90 AV                | 54.00          | -9.10       | 1.13 H             | 347                  | 7.64             | 37.26                    |
| 5                                                   | 7386.00     | 51.40 PK                | 74.00          | -22.60      | 1.17 H             | 62                   | 8.02             | 43.38                    |
| 5                                                   | 7386.00     | 38.20 AV                | 54.00          | -15.80      | 1.17 H             | 62                   | -5.18            | 43.38                    |

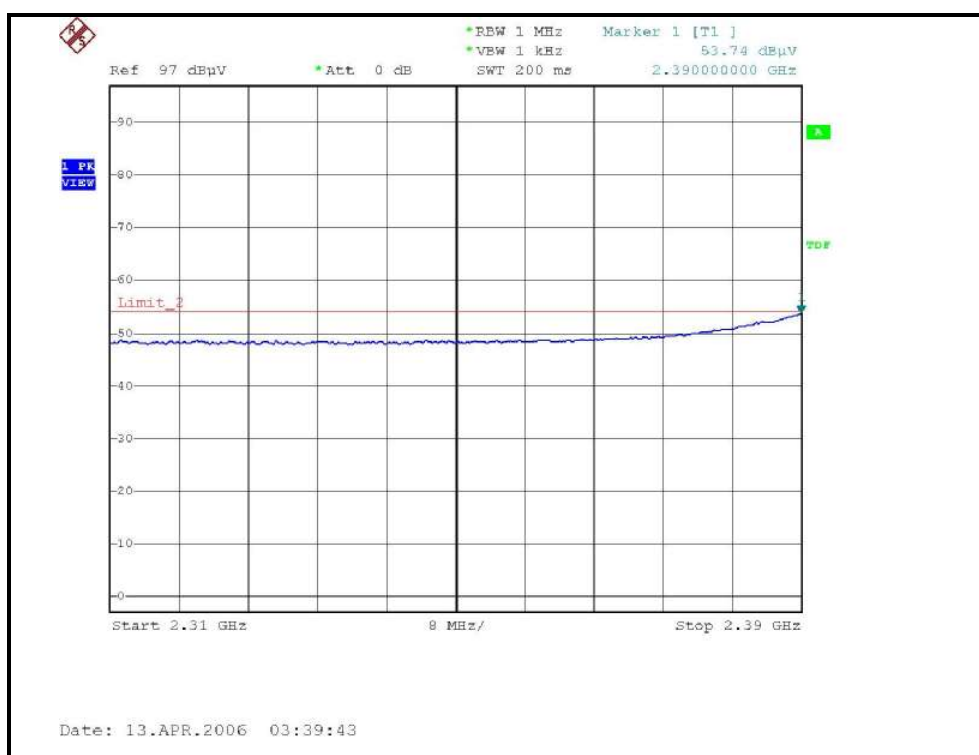
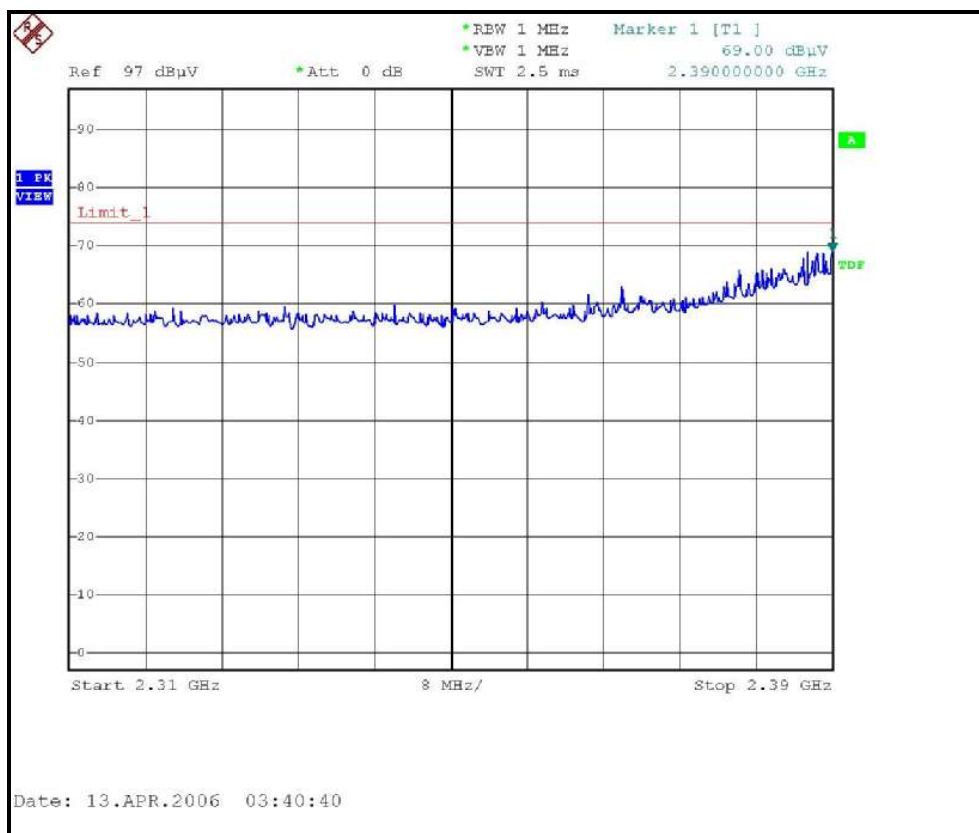
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |             |                         |                |             |                    |                      |                  |                          |
|---------------------------------------------------|-------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 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                                                 | *2452.00    | 110.40 PK               |                |             | 1.07 V             | 344                  | 78.69            | 31.71                    |
| 1                                                 | *2452.00    | 99.90 AV                |                |             | 1.07 V             | 344                  | 68.19            | 31.71                    |
| 2                                                 | 2483.50     | 65.20 PK                | 74.00          | -8.80       | 1.07 V             | 344                  | 33.39            | 31.81                    |
| 2                                                 | 2483.50     | 53.70 AV                | 54.00          | -0.30       | 1.07 V             | 344                  | 21.89            | 31.81                    |
| 3                                                 | 3269.00     | 49.40 PK                | 74.00          | -24.60      | 1.06 V             | 322                  | 16.02            | 33.38                    |
| 3                                                 | 3269.00     | 47.10 AV                | 54.00          | -6.90       | 1.06 V             | 322                  | 13.72            | 33.38                    |
| 4                                                 | 4904.00     | 50.10 PK                | 74.00          | -23.90      | 1.05 V             | 33                   | 12.84            | 37.26                    |
| 4                                                 | 4904.00     | 44.60 AV                | 54.00          | -9.40       | 1.05 V             | 33                   | 7.34             | 37.26                    |
| 5                                                 | 7356.00     | 51.20 PK                | 74.00          | -22.80      | 1.21 V             | 74                   | 7.94             | 43.26                    |
| 5                                                 | 7356.00     | 37.90 AV                | 54.00          | -16.10      | 1.21 V             | 74                   | -5.36            | 43.26                    |

**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. The limit value is defined as per 15.247.  
 6. “ \* ”: Fundamental frequency.

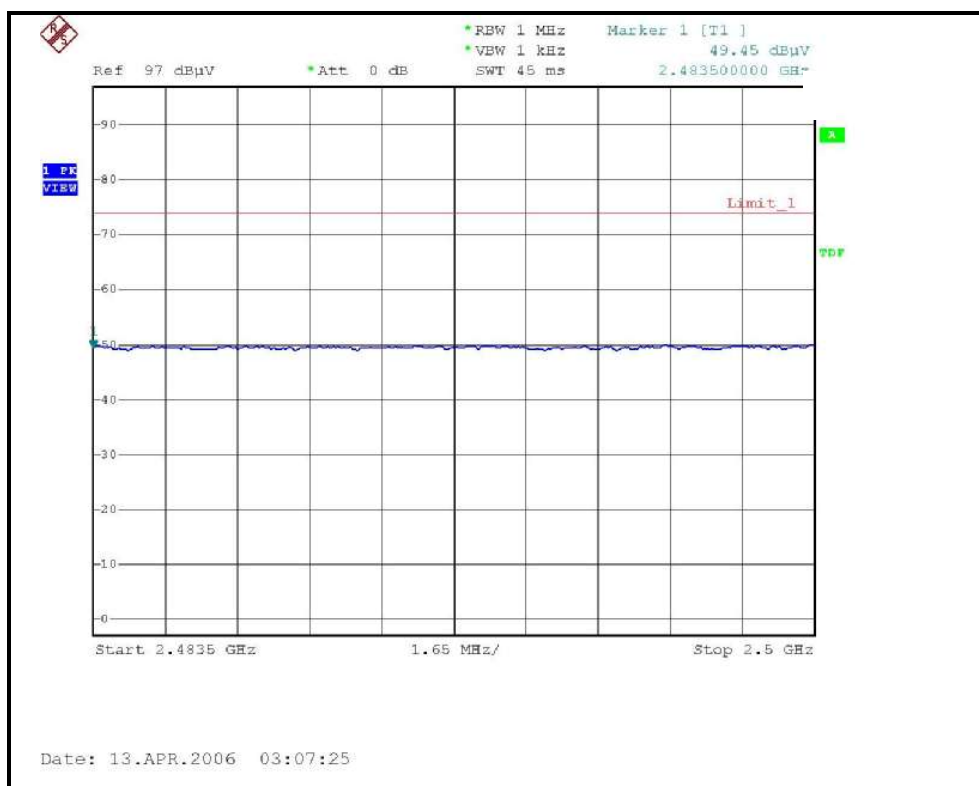
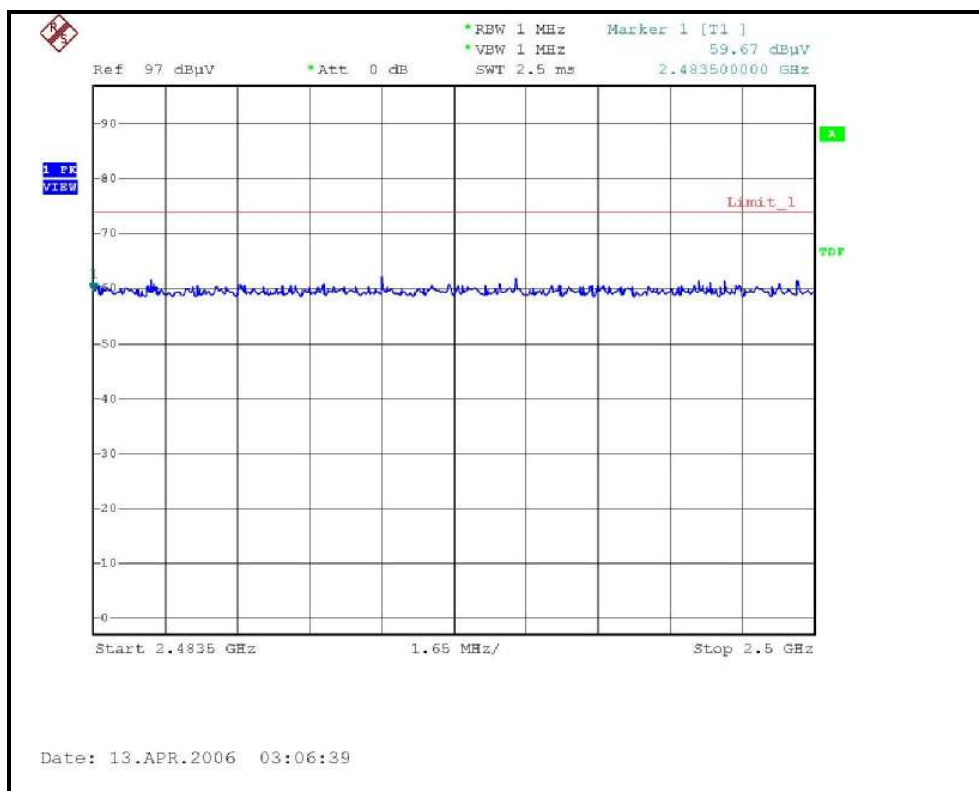
# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, HORIZONTAL )



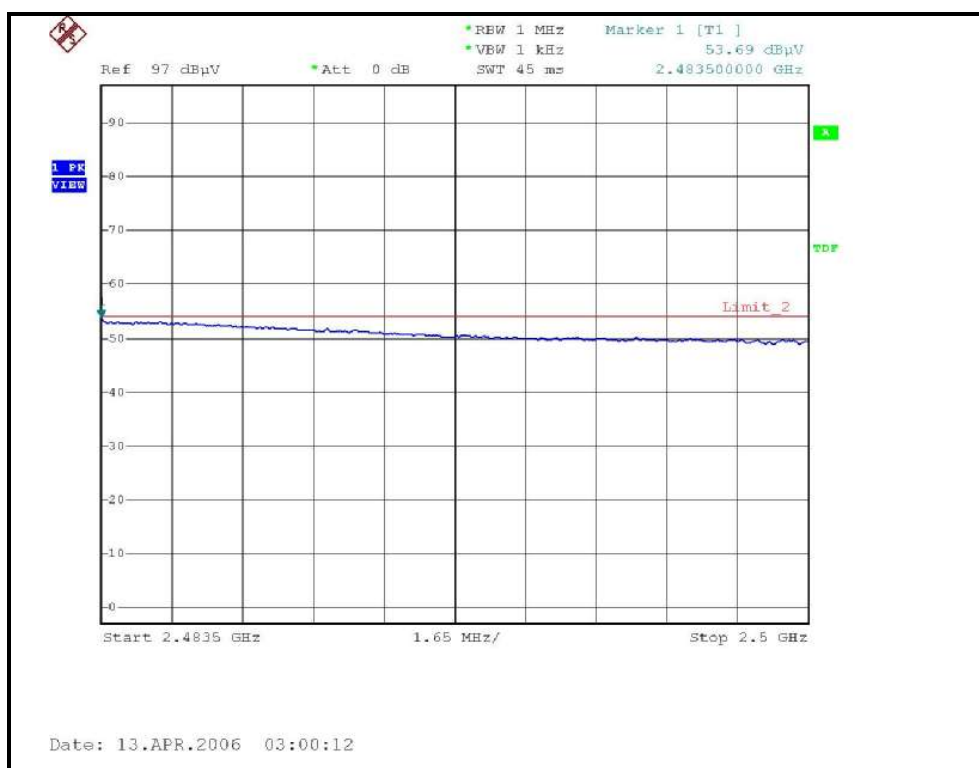
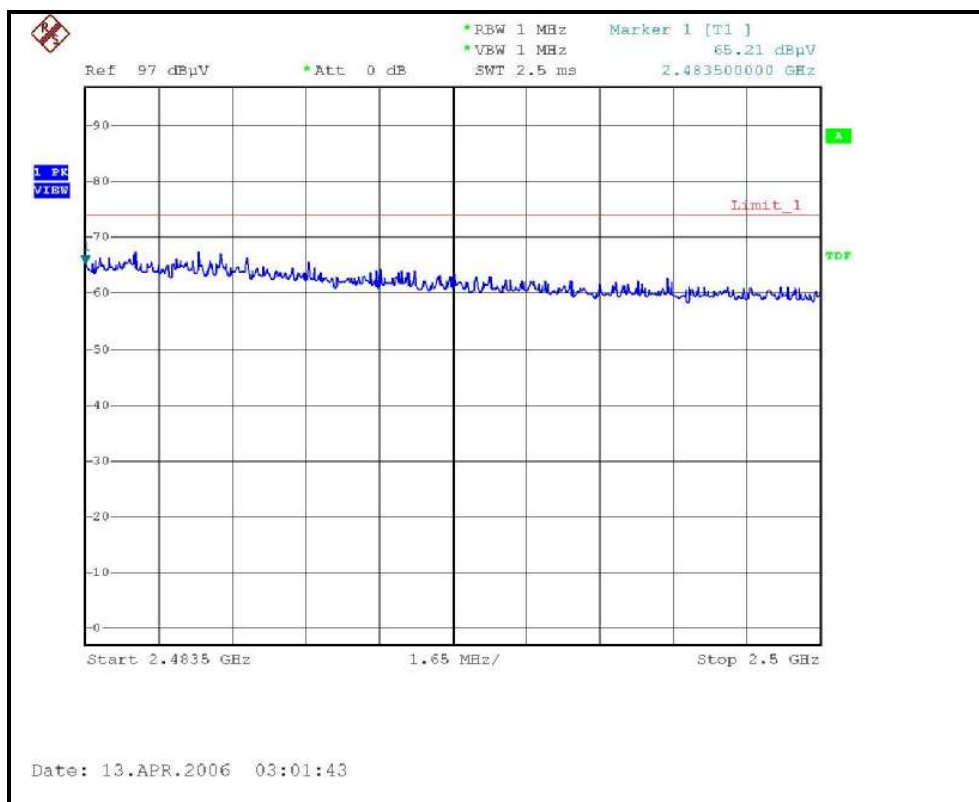
# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, VERTICAL )



# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH7, HORIZONTAL )



# RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH7, VERTICAL )



### 4.3 6dB BANDWIDTH MEASUREMENT

#### 4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

#### 4.3.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100036     | Nov. 23, 2006    |

**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

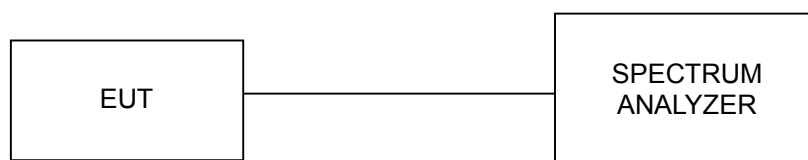
#### 4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

#### 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 lowest, middle and highest channel frequencies individually.

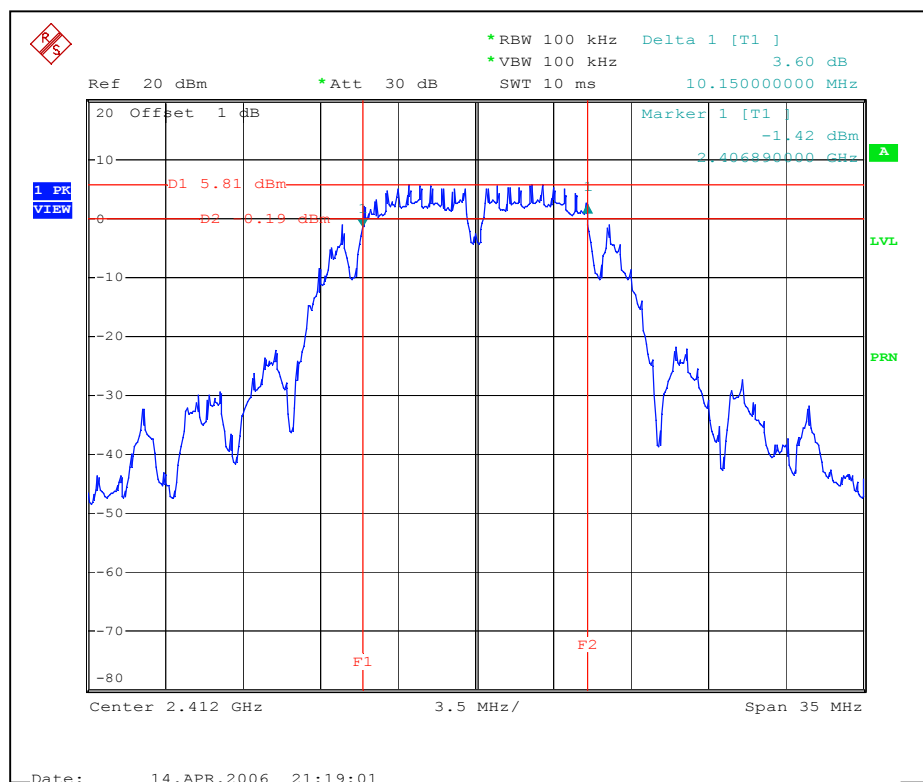
#### 4.3.7 TEST RESULTS

##### 802.11b DSSS MODULATION:

|                      |               |                          |                        |
|----------------------|---------------|--------------------------|------------------------|
| MODULATION TYPE      | DBPSK         | TRANSFER RATE            | 1Mbps                  |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 20deg.C, 60%RH, 971hPa |
| TESTED BY            | Wen Yu        |                          |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------------------|-------------|
| 1       | 2412                    | 10.15               | 0.5                 | PASS        |
| 6       | 2437                    | 10.15               | 0.5                 | PASS        |
| 11      | 2462                    | 10.15               | 0.5                 | PASS        |

CH1



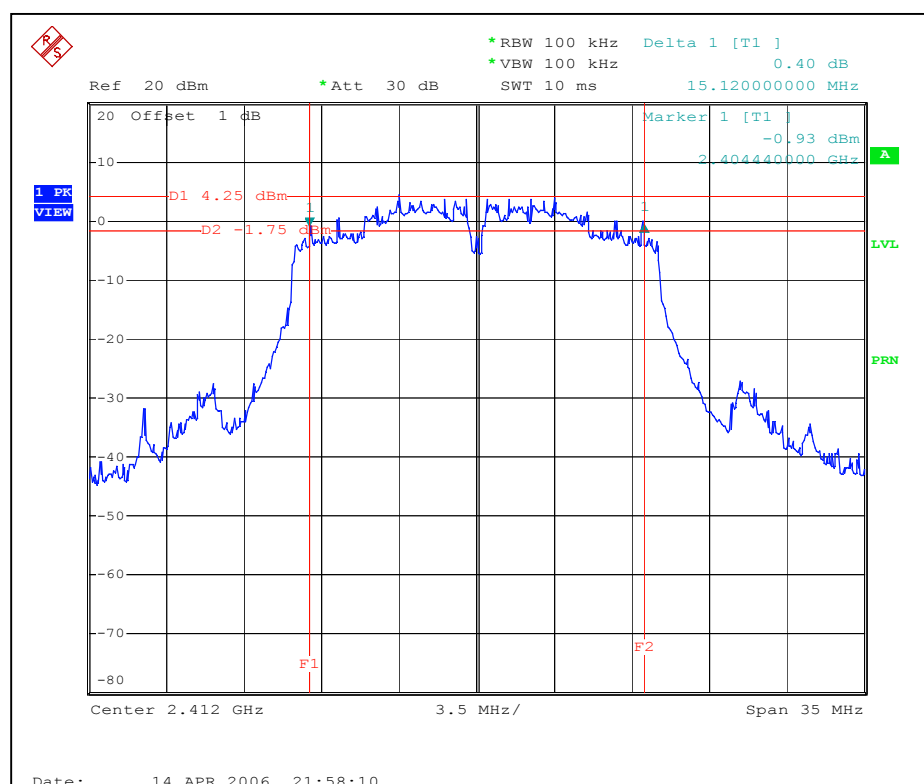


## 802.11g OFDM MODULATION:

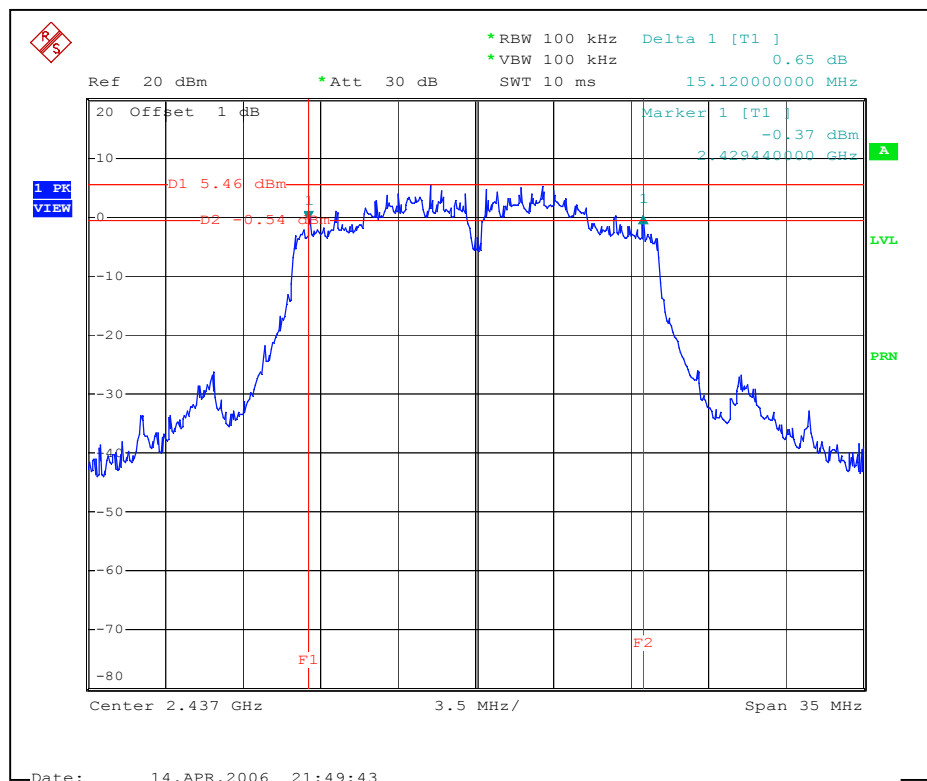
|                      |               |                          |                        |
|----------------------|---------------|--------------------------|------------------------|
| MODULATION TYPE      | BPSK          | TRANSFER RATE            | 6Mbps                  |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 20deg.C, 60%RH, 971hPa |
| TESTED BY            | Wen Yu        |                          |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------------------|-------------|
| 1       | 2412                    | 15.12               | 0.5                 | PASS        |
| 6       | 2437                    | 15.12               | 0.5                 | PASS        |
| 11      | 2462                    | 15.12               | 0.5                 | PASS        |

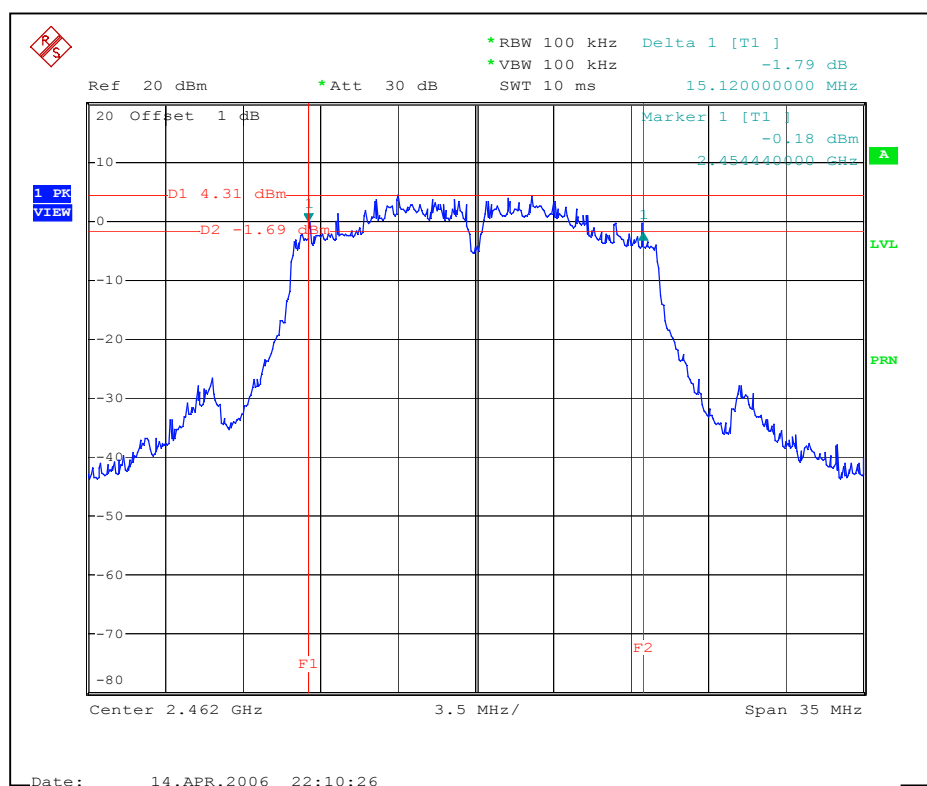
## CH1



## CH6



## CH11

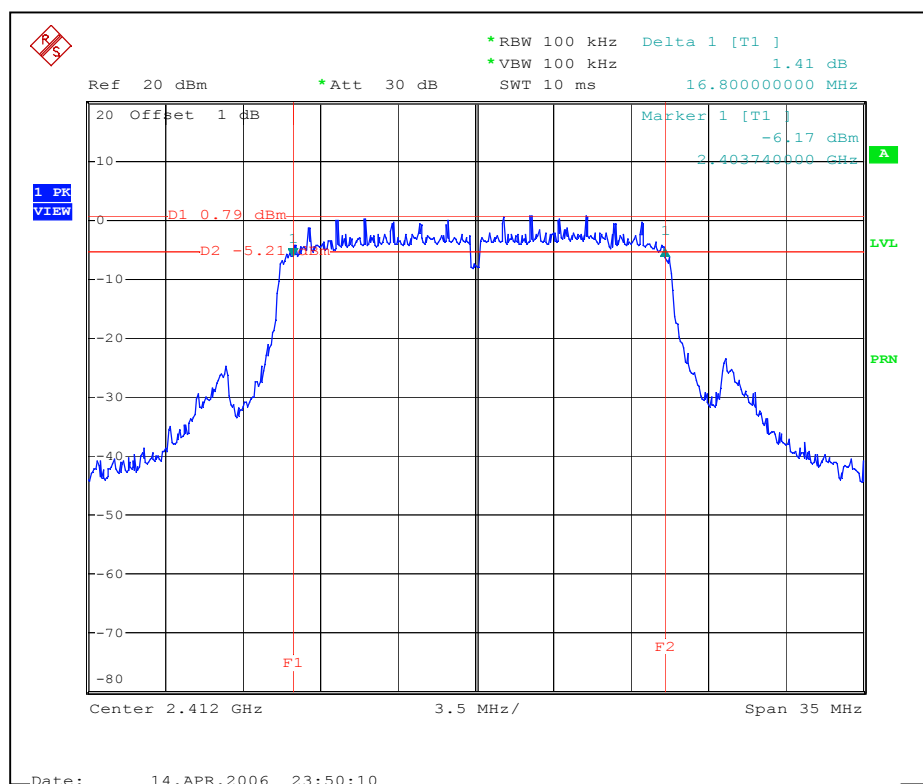


### DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 3)

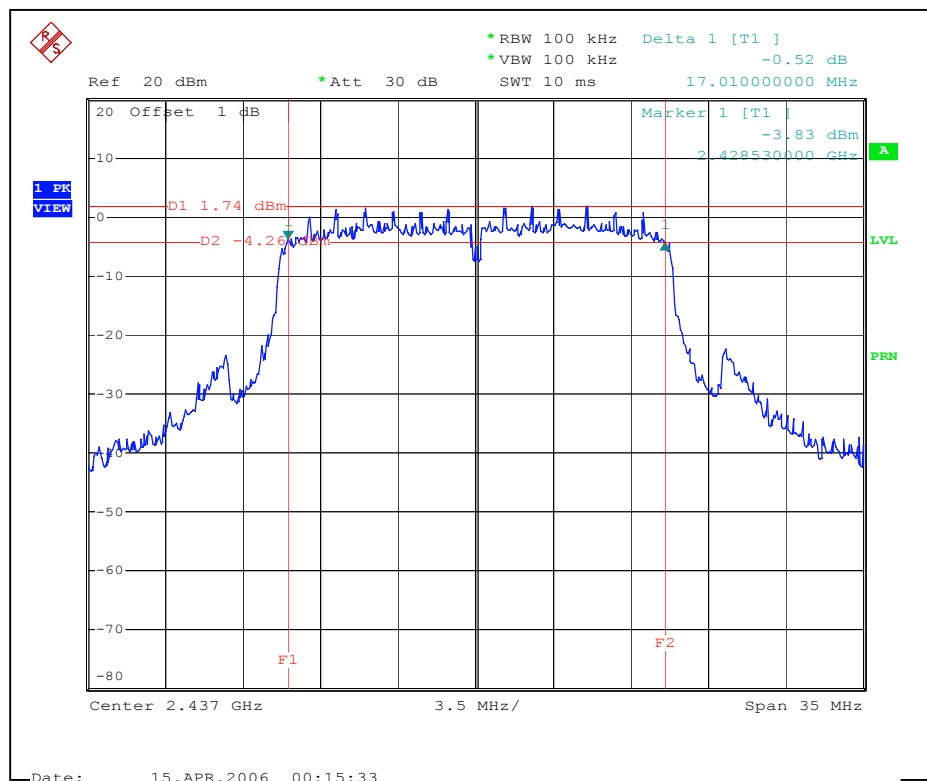
|                      |               |                          |                        |
|----------------------|---------------|--------------------------|------------------------|
| MODULATION TYPE      | BPSK          | TRANSFER RATE            | 6.5Mbps                |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 20deg.C, 60%RH, 971hPa |
| TESTED BY            | Wen Yu        |                          |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) |         | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------|---------------------|-------------|
|         |                         | CHAIN 0             | CHAIN 1 |                     |             |
| 1       | 2412                    | 16.80               | 17.15   | 0.5                 | PASS        |
| 6       | 2437                    | 17.01               | 16.94   | 0.5                 | PASS        |
| 11      | 2462                    | 17.08               | 17.01   | 0.5                 | PASS        |

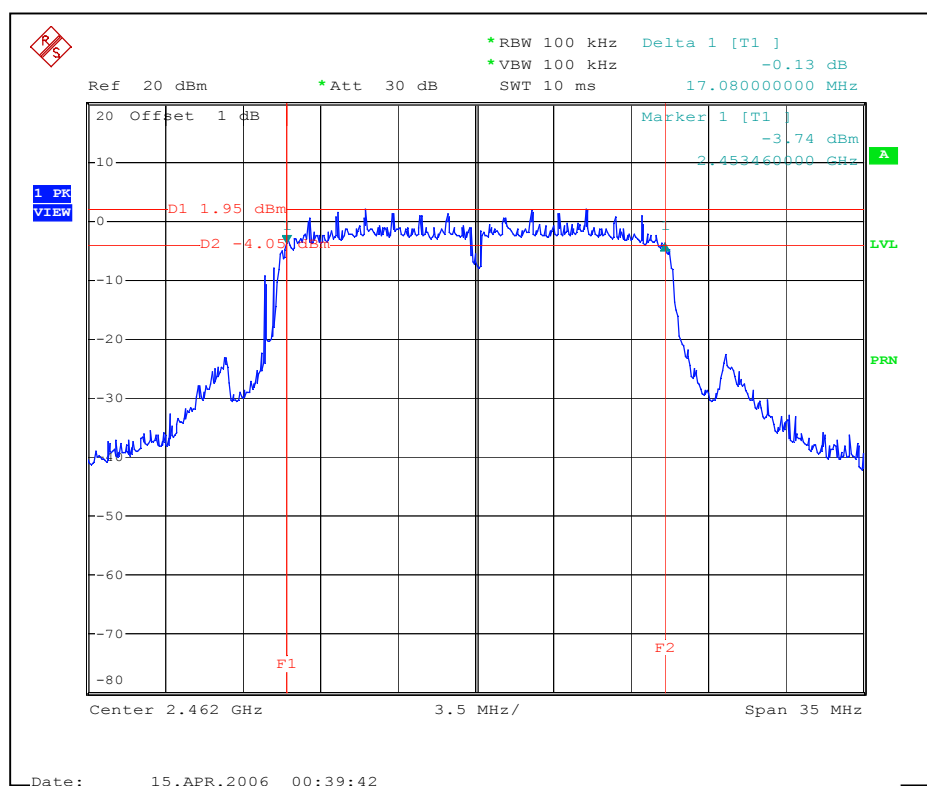
FOR CHAIN 0: CH1



## CH6

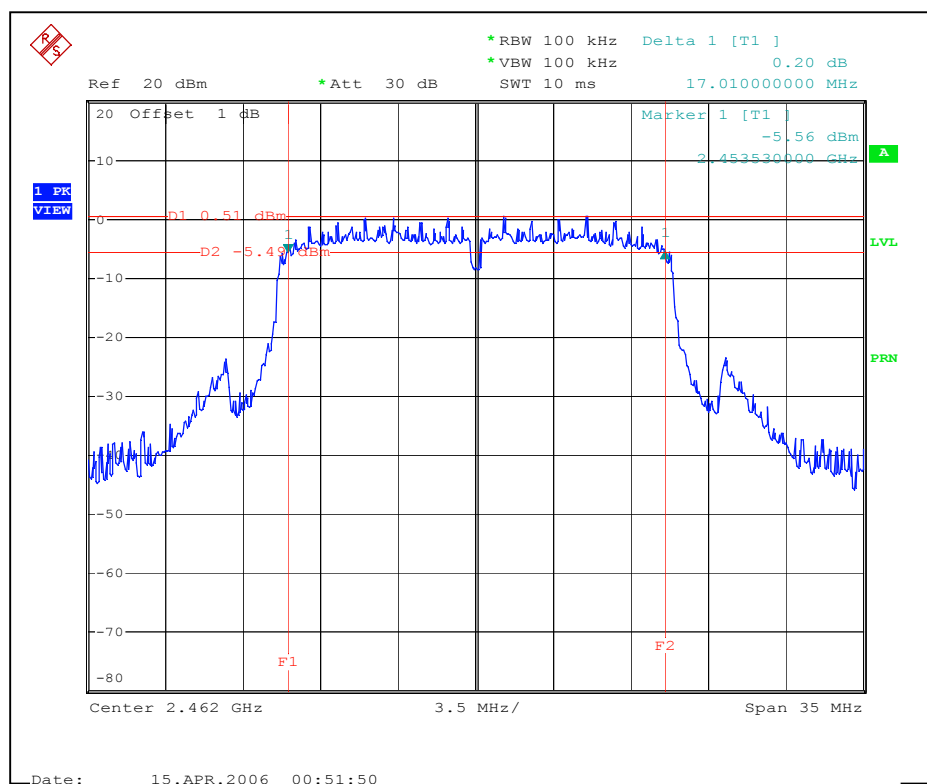


## CH11





CH11

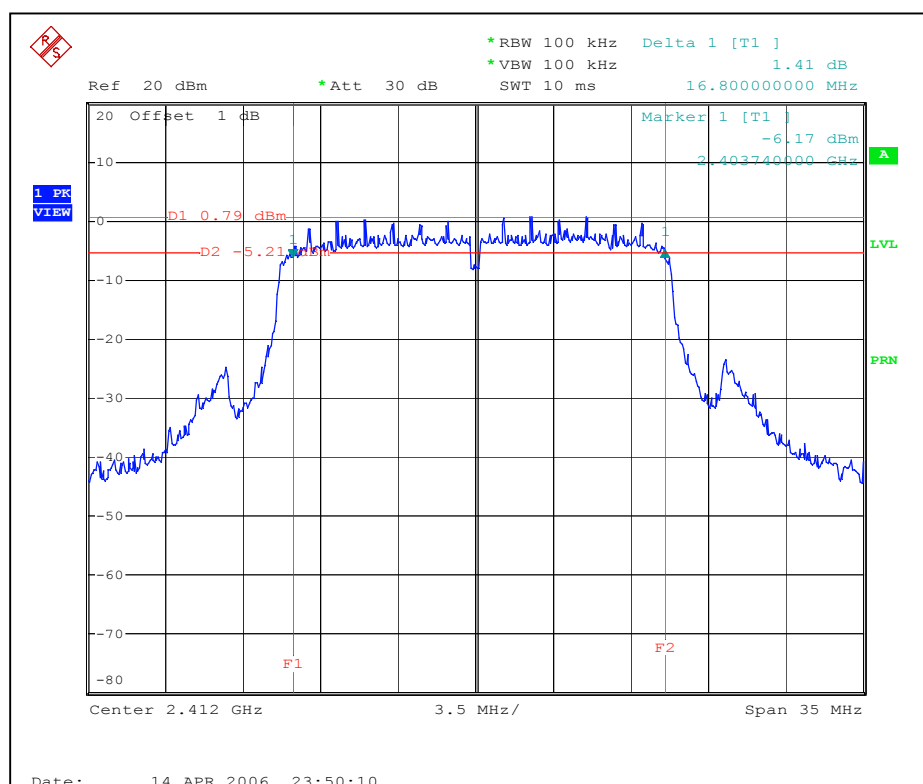


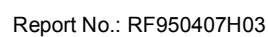
### DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 2)

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6.5Mbps                |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) |         | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------|---------------------|-------------|
|         |                         | CHAIN 0             | CHAIN 1 |                     |             |
| 1       | 2412                    | 16.80               | 16.52   | 0.5                 | PASS        |
| 6       | 2437                    | 17.01               | 16.45   | 0.5                 | PASS        |
| 11      | 2462                    | 17.08               | 16.52   | 0.5                 | PASS        |

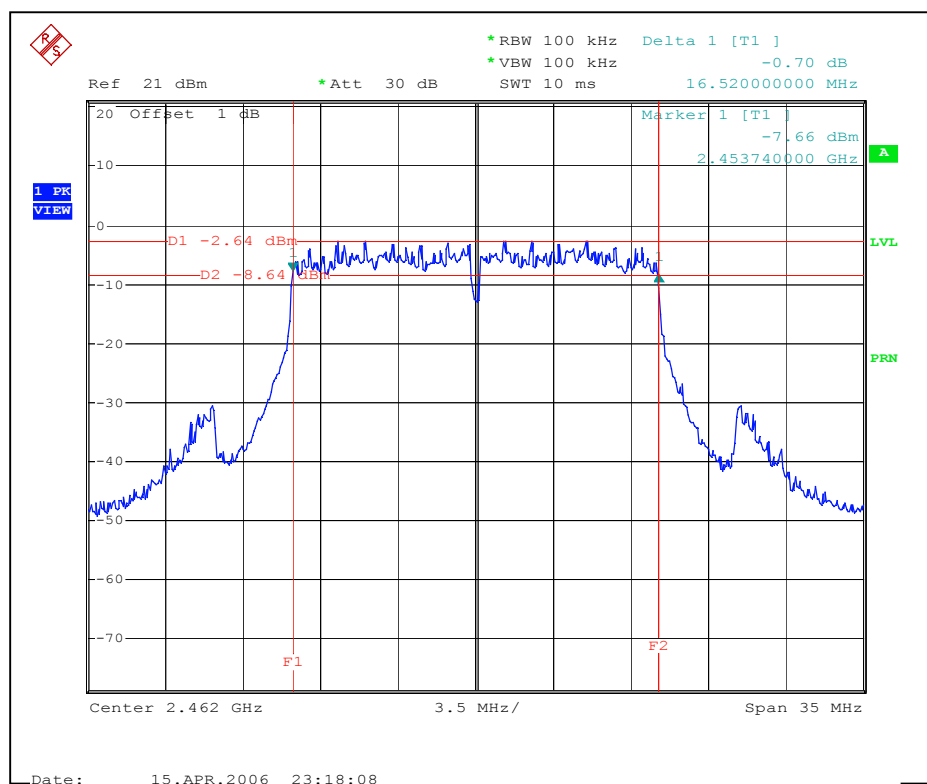
FOR CHAIN 0: CH1







CH11

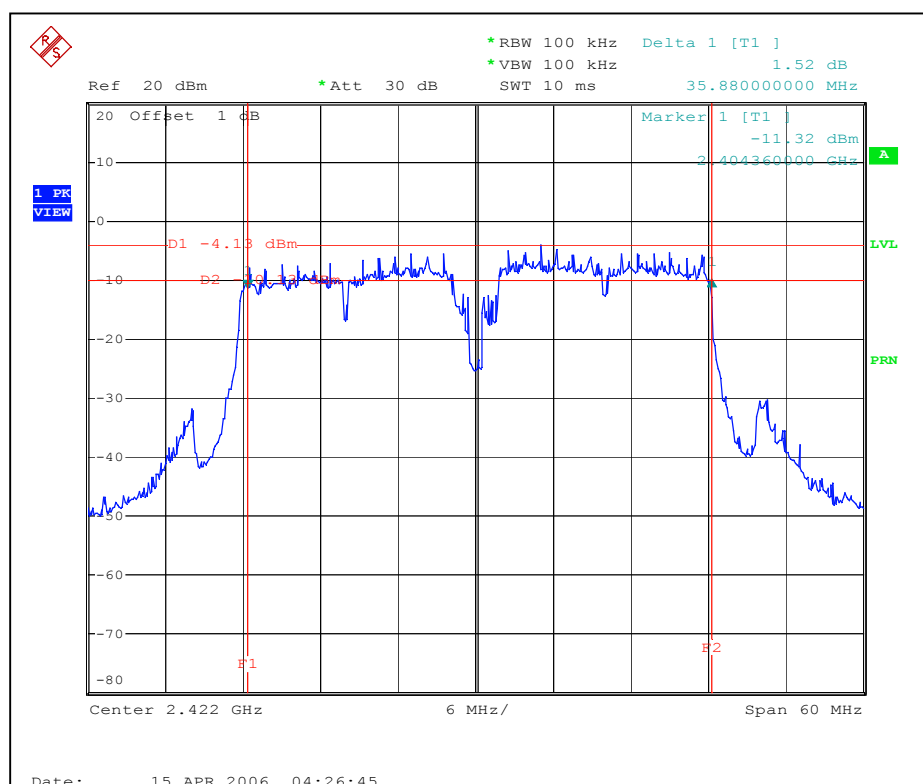


### DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 3)

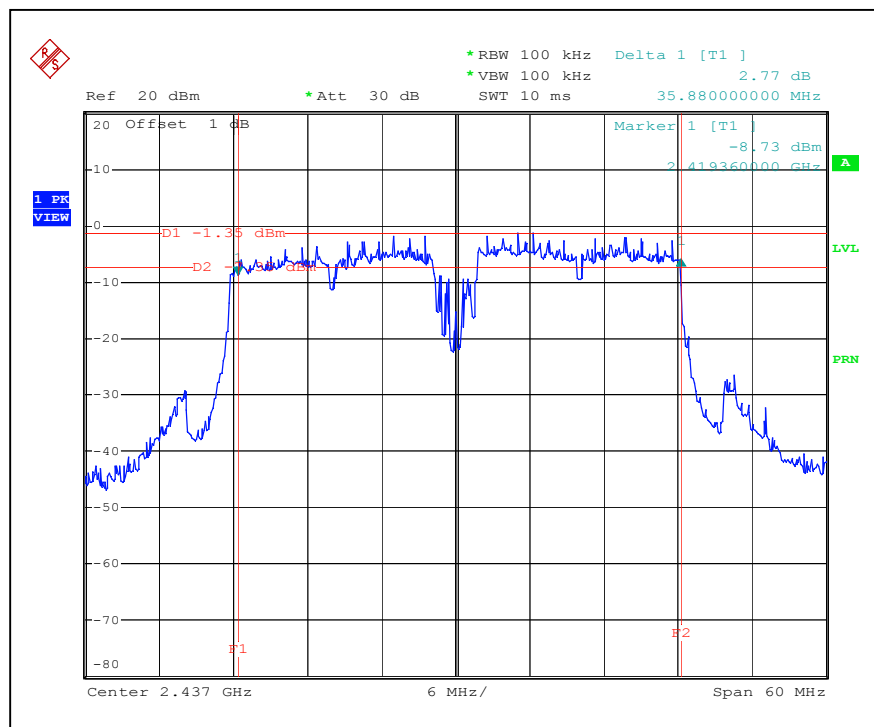
|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 13.5Mbps               |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) |         | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------|---------------------|-------------|
|         |                         | CHAIN 0             | CHAIN 1 |                     |             |
| 1       | 2422                    | 35.88               | 36.00   | 0.5                 | PASS        |
| 4       | 2437                    | 35.88               | 35.88   | 0.5                 | PASS        |
| 7       | 2452                    | 36.12               | 36.12   | 0.5                 | PASS        |

FOR CHAIN 0: CH1

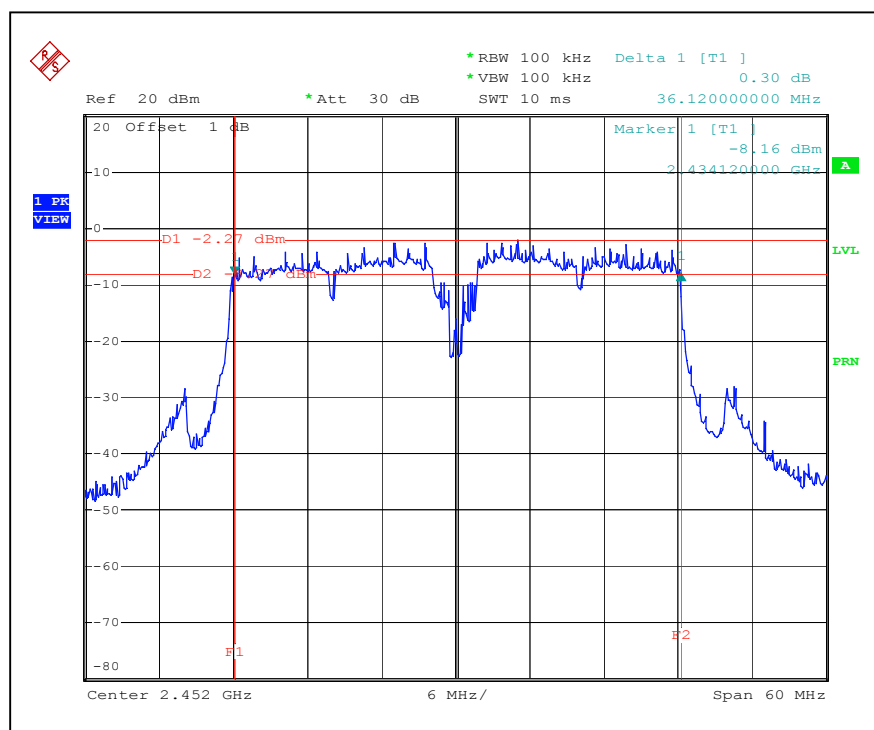


# CH4



Date: 15.APR.2006 05:04:59

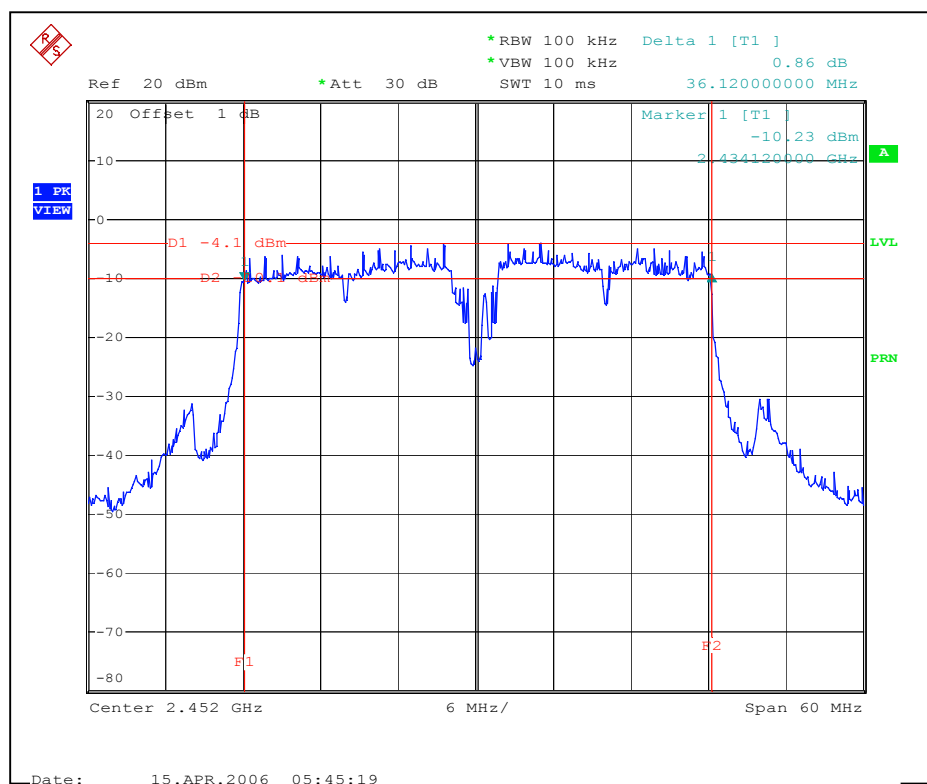
# CH7



Date: 15.APR.2006 05:33:49



CH7

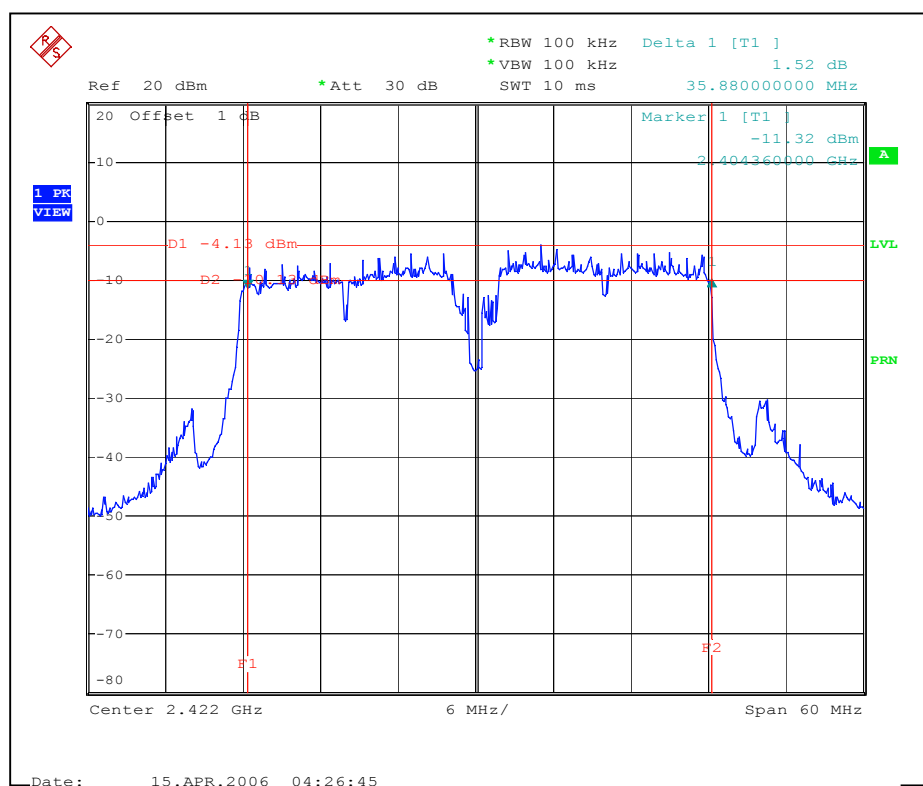


### DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 2)

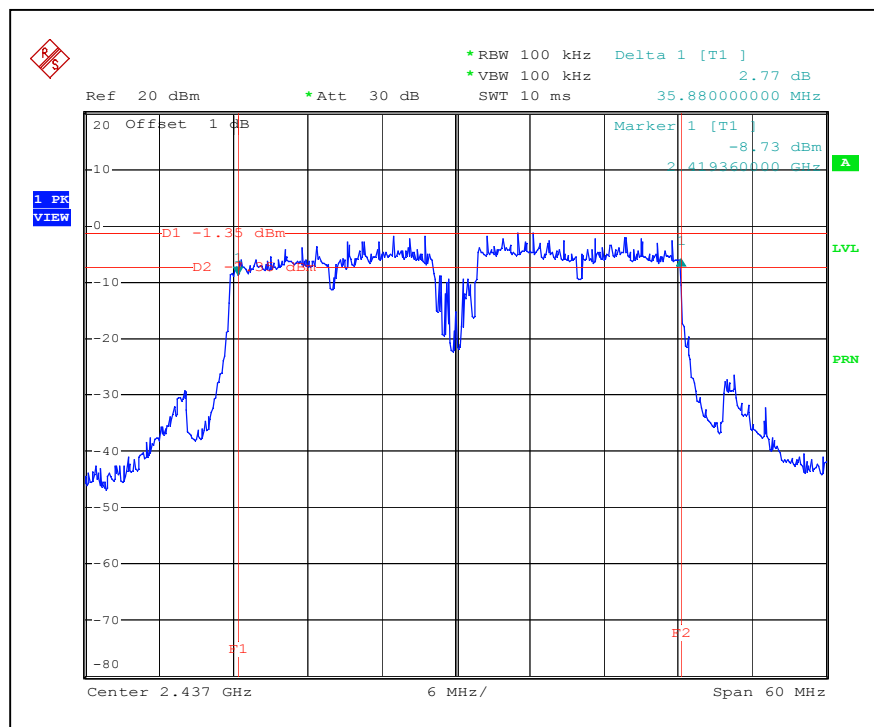
|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 13.5Mbps               |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6dB BANDWIDTH (MHz) |         | MINIMUM LIMIT (MHz) | PASS / FAIL |
|---------|-------------------------|---------------------|---------|---------------------|-------------|
|         |                         | CHAIN 0             | CHAIN 1 |                     |             |
| 1       | 2422                    | 35.88               | 36.0    | 0.5                 | PASS        |
| 4       | 2437                    | 35.88               | 36.0    | 0.5                 | PASS        |
| 7       | 2452                    | 36.12               | 36.12   | 0.5                 | PASS        |

FOR CHAIN 0: CH1

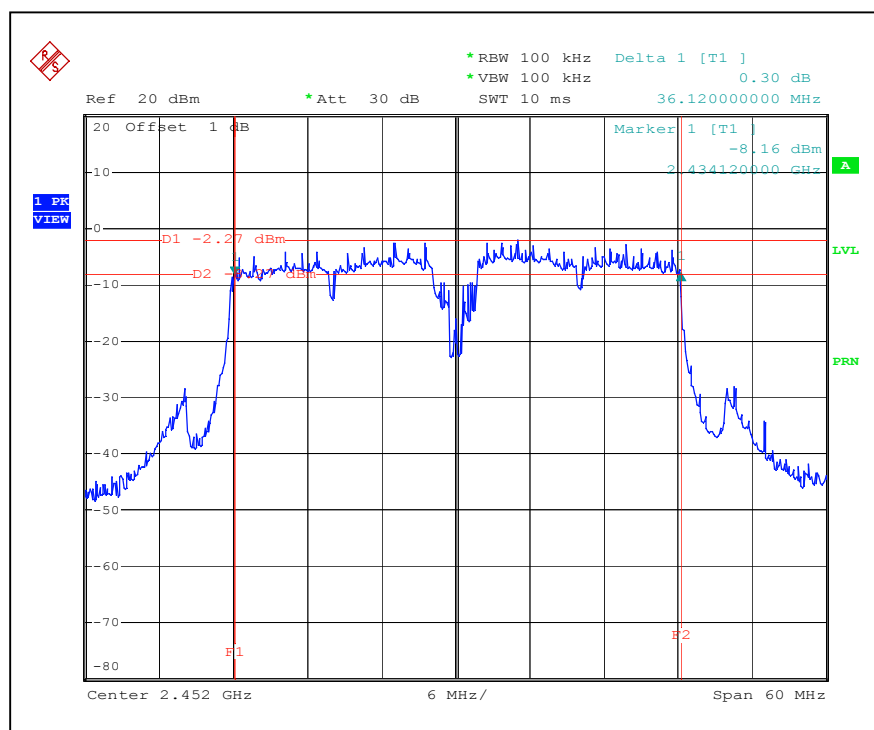


# CH4



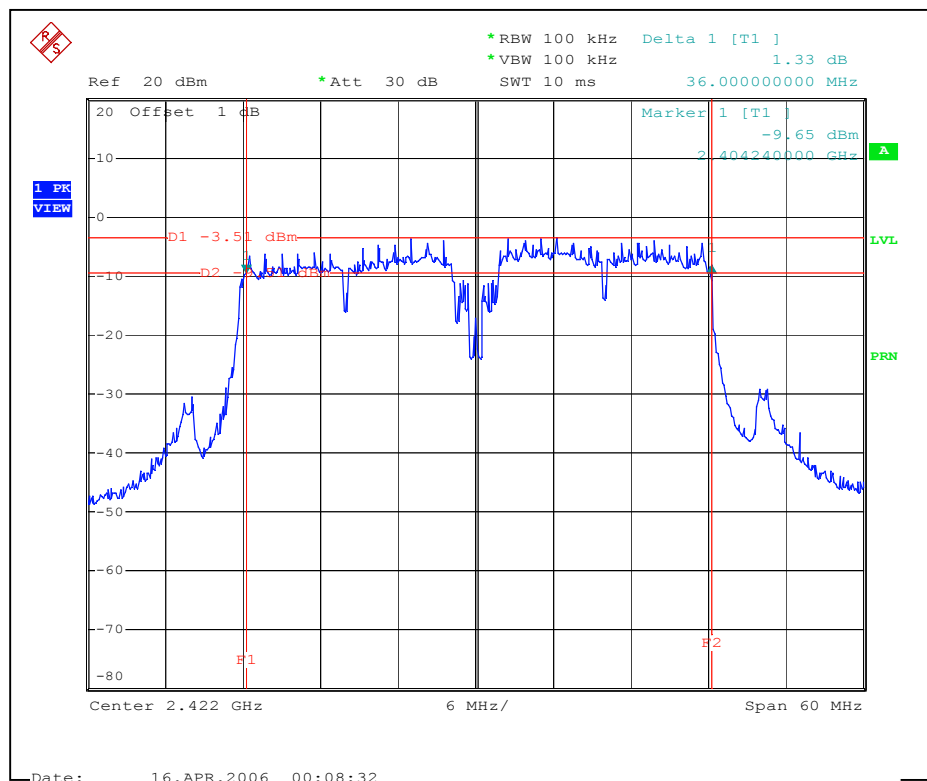
Date: 15.APR.2006 05:04:59

# CH7

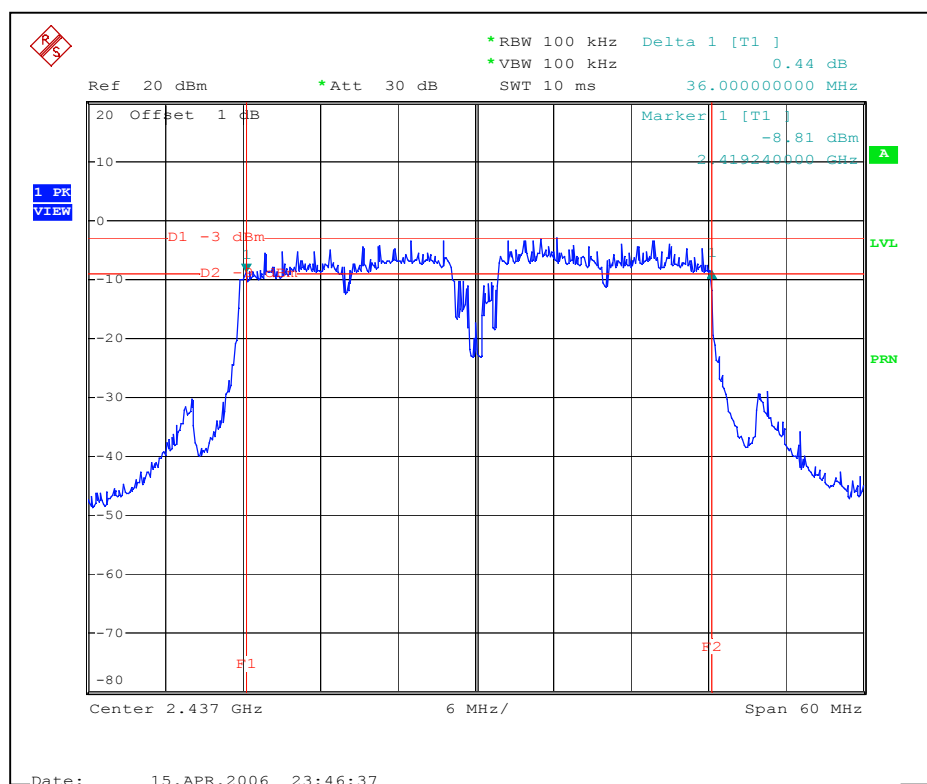


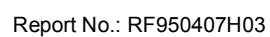
Date: 15.APR.2006 05:33:49

## FOR CHAIN 1: CH1



## CH4





## 4.4 MAXIMUM PEAK OUTPUT POWER

### 4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

### 4.4.2 INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100036     | Nov. 23, 2006    |
| Agilent SIGNAL GENERATOR   | E8257C    | MY43320668 | Dec. 07, 2006    |
| TEKTRONIX OSCILLOSCOPE     | TDS380    | B016335    | Jun. 22, 2006    |
| NARDA DETECTOR             | 4503A     | FSCM99899  | NA               |

**NOTE:**

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

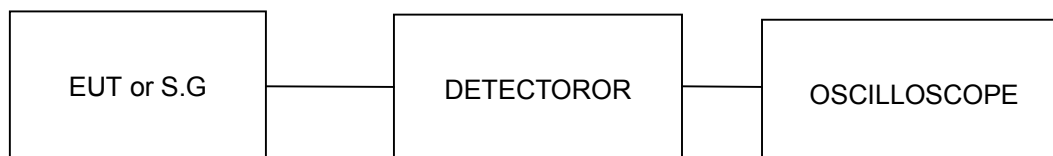
### 4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

### 4.4.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.4.5 TEST SETUP



#### 4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

#### 4.4.7 TEST RESULTS

##### 802.11b DSSS MODULATION:

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | DBPSK         | <b>TRANSFER RATE</b>            | 1Mbps                  |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) | PEAK POWER OUTPUT (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---------|-------------------------|------------------------|-------------------------|------------------------|-------------|
| 1       | 2412                    | 97.724                 | 19.90                   | 30                     | PASS        |
| 6       | 2437                    | 102.329                | 20.10                   | 30                     | PASS        |
| 11      | 2462                    | 93.325                 | 19.70                   | 30                     | PASS        |

##### 802.11g OFDM MODULATION:

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6Mbps                  |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) | PEAK POWER OUTPUT (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---------|-------------------------|------------------------|-------------------------|------------------------|-------------|
| 1       | 2412                    | 102.329                | 20.10                   | 30                     | PASS        |
| 6       | 2437                    | 112.202                | 20.50                   | 30                     | PASS        |
| 11      | 2462                    | 102.329                | 20.10                   | 30                     | PASS        |

### DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 3)

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6.5Mbps                |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) |         | PEAK POWER OUTPUT (dBm) |         | TOTAL PEAK POWER (mW) | TOTAL PEAK POWER (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---------|-------------------------|------------------------|---------|-------------------------|---------|-----------------------|------------------------|------------------------|-------------|
|         |                         | CHAIN 0                | CHAIN 1 | CHAIN 0                 | CHAIN 1 |                       |                        |                        |             |
| 1       | 2412                    | 81.28                  | 81.28   | 19.1                    | 19.1    | 162.566               | 22.1                   | 30                     | PASS        |
| 6       | 2437                    | 91.20                  | 87.10   | 19.6                    | 19.4    | 178.297               | 22.5                   | 30                     | PASS        |
| 11      | 2462                    | 107.15                 | 77.62   | 20.3                    | 18.9    | 184.777               | 22.7                   | 30                     | PASS        |

### DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 2)

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6.5Mbps                |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) |         | PEAK POWER OUTPUT (dBm) |         | TOTAL PEAK POWER (mW) | TOTAL PEAK POWER (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---------|-------------------------|------------------------|---------|-------------------------|---------|-----------------------|------------------------|------------------------|-------------|
|         |                         | CHAIN 0                | CHAIN 1 | CHAIN 0                 | CHAIN 1 |                       |                        |                        |             |
| 1       | 2412                    | 81.28                  | 100.00  | 19.1                    | 20.0    | 181.283               | 22.6                   | 30                     | PASS        |
| 6       | 2437                    | 91.20                  | 77.62   | 19.6                    | 18.9    | 168.826               | 22.3                   | 30                     | PASS        |
| 11      | 2462                    | 107.15                 | 27.54   | 20.3                    | 14.4    | 134.694               | 21.3                   | 30                     | PASS        |

### DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 3)

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 13.5Mbps               |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) |         | PEAK POWER OUTPUT (dBm) |         | TOTAL PEAK POWER (mW) | TOTAL PEAK POWER (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---------|-------------------------|------------------------|---------|-------------------------|---------|-----------------------|------------------------|------------------------|-------------|
|         |                         | CHAIN 0                | CHAIN 1 | CHAIN 0                 | CHAIN 1 |                       |                        |                        |             |
| 1       | 2422                    | 38.90                  | 66.07   | 15.9                    | 18.2    | 104.974               | 20.2                   | 30                     | PASS        |
| 4       | 2437                    | 81.28                  | 57.54   | 19.1                    | 17.6    | 138.827               | 21.4                   | 30                     | PASS        |
| 7       | 2452                    | 72.44                  | 46.77   | 18.6                    | 16.7    | 119.217               | 20.8                   | 30                     | PASS        |

### DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 2)

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 13.5Mbps               |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (mW) |         | PEAK POWER OUTPUT (dBm) |         | TOTAL PEAK POWER (mW) | TOTAL PEAK POWER (dBm) | PEAK POWER LIMIT (dBm) | PASS / FAIL |
|---------|-------------------------|------------------------|---------|-------------------------|---------|-----------------------|------------------------|------------------------|-------------|
|         |                         | CHAIN 0                | CHAIN 1 | CHAIN 0                 | CHAIN 1 |                       |                        |                        |             |
| 1       | 2422                    | 38.90                  | 63.1    | 15.9                    | 18.0    | 102.000               | 20.1                   | 30                     | PASS        |
| 4       | 2437                    | 81.28                  | 63.1    | 19.1                    | 18.0    | 144.379               | 21.6                   | 30                     | PASS        |
| 7       | 2452                    | 72.44                  | 63.1    | 18.6                    | 18.0    | 135.539               | 21.3                   | 30                     | PASS        |

## 4.5 POWER SPECTRAL DENSITY MEASUREMENT

### 4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

### 4.5.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100036     | Nov. 23, 2006    |

**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.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 PROCEDURE

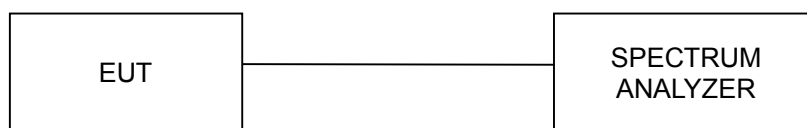
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

### 4.5.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.5.5 TEST SETUP



#### 4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

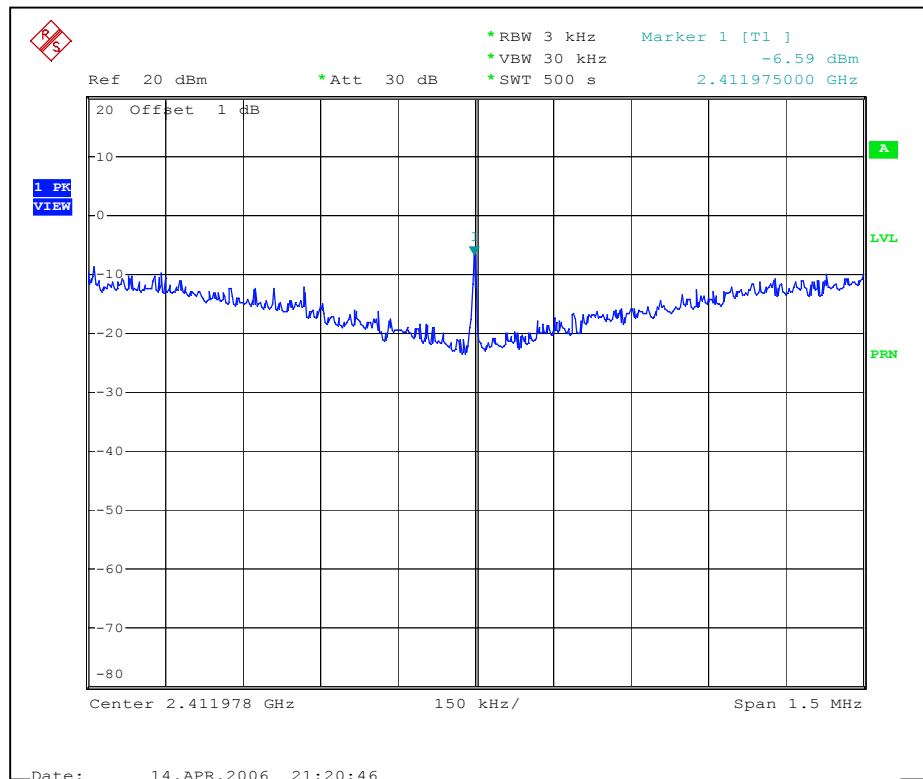
## 4.5.7 TEST RESULTS

### 802.11b DSSS MODULATION:

|                      |               |                          |                        |
|----------------------|---------------|--------------------------|------------------------|
| MODULATION TYPE      | DBPSK         | TRANSFER RATE            | 1Mbps                  |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 20deg.C, 60%RH, 971hPa |
| TESTED BY            | Wen Yu        |                          |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---------|--------------------------|---------------------------------|---------------------|-------------|
| 1       | 2412                     | -6.59                           | 8                   | PASS        |
| 6       | 2437                     | -6.71                           | 8                   | PASS        |
| 11      | 2462                     | -7.25                           | 8                   | PASS        |

## CH1



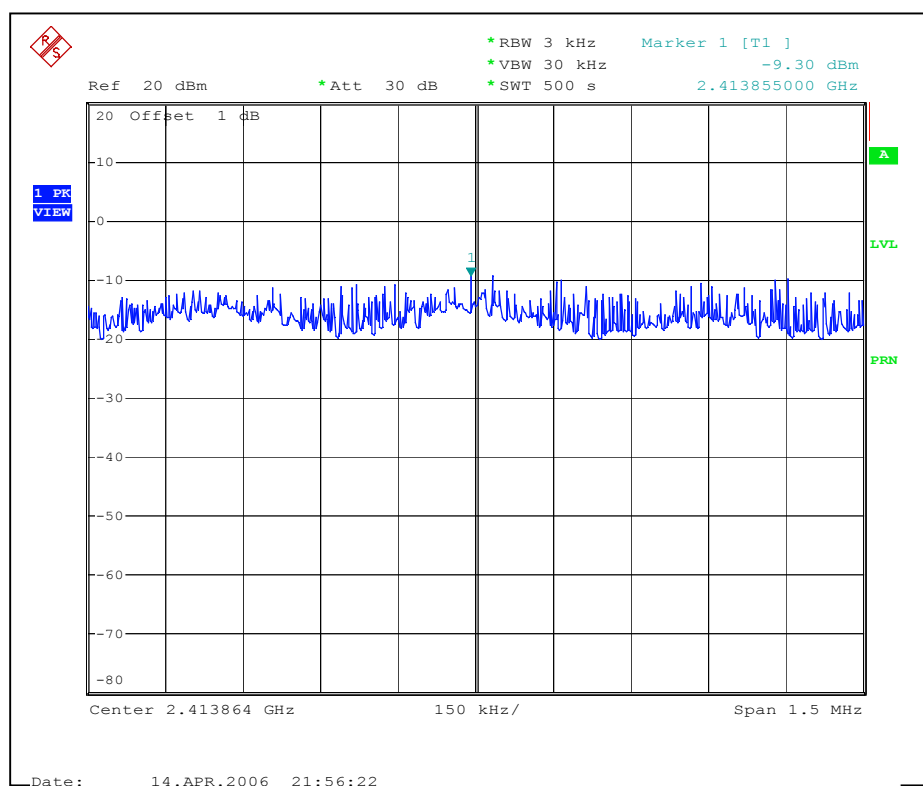


## 802.11g OFDM MODULATION:

|                      |               |                          |                        |
|----------------------|---------------|--------------------------|------------------------|
| MODULATION TYPE      | BPSK          | TRANSFER RATE            | 6Mbps                  |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 20deg.C, 60%RH, 971hPa |
| TESTED BY            | Wen Yu        |                          |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3kHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---------|--------------------------|---------------------------------|---------------------|-------------|
| 1       | 2412                     | -9.30                           | 8                   | PASS        |
| 6       | 2437                     | -9.23                           | 8                   | PASS        |
| 11      | 2462                     | -9.15                           | 8                   | PASS        |

CH1



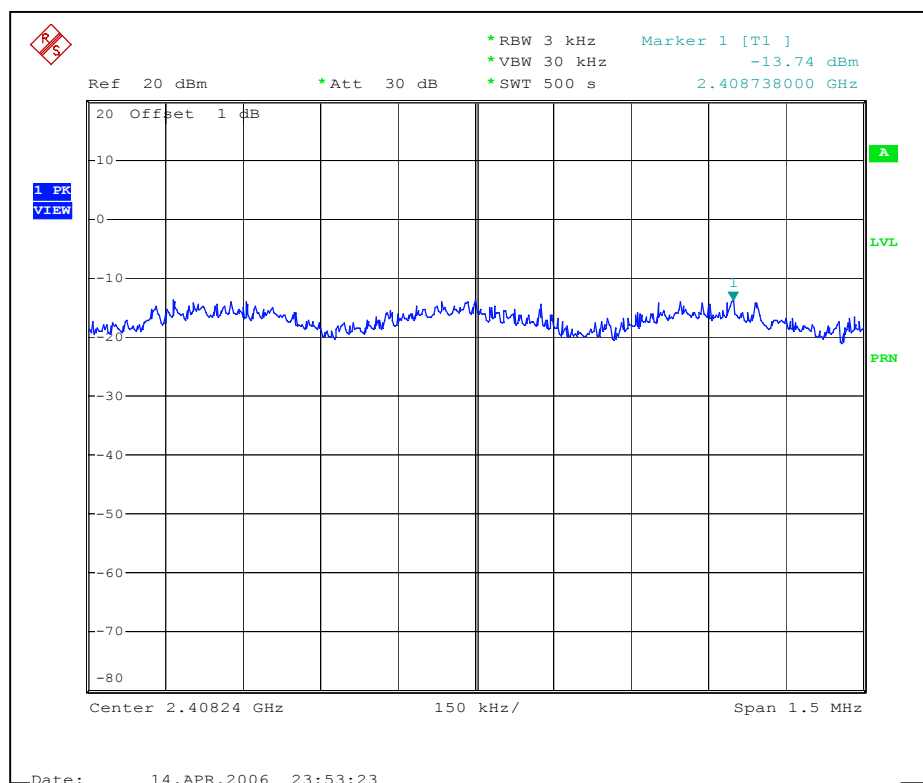


# **DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 3)**

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6.5Mbps                |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3kHz BW (dBm) |         | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---------|--------------------------|---------------------------------|---------|---------------------|-------------|
|         |                          | CHAIN 0                         | CHAIN 1 |                     |             |
| 1       | 2412                     | -13.74                          | -12.57  | 8                   | PASS        |
| 6       | 2437                     | -12.24                          | -11.98  | 8                   | PASS        |
| 11      | 2462                     | -11.09                          | -13.19  | 8                   | PASS        |

FOR CHAIN 0: CH1







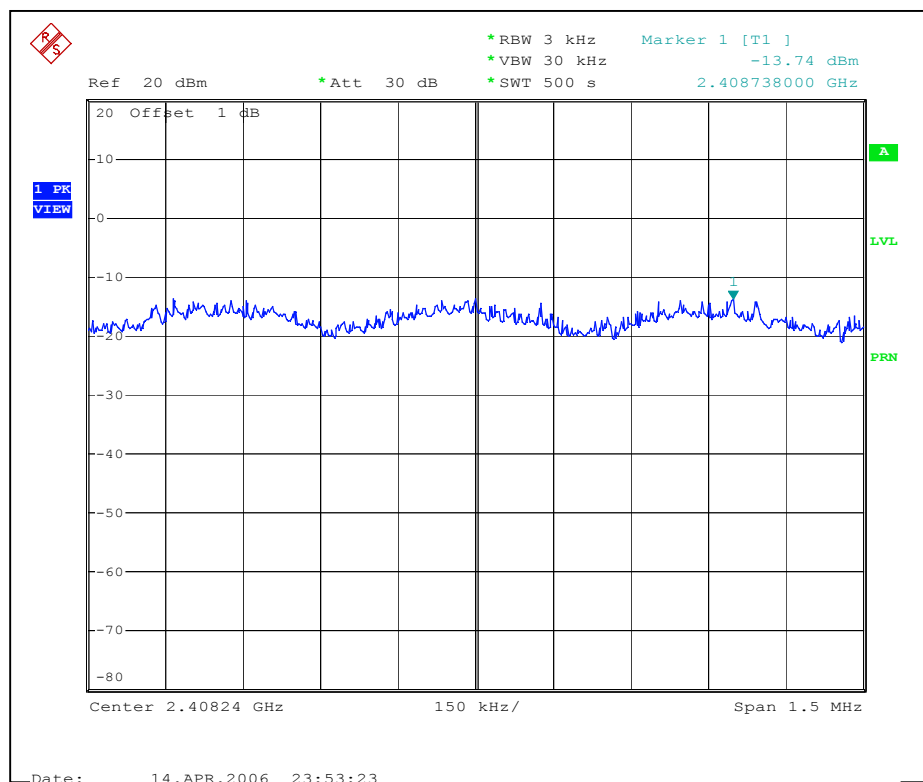


## DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 2)

|                             |               |                                 |                        |
|-----------------------------|---------------|---------------------------------|------------------------|
| <b>MODULATION TYPE</b>      | BPSK          | <b>TRANSFER RATE</b>            | 6.5Mbps                |
| <b>INPUT POWER (SYSTEM)</b> | 120Vac, 60 Hz | <b>ENVIRONMENTAL CONDITIONS</b> | 20deg.C, 60%RH, 971hPa |
| <b>TESTED BY</b>            | Wen Yu        |                                 |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3kHz BW (dBm) |         | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---------|--------------------------|---------------------------------|---------|---------------------|-------------|
|         |                          | CHAIN 0                         | CHAIN 1 |                     |             |
| 1       | 2412                     | -13.74                          | -13.04  | 8                   | PASS        |
| 6       | 2437                     | -12.24                          | -12.30  | 8                   | PASS        |
| 11      | 2462                     | -11.09                          | -16.72  | 8                   | PASS        |

FOR CHAIN 0: CH1







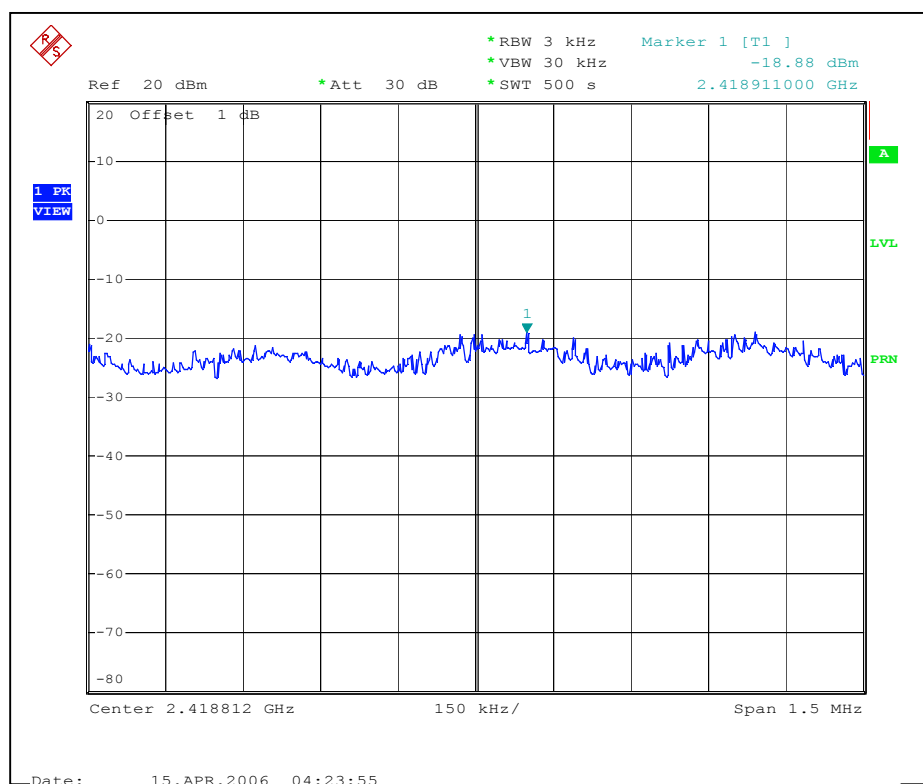


### DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 3)

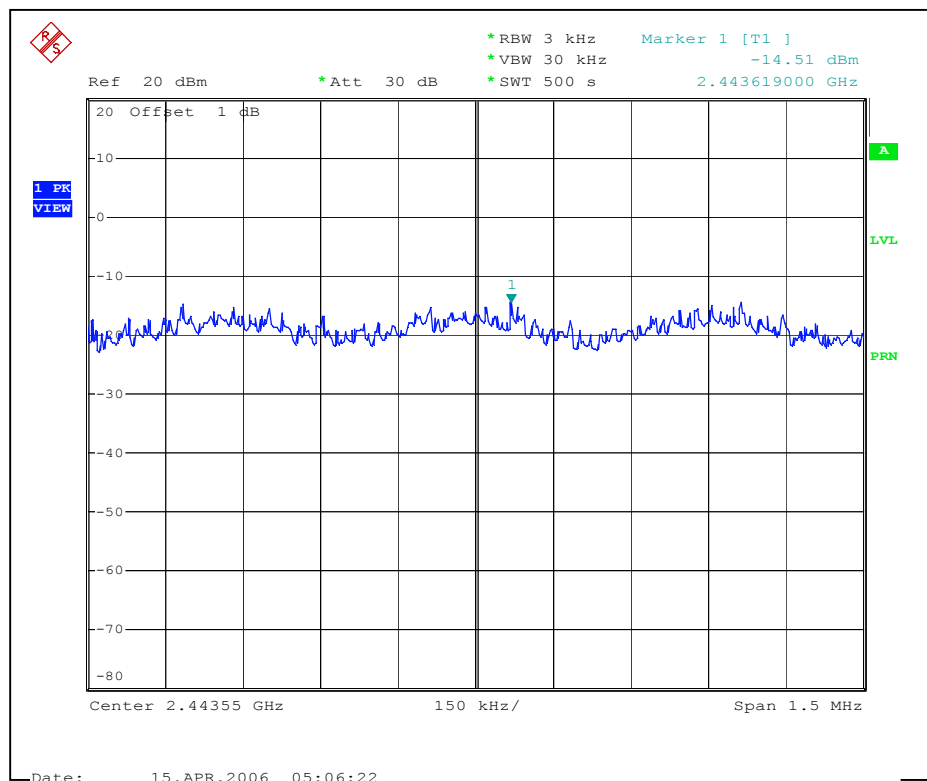
|                      |               |                          |                        |
|----------------------|---------------|--------------------------|------------------------|
| MODULATION TYPE      | BPSK          | TRANSFER RATE            | 13.5Mbps               |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 20deg.C, 60%RH, 971hPa |
| TESTED BY            | Wen Yu        |                          |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3kHz BW (dBm) |         | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---------|--------------------------|---------------------------------|---------|---------------------|-------------|
|         |                          | CHAIN 0                         | CHAIN 1 |                     |             |
| 1       | 2422                     | -18.88                          | -16.44  | 8                   | PASS        |
| 4       | 2437                     | -14.51                          | -17.09  | 8                   | PASS        |
| 7       | 2452                     | -16.84                          | -15.49  | 8                   | PASS        |

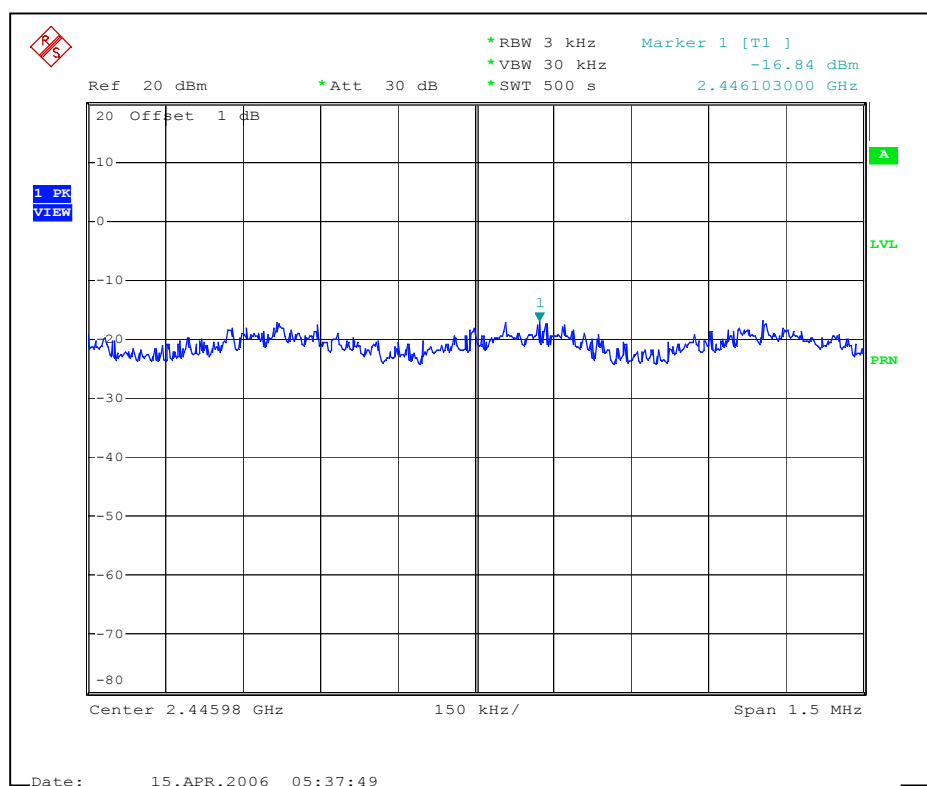
FOR CHAIN 0: CH1



# CH4

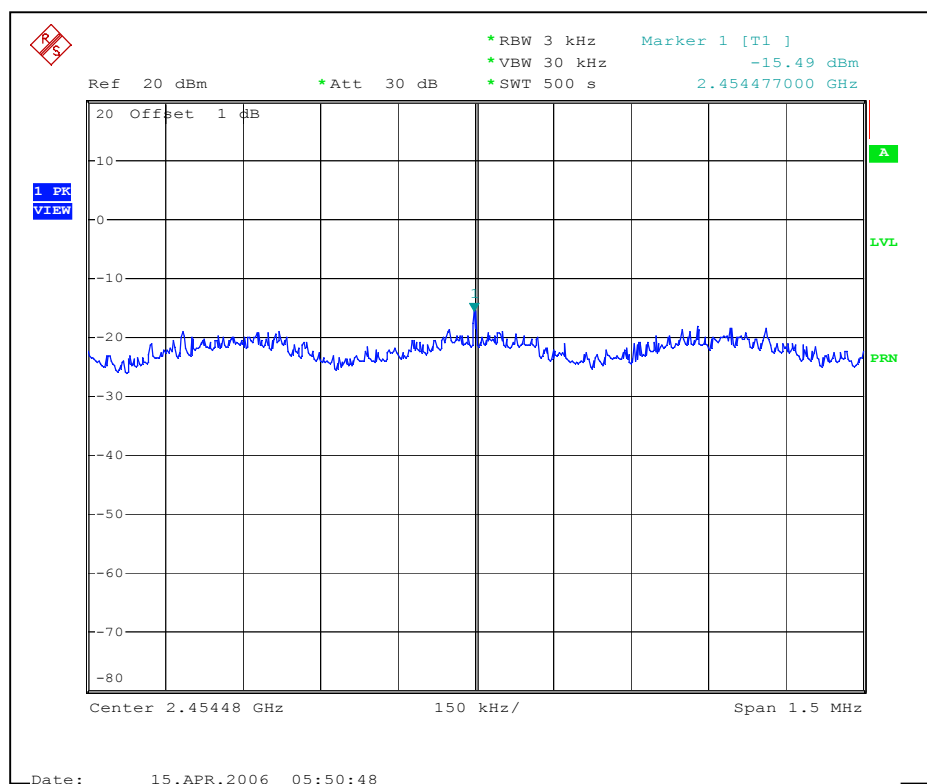


# CH7





CH7

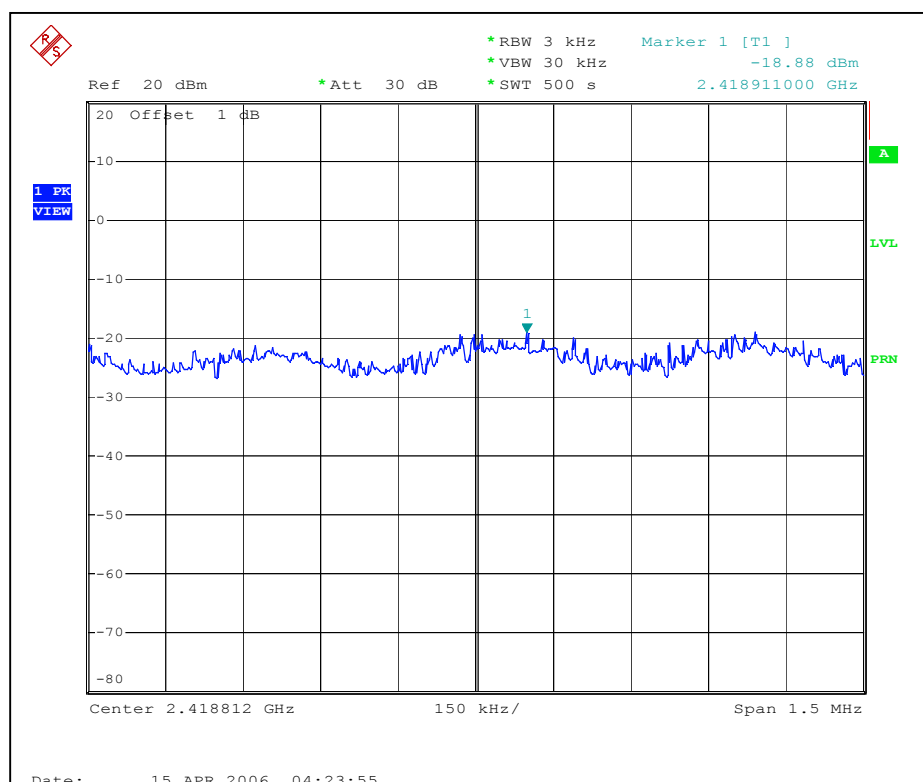


### DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 2)

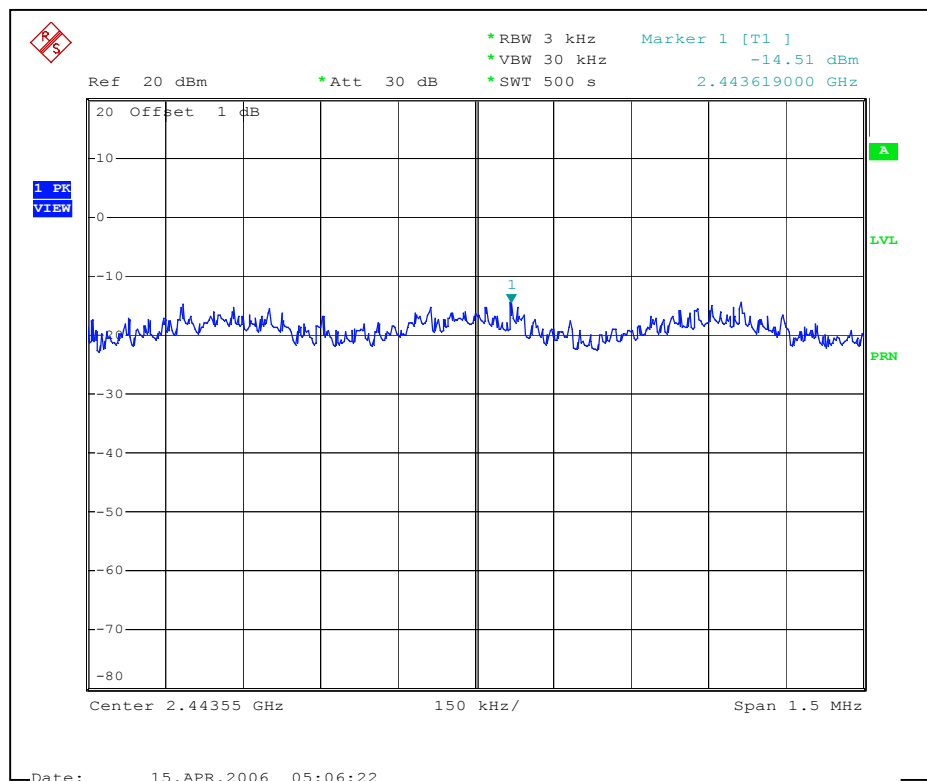
|                      |               |                          |                        |
|----------------------|---------------|--------------------------|------------------------|
| MODULATION TYPE      | BPSK          | TRANSFER RATE            | 13.5Mbps               |
| INPUT POWER (SYSTEM) | 120Vac, 60 Hz | ENVIRONMENTAL CONDITIONS | 20deg.C, 60%RH, 971hPa |
| TESTED BY            | Wen Yu        |                          |                        |

| CHANNEL | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3kHz BW (dBm) |         | MAXIMUM LIMIT (dBm) | PASS / FAIL |
|---------|--------------------------|---------------------------------|---------|---------------------|-------------|
|         |                          | CHAIN 0                         | CHAIN 1 |                     |             |
| 1       | 2422                     | -18.88                          | -16.07  | 8                   | PASS        |
| 4       | 2437                     | -14.51                          | -15.61  | 8                   | PASS        |
| 7       | 2452                     | -16.84                          | -16.29  | 8                   | PASS        |

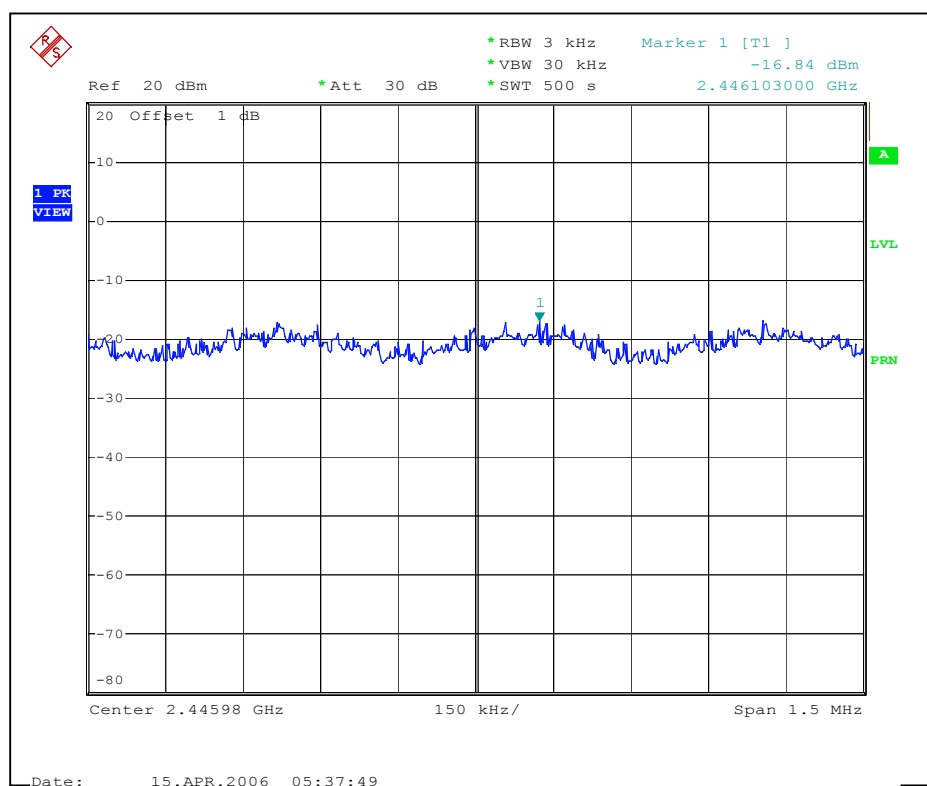
FOR CHAIN 0: CH1



# CH4

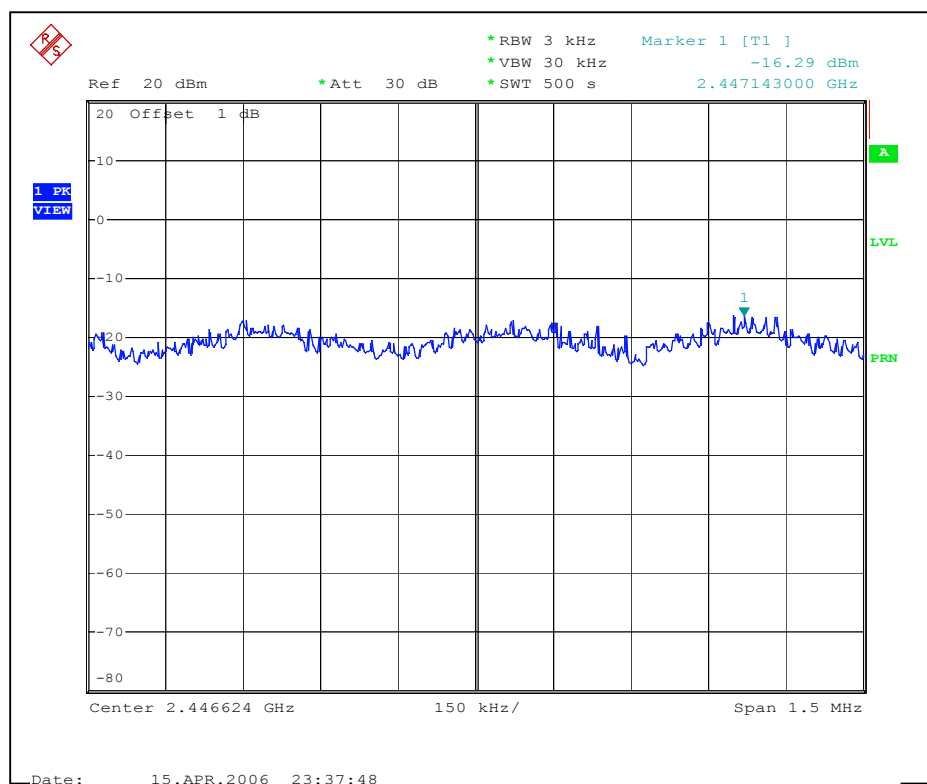


# CH7





CH7



## 4.6 CONDUCTED EMISSION AND BAND EDGES MEASUREMENT

### 4.6.1 LIMITS OF CONDUCTED EMISSION AND BAND EDGES MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### 4.6.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|----------------------------|-----------|------------|------------------|
| R&S SPECTRUM ANALYZER      | FSP40     | 100036     | Nov. 23, 2006    |

**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.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

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

The spectrum plots (RBW = VBW = 100kHz) are attached on the following pages.

#### 4.6.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.6.5 EUT OPERATING CONDITION

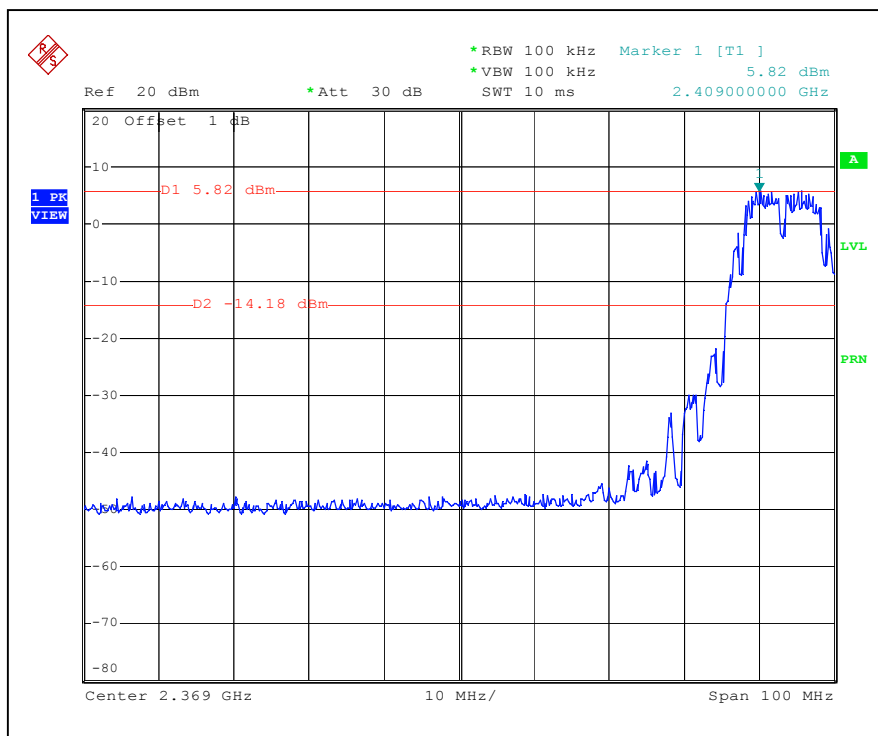
Same as Item 4.3.6

#### 4.6.6 TEST RESULTS

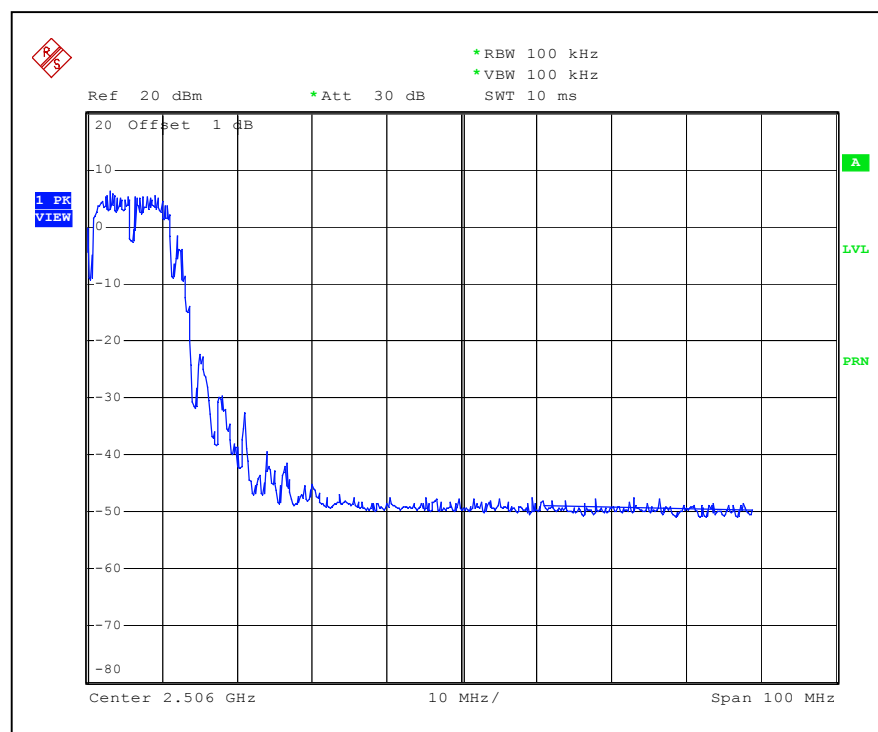
The spectrum plots are attached on the following 12 images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

## 802.11b DSSS MODULATION:

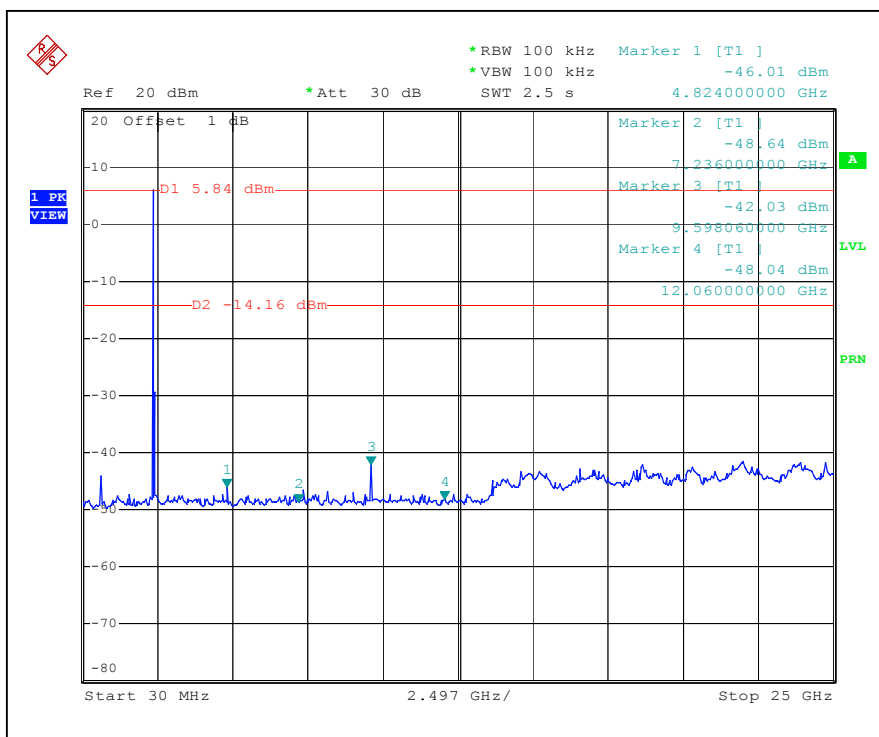
CH1



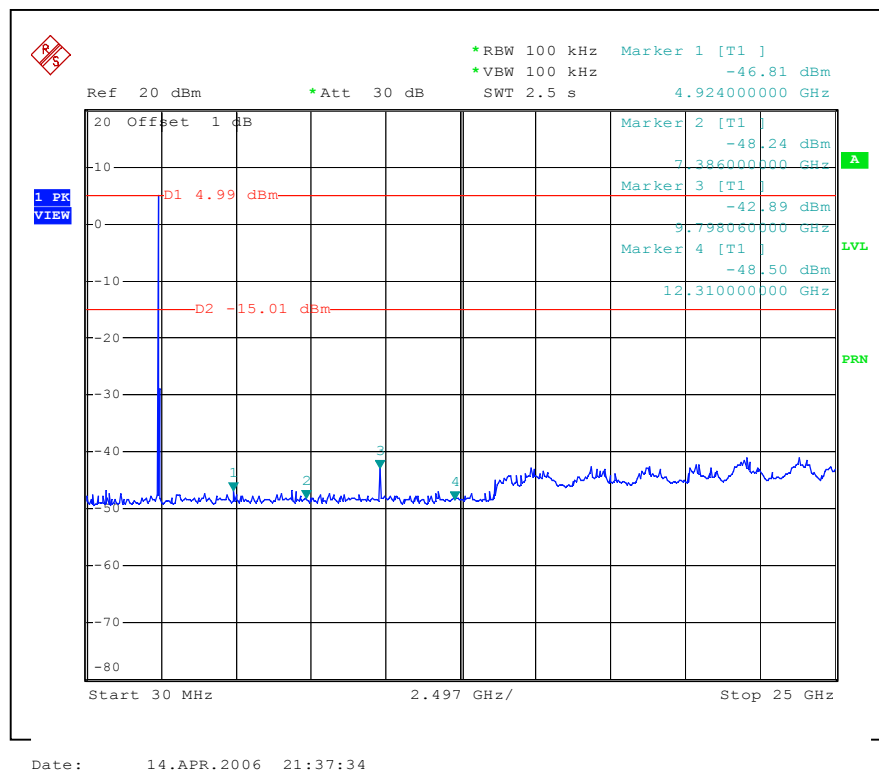
CH11 Date: 14.APR.2006 21:25:48



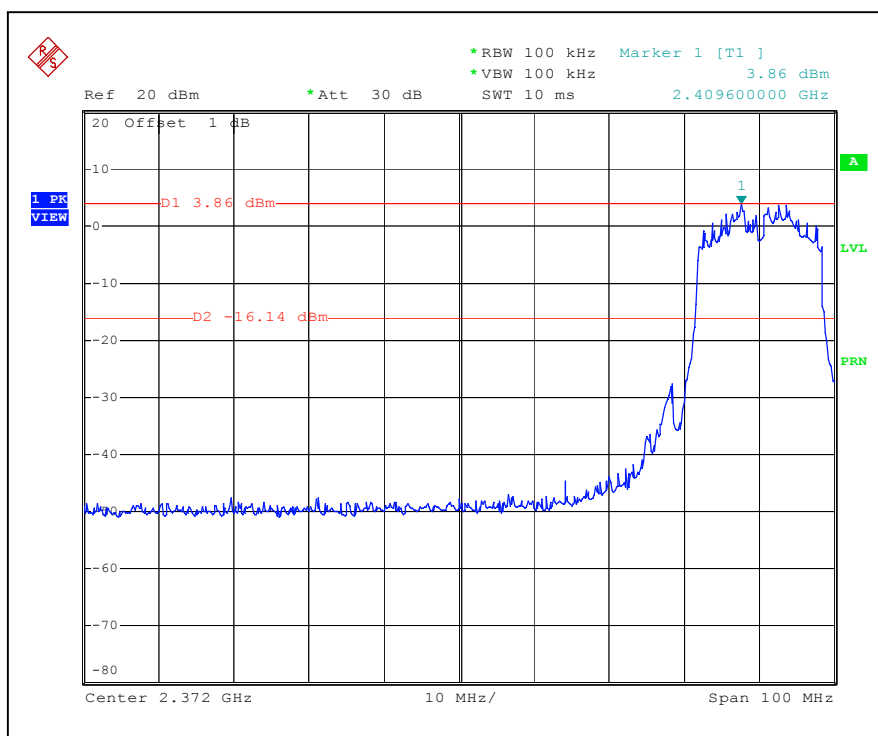
CH1



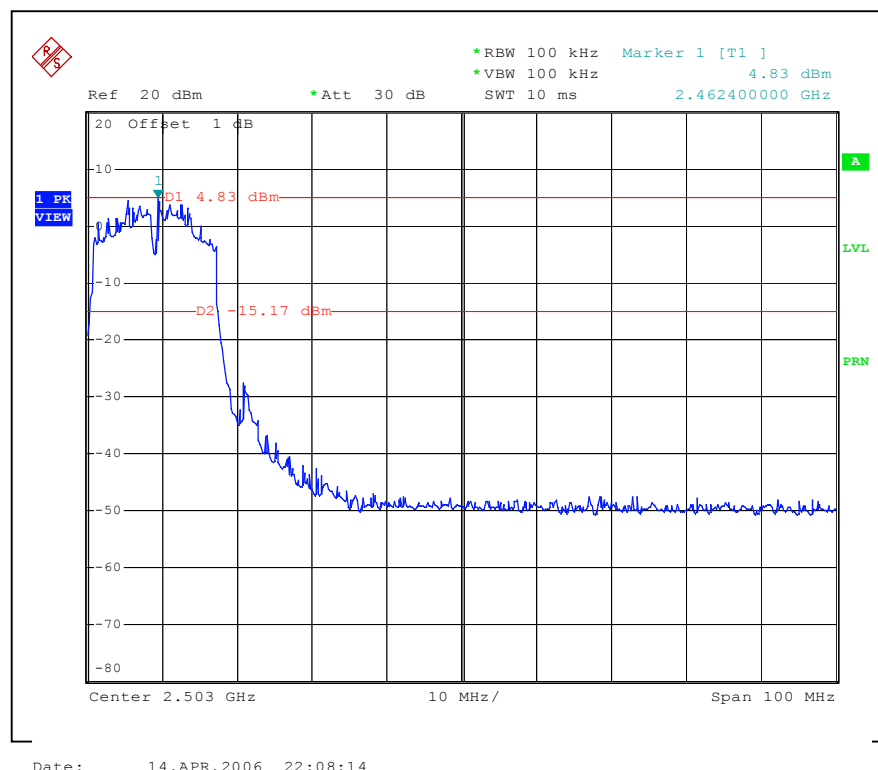
CH11      Date:      14.APR.2006      21:24:06



## 802.11g OFDM MODULATION: CH1

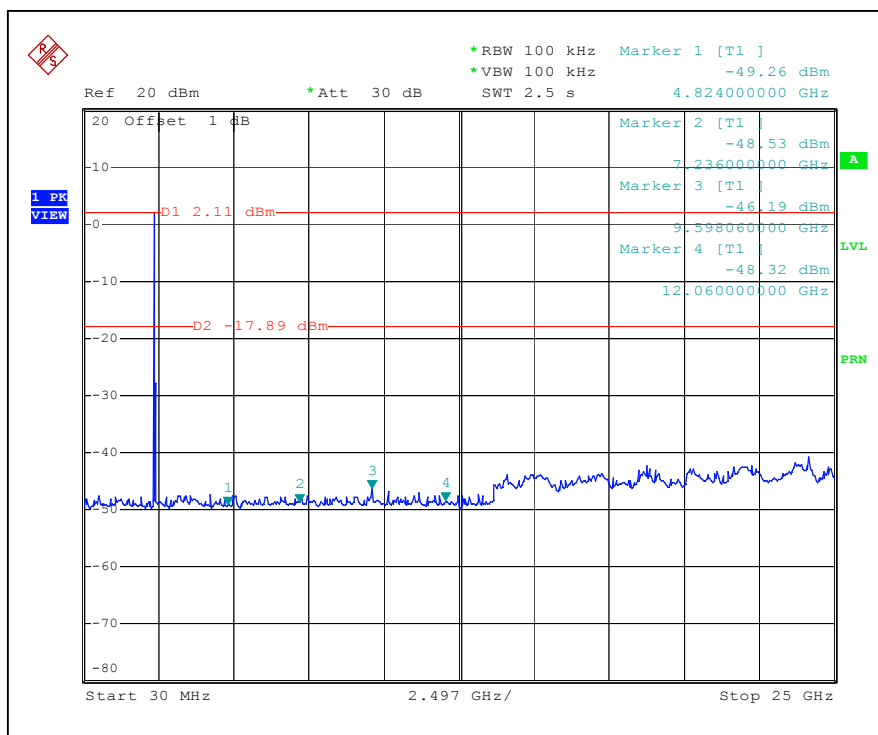


CH11      Date:      14.APR.2006      21:59:54

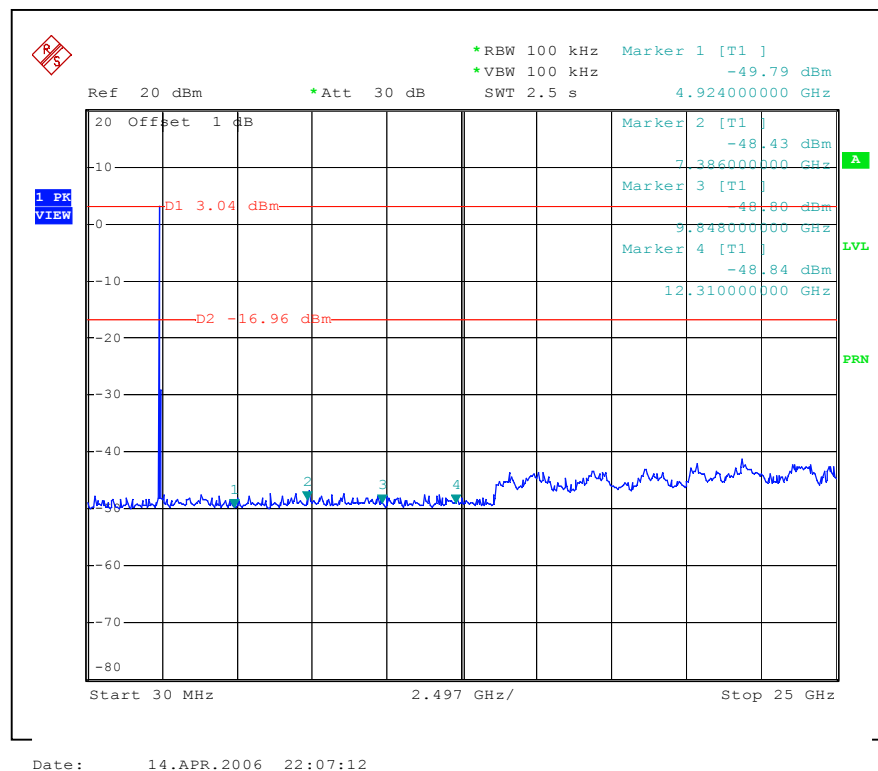


Date:      14.APR.2006      22:08:14

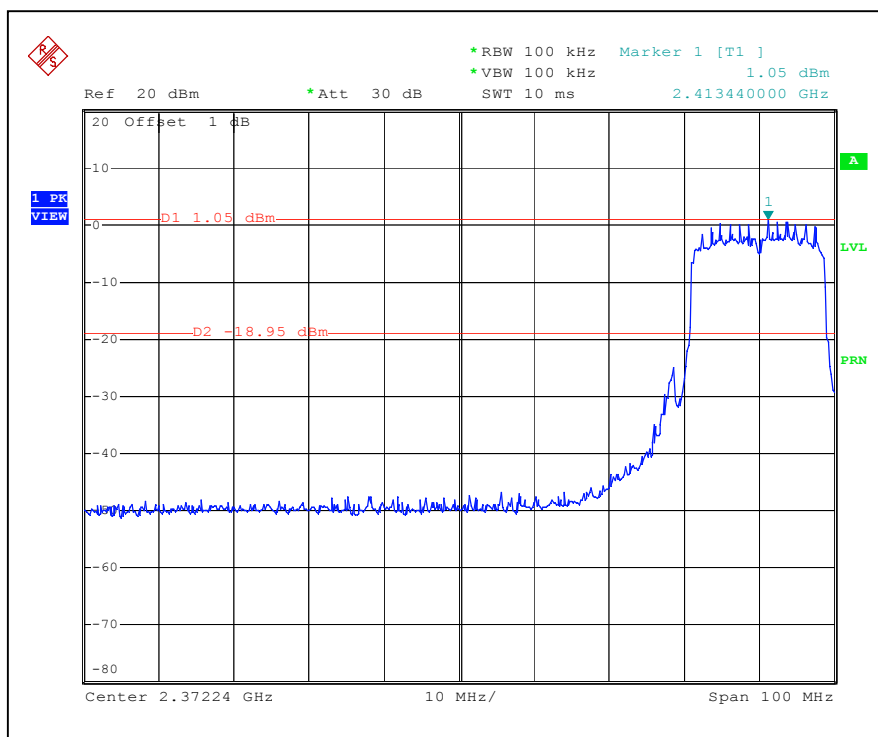
CH1



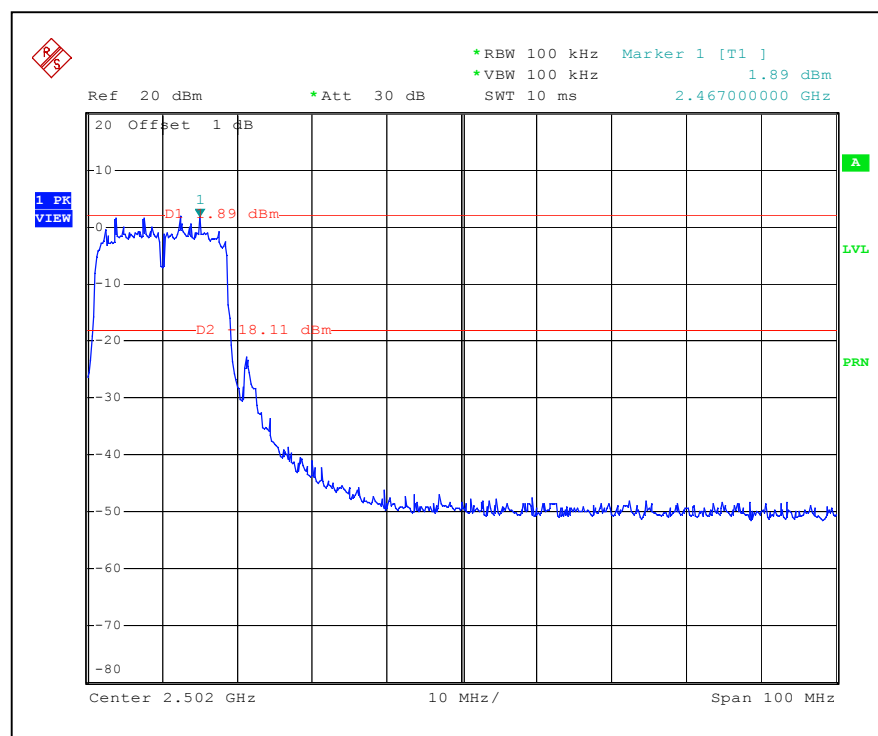
CH11 Date: 14.APR.2006 22:03:36



# **DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 3)** **FOR CHAIN 0:CH1**

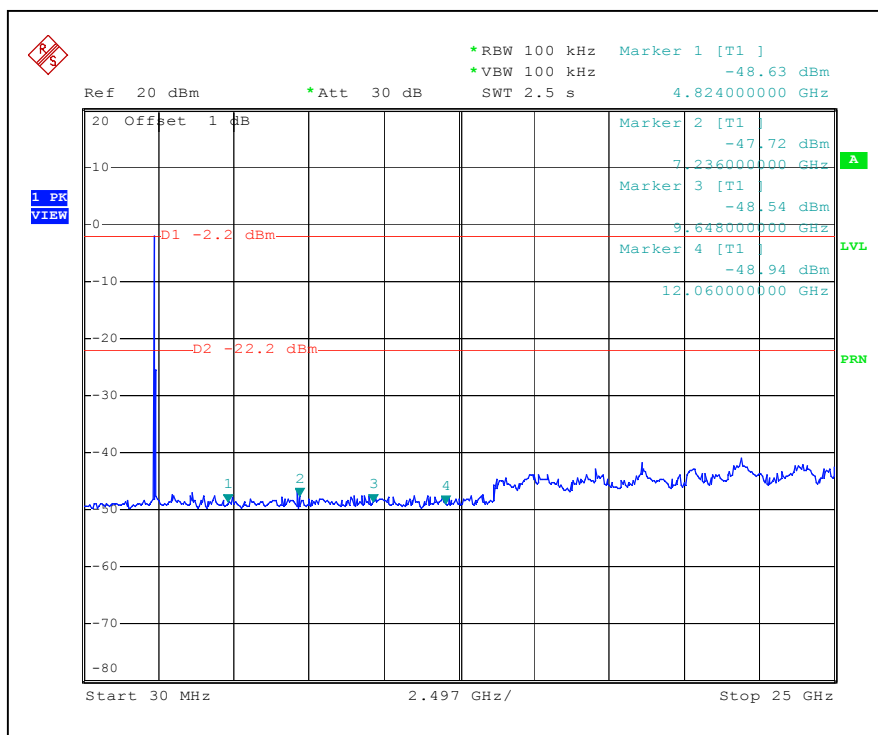


CH11 Date: 14.APR.2006 23:54:41

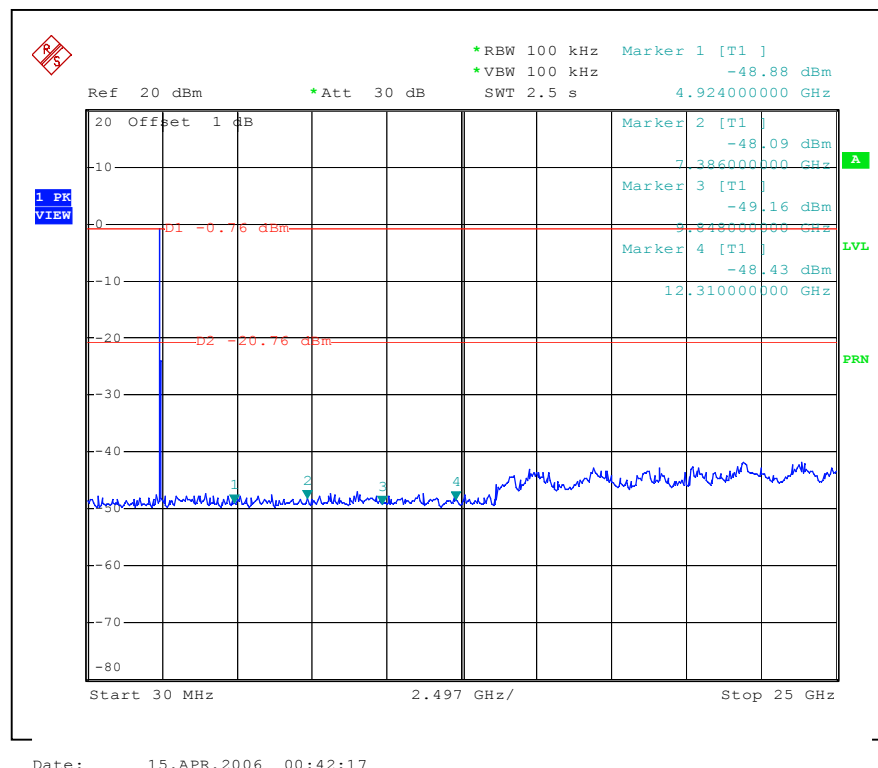


Date: 15.APR.2006 00:43:19

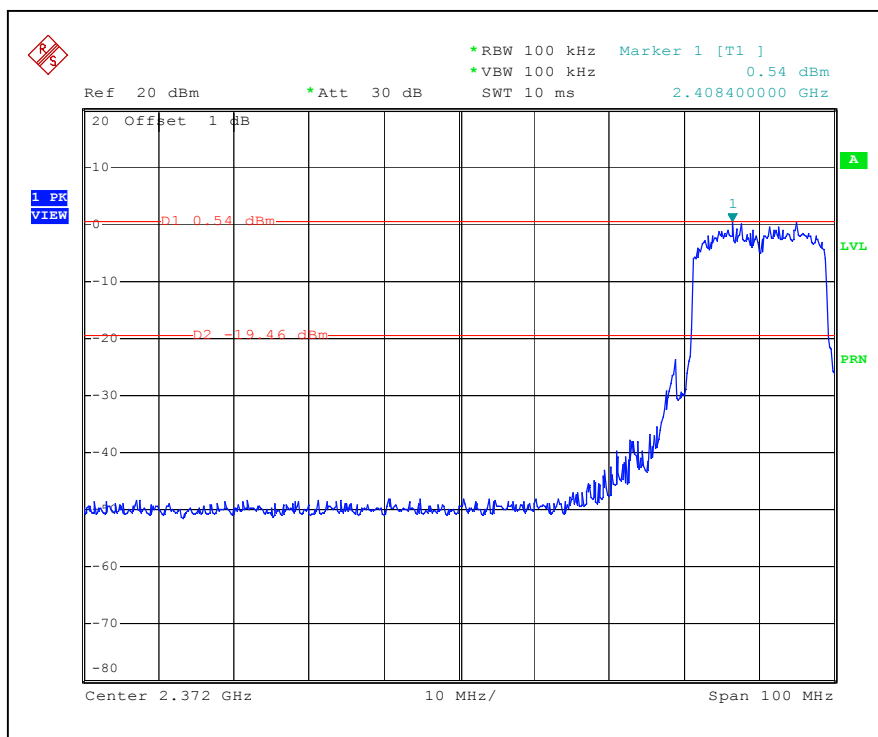
CH1



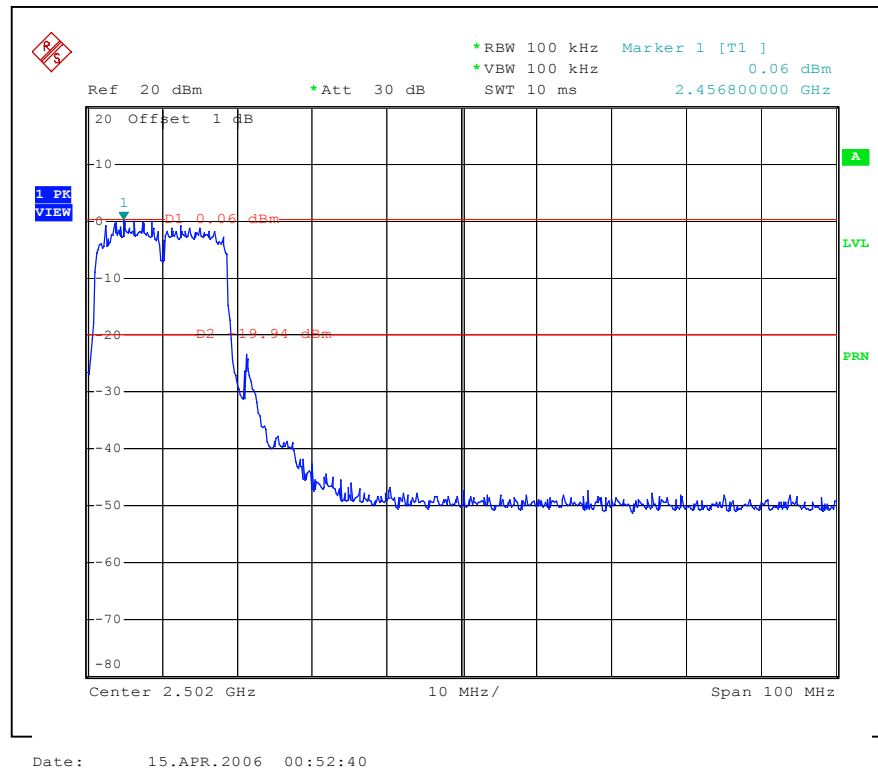
CH11 Date: 14.APR.2006 23:56:28



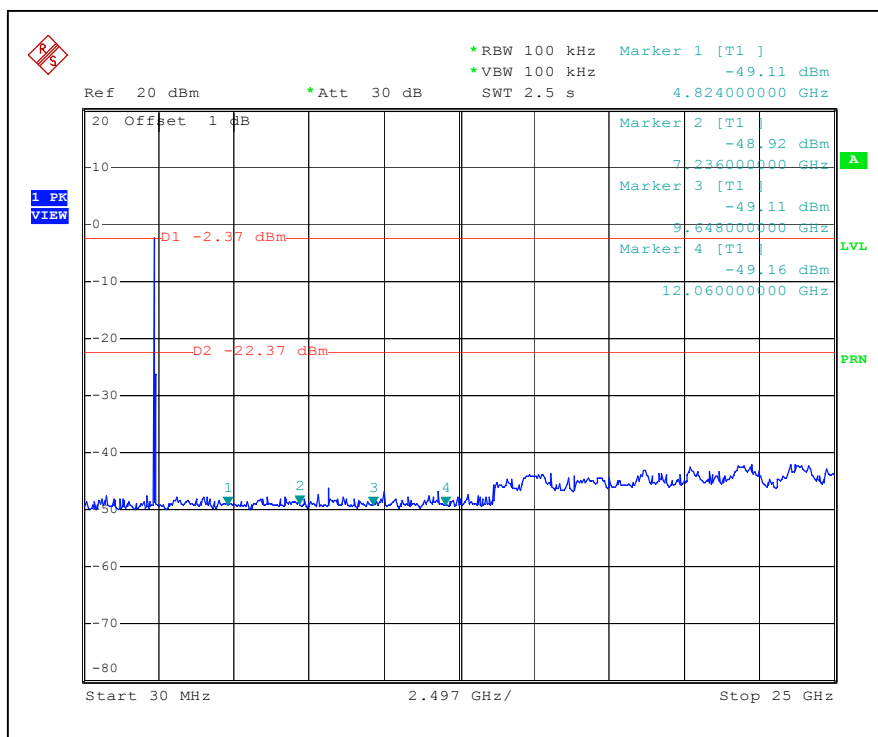
# FOR CHAIN 1:CH1



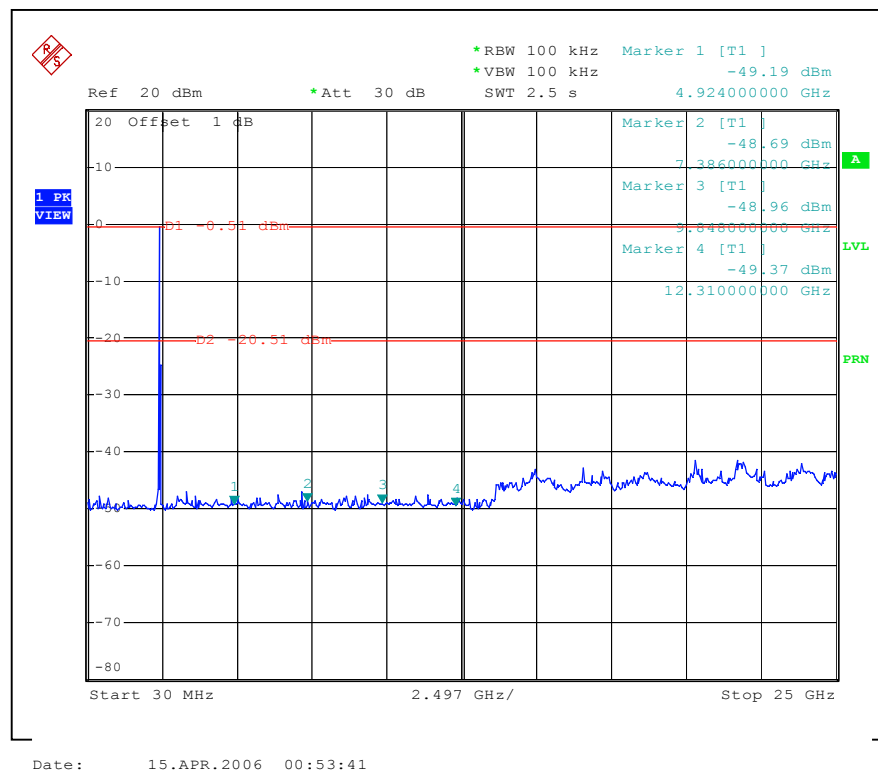
CH11 Date: 15.APR.2006 00:00:25



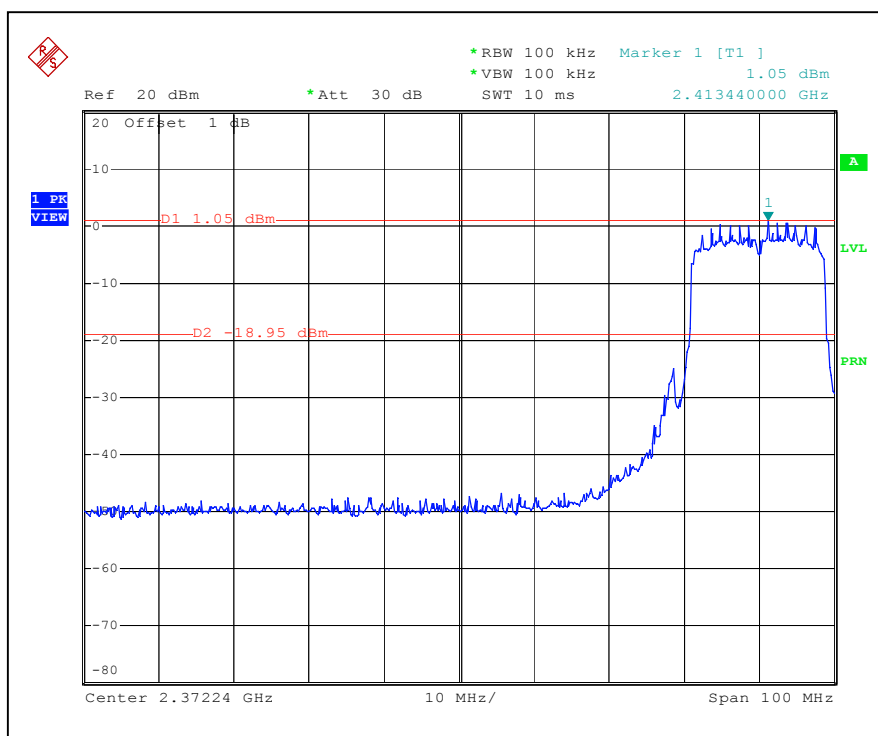
CH1



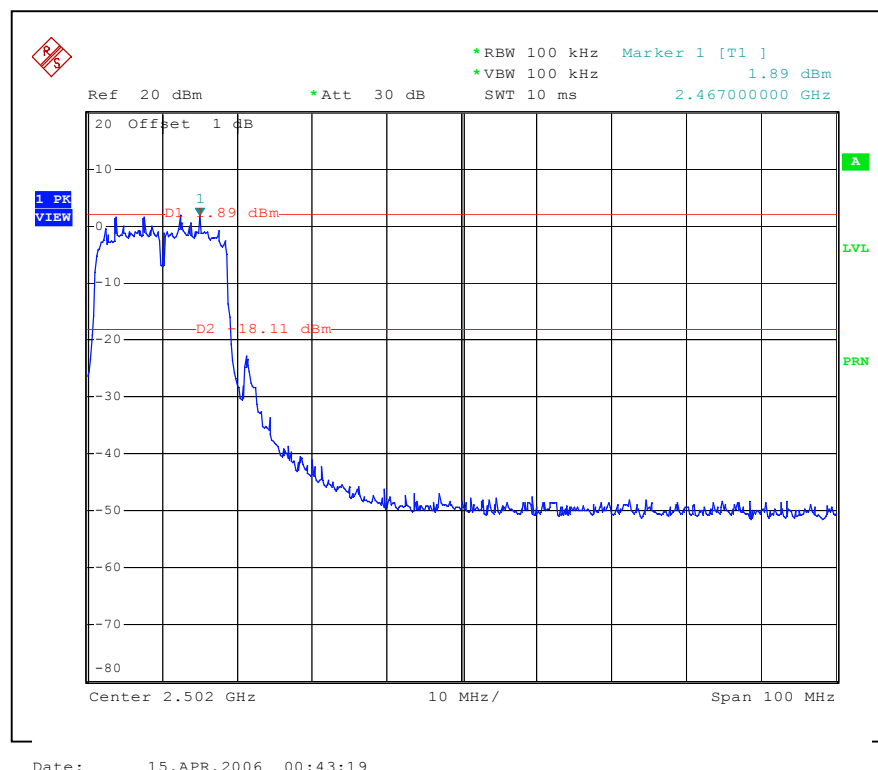
CH11 Date: 14.APR.2006 23:58:35



# **DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 2)** **FOR CHAIN 0:CH1**

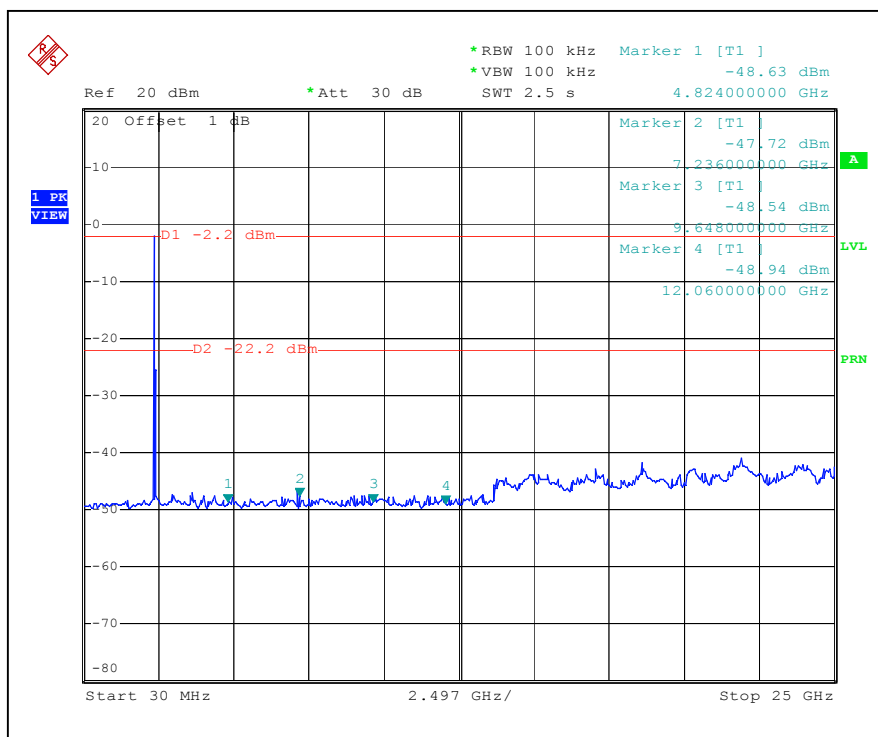


CH11 Date: 14.APR.2006 23:54:41

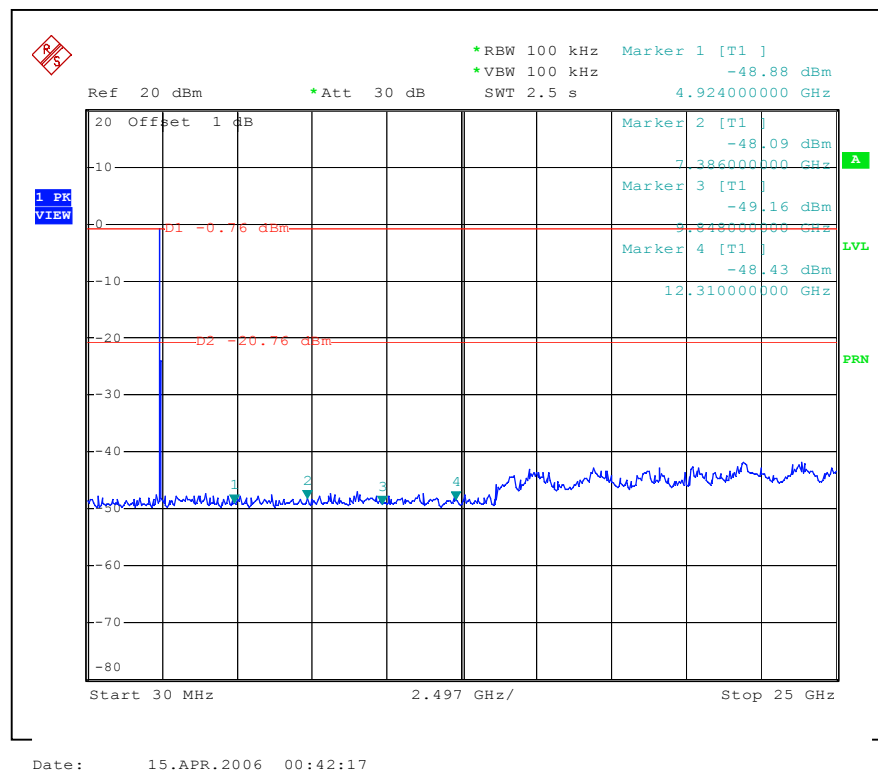


Date: 15.APR.2006 00:43:19

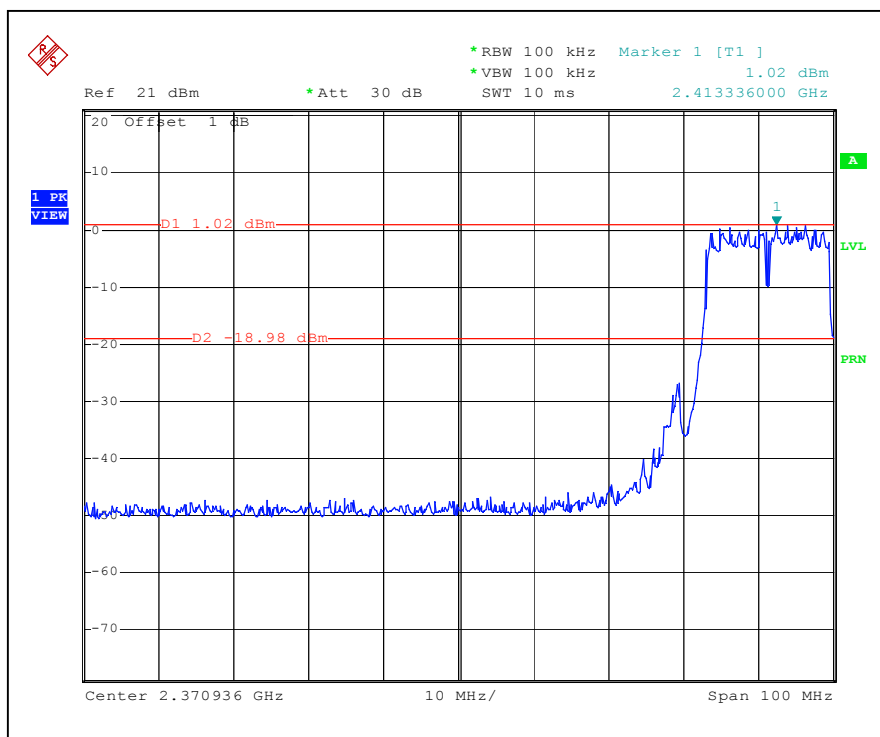
CH1



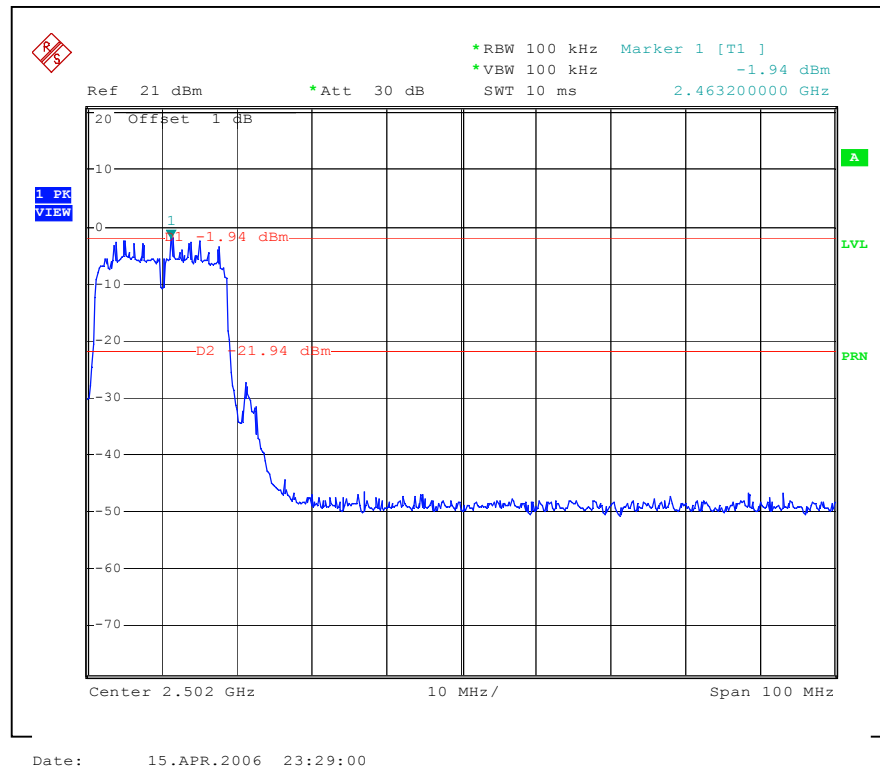
CH11 Date: 14.APR.2006 23:56:28



# FOR CHAIN 1:CH1

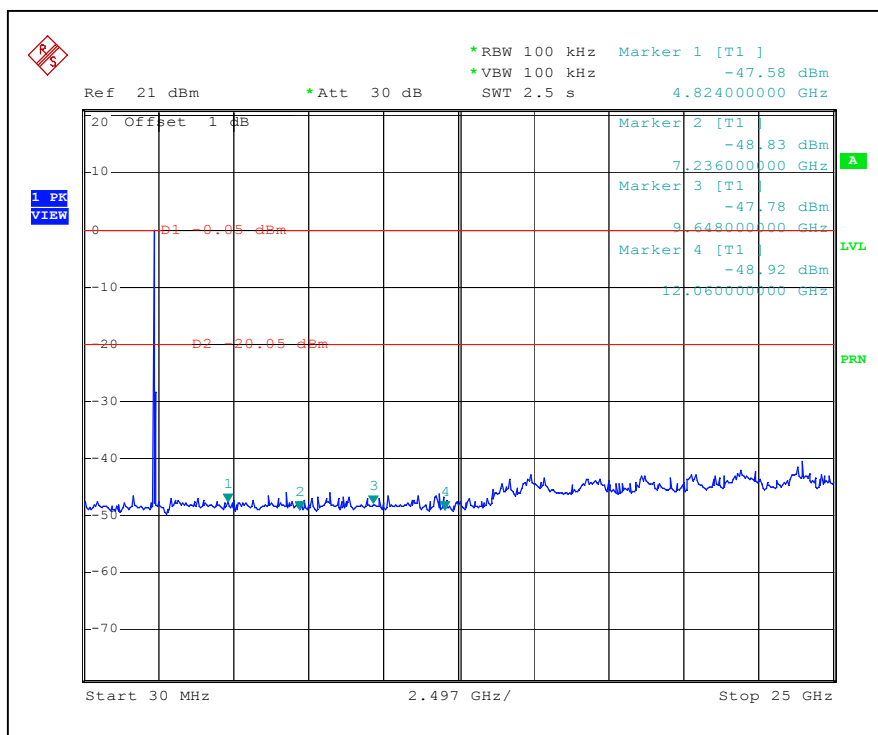


CH11      Date:      15.APR.2006      23:08:13

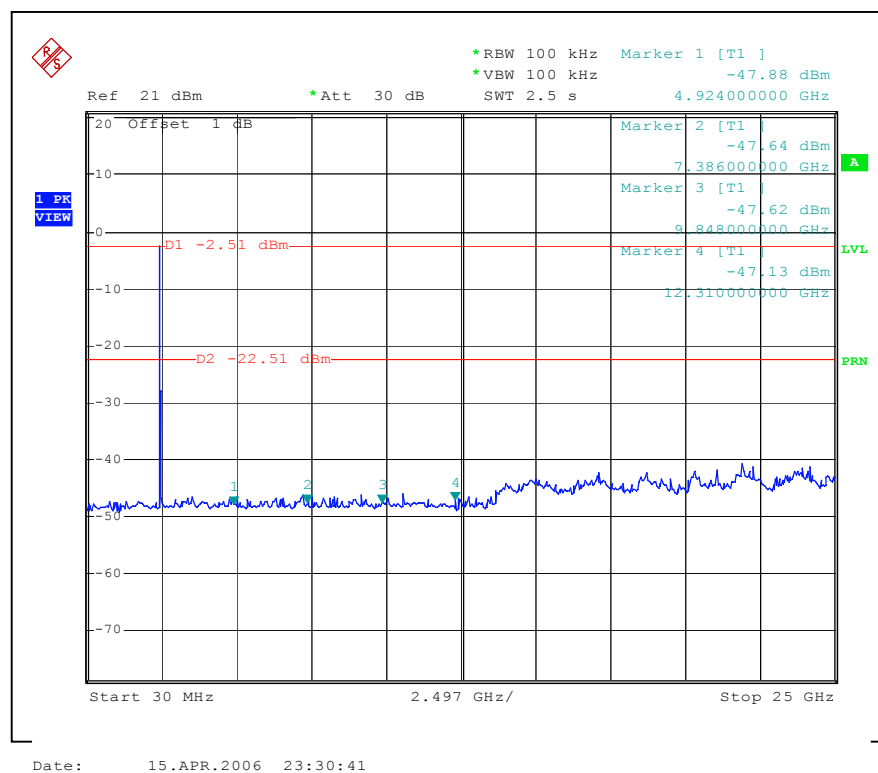


Date:      15.APR.2006      23:29:00

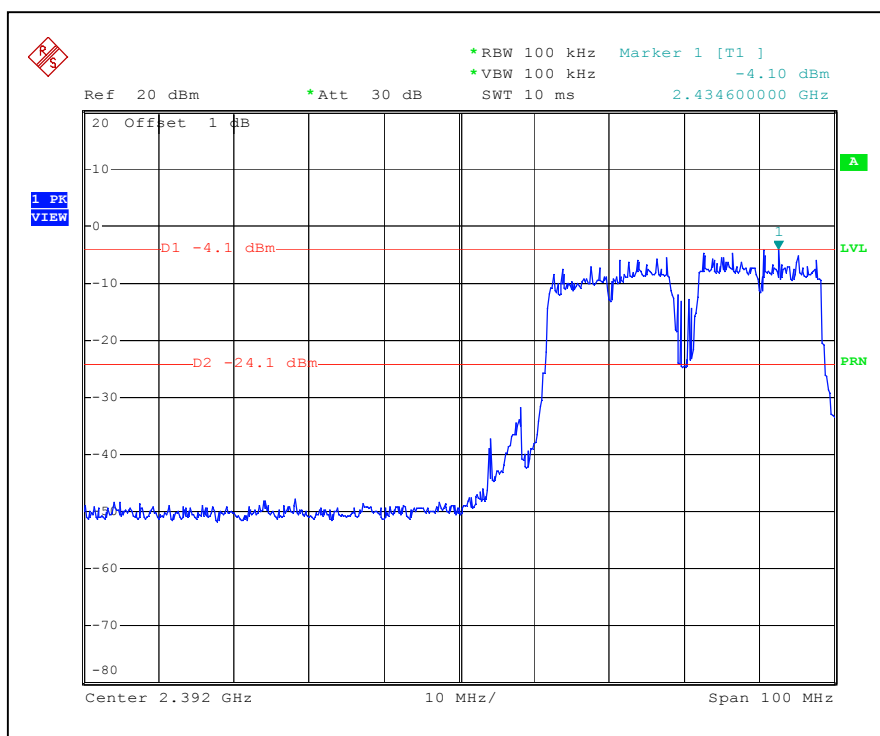
CH1



CH11 Date: 15.APR.2006 23:09:11

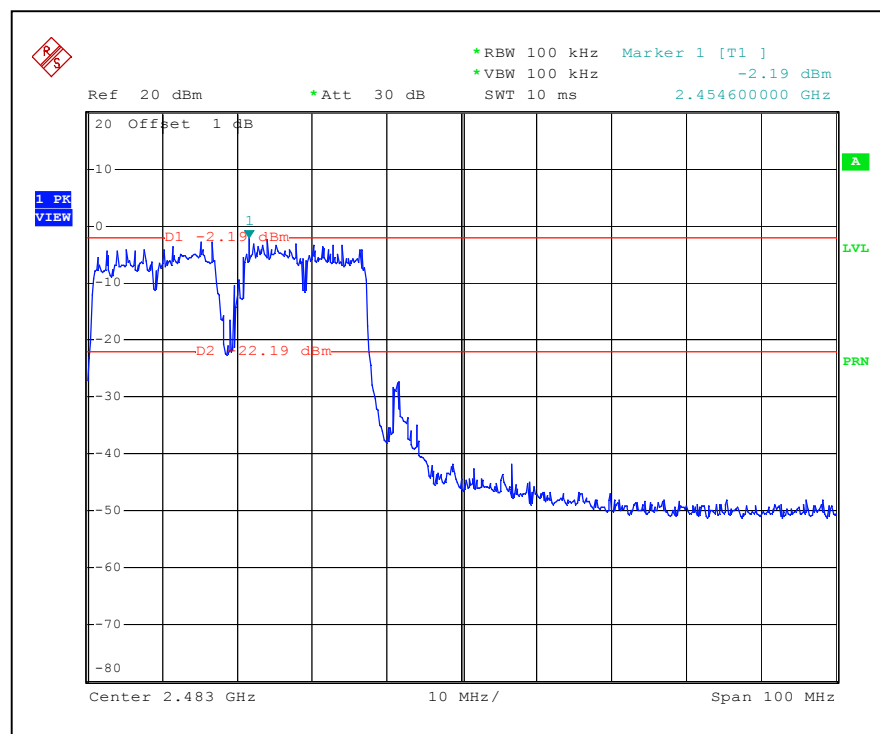


# **DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 3) FOR CHAIN 0:CH1**



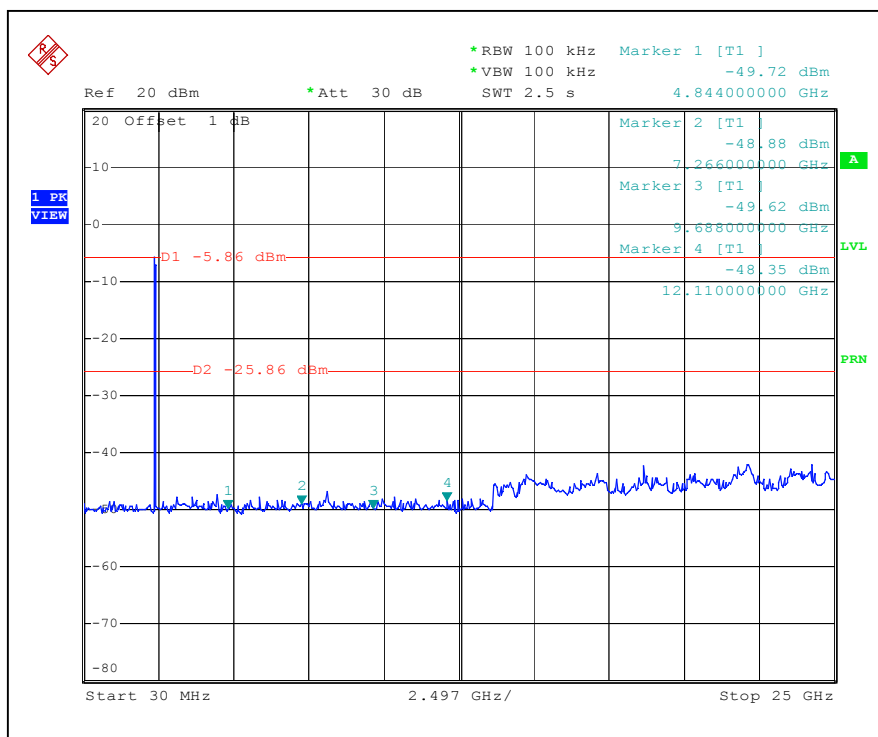
CH7

Date: 15.APR.2006 04:28:09



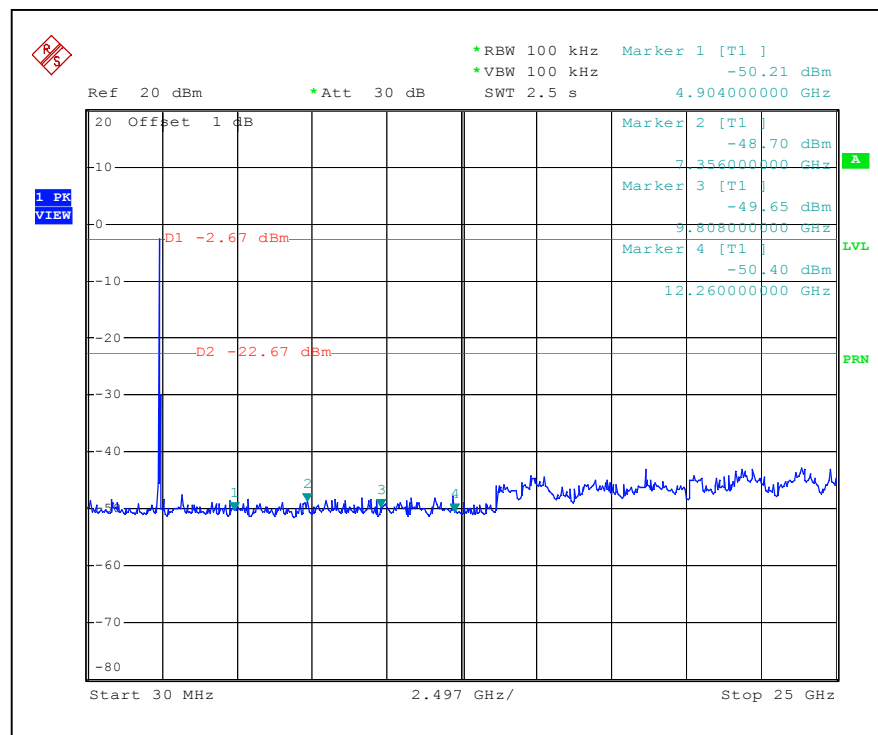
Date: 15.APR.2006 05:34:44

CH1



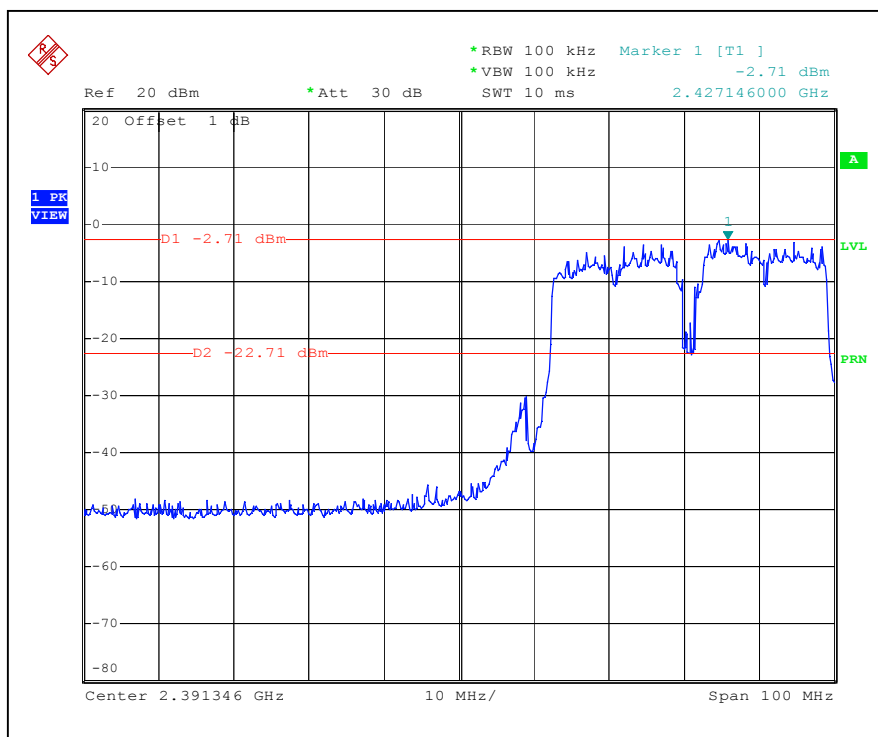
CH7

Date: 15.APR.2006 04:32:16



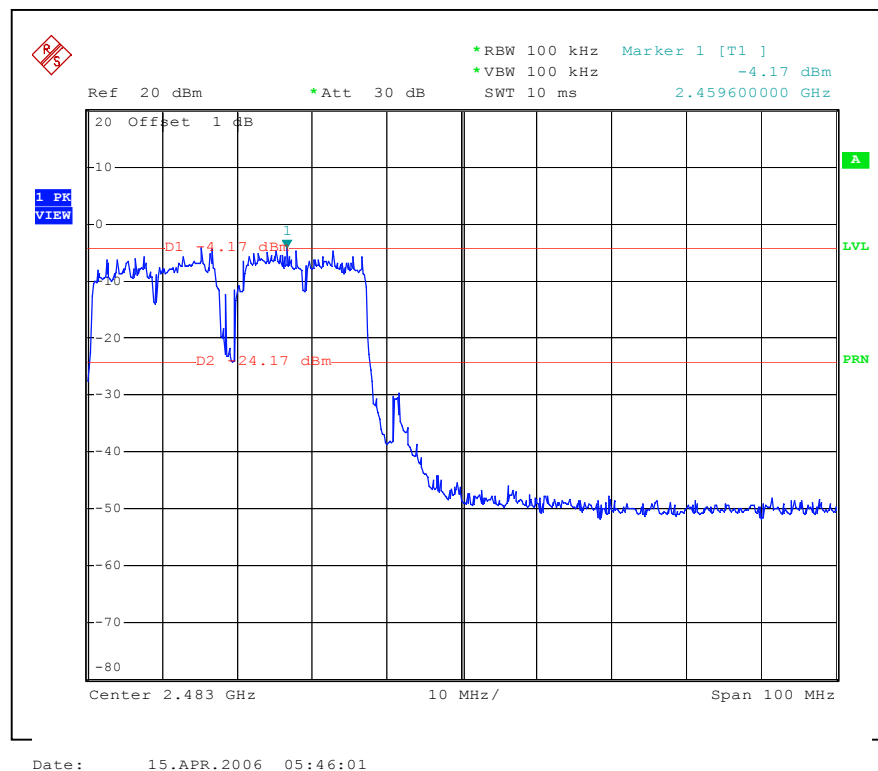
Date: 15.APR.2006 05:36:11

# FOR CHAIN 1:CH1



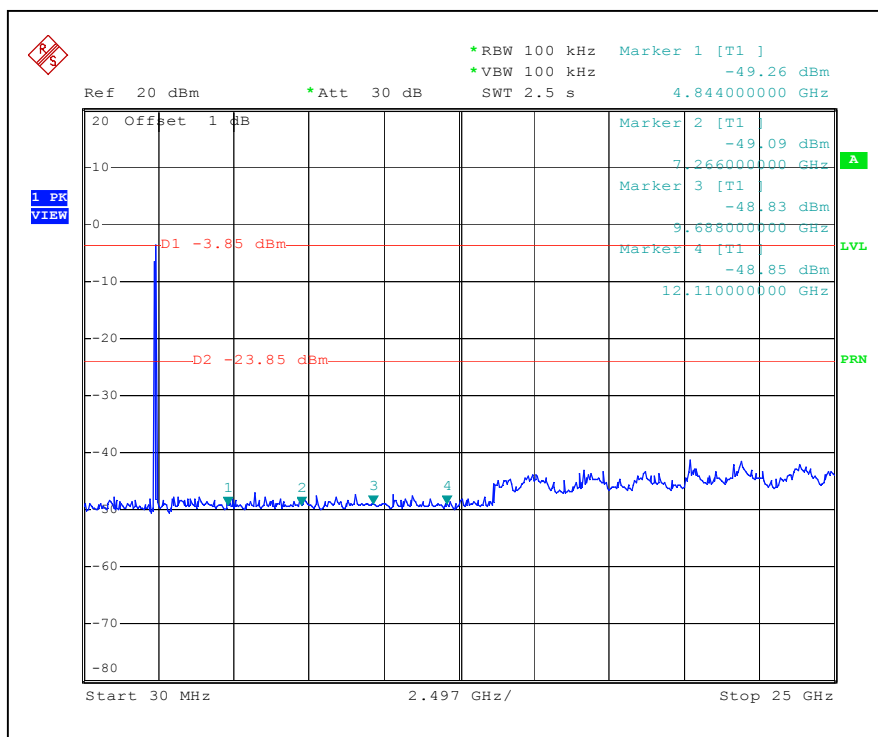
CH7

Date: 15.APR.2006 04:44:52



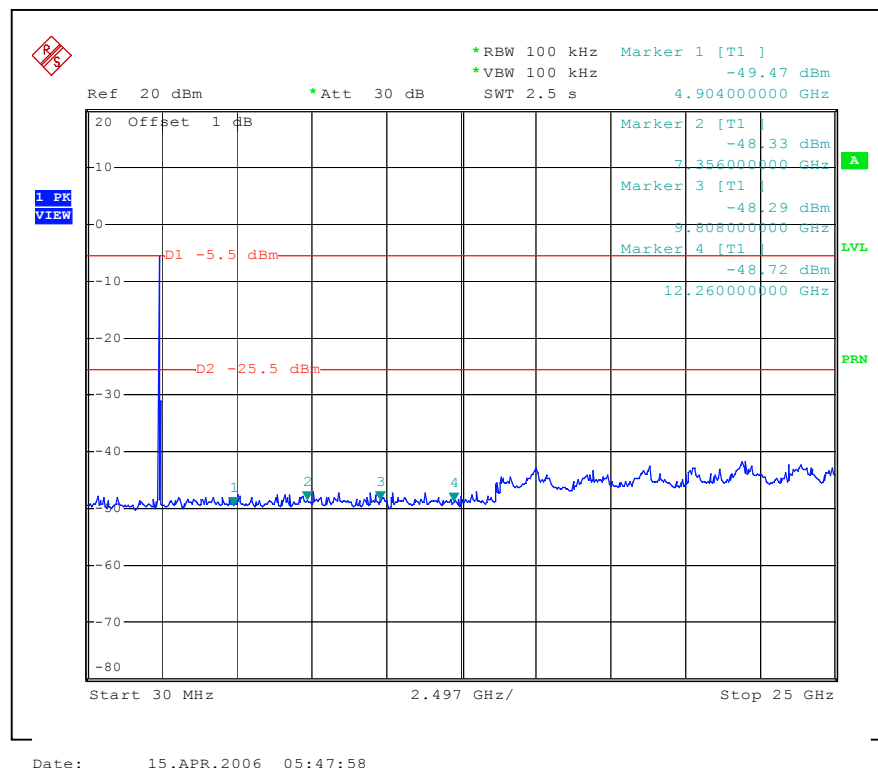
Date: 15.APR.2006 05:46:01

CH1



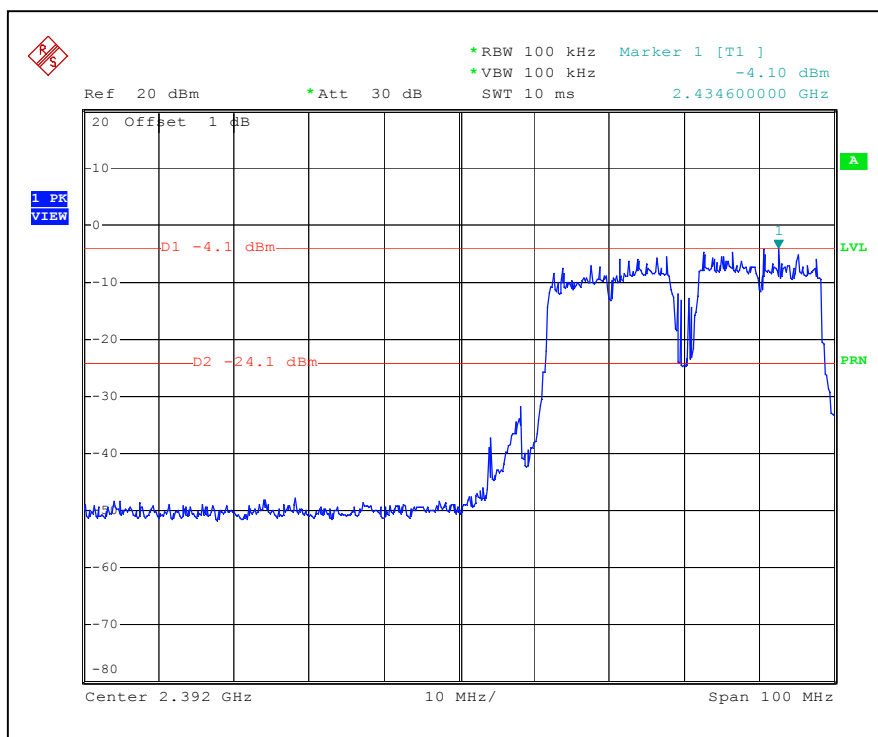
CH7

Date: 15.APR.2006 04:46:54



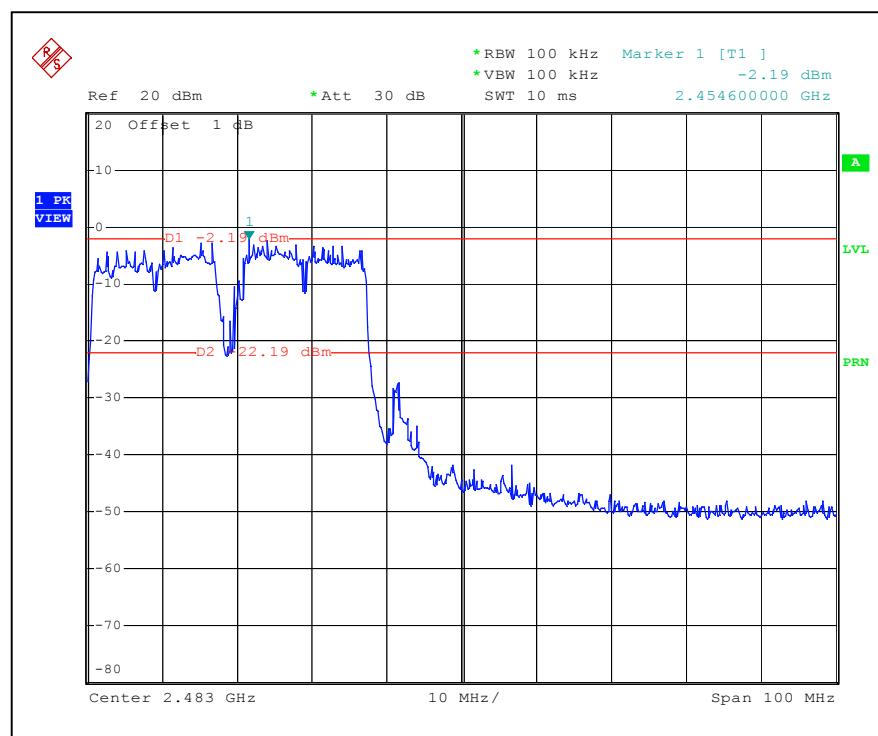
Date: 15.APR.2006 05:47:58

# **DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX: (ANTENNA 1 AND 2)** **FOR CHAIN 0:CH1**



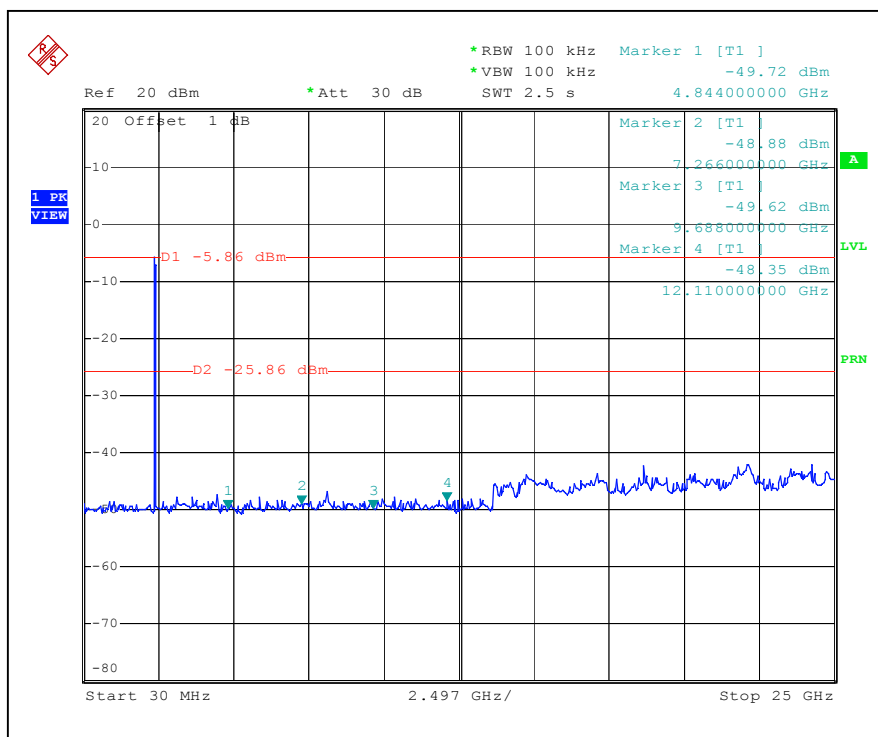
CH7

Date: 15.APR.2006 04:28:09



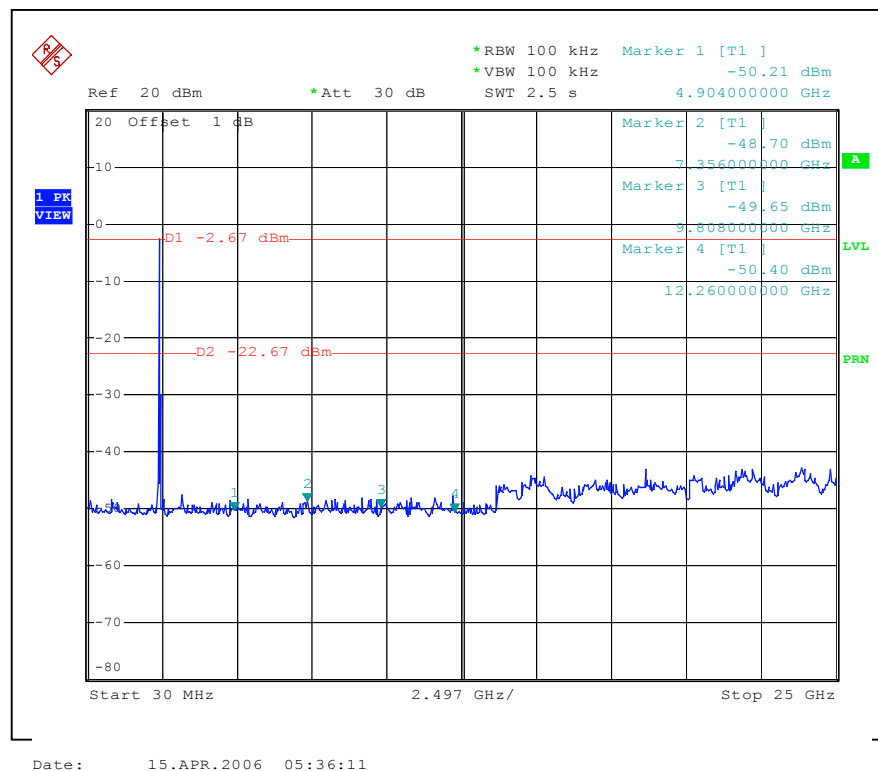
Date: 15.APR.2006 05:34:44

CH1



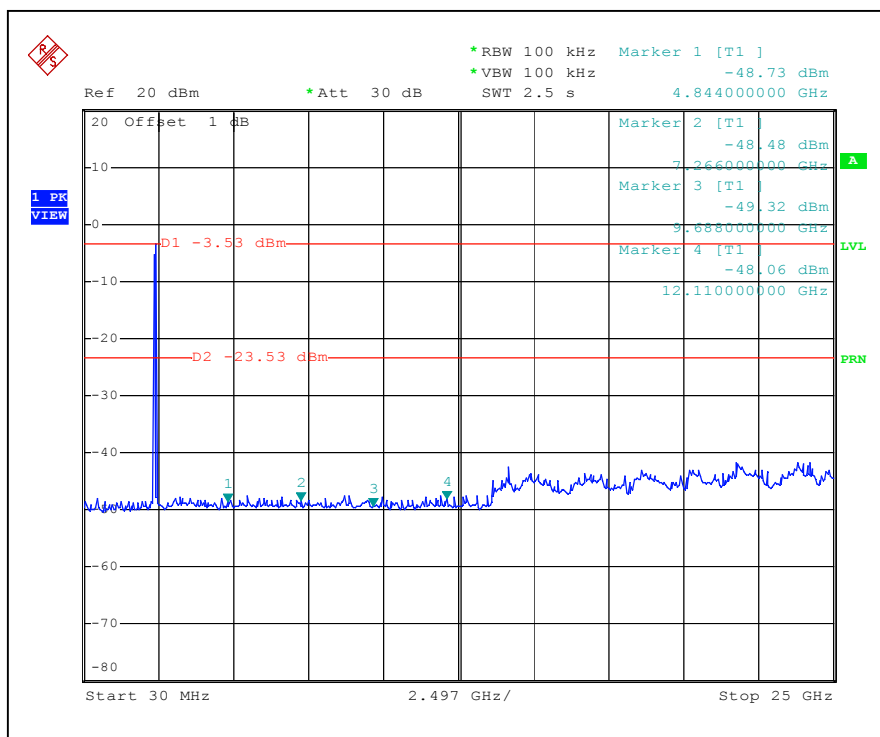
CH7

Date: 15.APR.2006 04:32:16



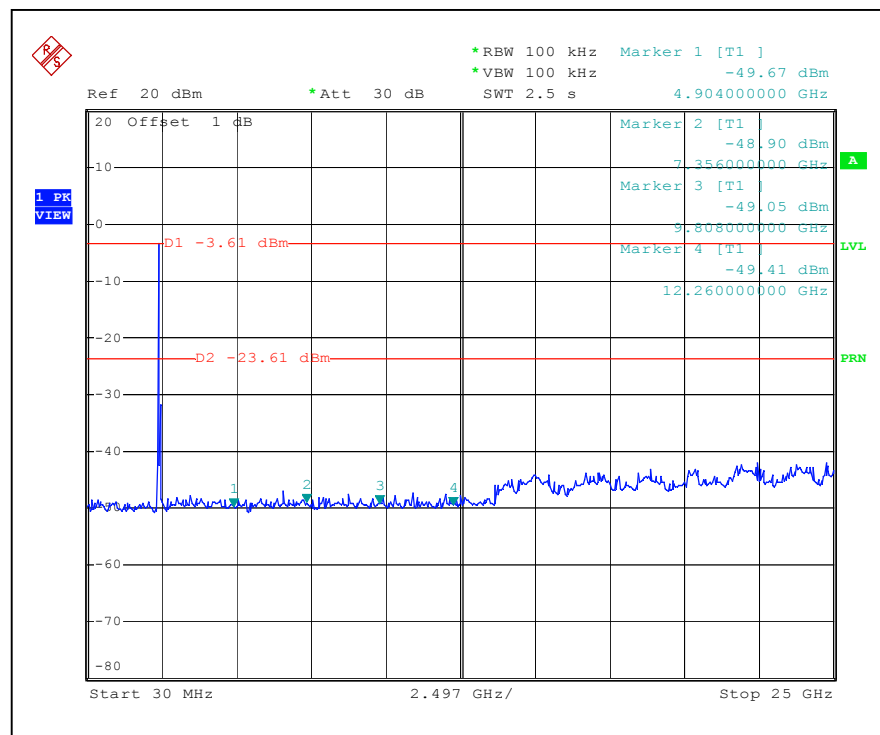


CH1



CH7

Date: 16.APR.2006 00:12:59



Date: 15.APR.2006 23:39:56

## 4.7 ANTENNA REQUIREMENT

### 4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antennas used in this product are as below.

| No. | Gain (dBi) | Antenna Type | Antenna Connector |
|-----|------------|--------------|-------------------|
| 1   | 2.0        | Dipole       | NA                |
| 2   | 1.8        | PCB monopole | NA                |
| 3   | 2.0        | Dipole       | NA                |

## 6. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., 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, UL, A2LA         |
| <b>Germany</b>     | TUV Rheinland         |
| <b>Japan</b>       | VCCI                  |
| <b>Norway</b>      | <b>NEMKO</b>          |
| <b>Canada</b>      | INDUSTRY CANADA , CSA |
| <b>R.O.C.</b>      | CNLA, BSMI, DGT       |
| <b>Netherlands</b> | Telefication          |
| <b>Singapore</b>   | PSB , 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.

## **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.