

# **FCC TEST REPORT**

**for**

**Bluetooth Headphone**

**Model No.: BT-6000**

**of**

**Applicant: J-THREE INTERNATIONAL HOLDING CO., LTD.**  
**Address: No. 23-7, Dungshyh 12 Lirn, Dungshyh Lii Pingchien City**  
**Taoyuan Hsien, Taiwan 324**

**Tested and Prepared**  
**by**



**ETS Product Service (Taiwan) Co., Ltd.**

**FCC Registration No.: 930600**

**Industry Canada filed test laboratory Reg. No. IC 5679**

**A2LA Accredited No.: 2300.01**

**PTCRB Accredited Type Certification Test House**

**FCC ID: QQGBT-6000**

**Report No.: W6M20708-8410-P-15**

Registration number: W6M20708-8410-P-15  
FCC ID : QQGBT-6000

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## **1 General Information**

### **1.1 Notes**

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has Passed all the relevant tests conforms to a specification.

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

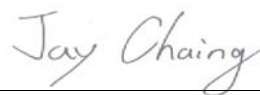
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### **Tester:**

September 27, 2007

Jay Chaing



Date

ETS-Lab.

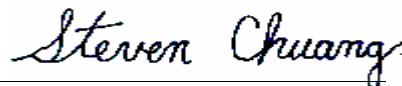
Name

Signature

### **Technical responsibility for area of testing:**

September 27, 2007

Steven Chuang



Date

ETS

Name

Signature

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## **1.2 Testing laboratory**

### **1.2.1 Location**

OATS  
No.5-1, Shuang Sing Village,  
LiShuei Rd., Wanli Township,  
Taipei County 207, Taiwan (R.O.C.)

Company  
ETS Product Service (Taiwan) Co., Ltd.  
6F, NO. 58, LANE 188, RUEY-KUANG RD.  
NEIHU, TAIPEI 114, TAIWAN R.O.C.  
Tel : 886-2-66068877  
Fax : 886-2-66068879

### **1.2.2 Details of accreditation status**

#### **Accredited testing laboratory**

**A2LA accredited number: 2300.01**

**FCC filed test laboratory Reg. No. 930600**

**Industry Canada filed test laboratory Reg. No. IC 5679**

**PCTRB Accredited Type Certification Test House**

## **1.3 Details of approval holder**

|           |                                                           |
|-----------|-----------------------------------------------------------|
| Name      | : J-THREE INTERNATIONAL HOLDING CO., LTD.                 |
| Street    | : No. 23-7, Dungshyh 12 Lirn, Dungshyh Lii Pingchien City |
| Town      | : Taoyuan Hsien,                                          |
| Country   | : Taiwan 324                                              |
| Telephone | : ./.                                                     |
| Fax       | : ./.                                                     |

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## 1.4 Application details

Date of receipt of test item : September 21, 2007  
Date of test : from September 22, 2007 to September 27, 2007

## 1.5 General information of Test item

Type of test item : Bluetooth Headphone  
Model Number : BT-6000  
Hardware : V2.0  
Software : V2.0  
Multi-listing model number : without  
Photos : see Annex

### Technical data

Frequency band : 2402 - 2480 MHz  
Frequency ( ch A) : 2.402 GHz  
Frequency ( ch B) : 2.441 GHz  
Frequency ( ch C) : 2.480 GHz

### Transmitter

### Unom

#### Normal Mode

Power ( ch A or ch 0) : Conducted: 0.78 dBm  
Power ( ch B or ch 39) : Conducted: 0.43 dBm  
Power ( ch C or ch 78) : Conducted: 0.21 dBm

Power supply adaptor      Input : 100-240 VAC 50/60Hz  
                                         Output : 5 VDC 650mA

Power supply battery : 5V

Operation modes : duplex

Modulation Type : GFSK

Antenna Type : Chip antenna

Antenna gain : -2.83 dBi

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Host device : none

Classification :

|                                              |                                     |
|----------------------------------------------|-------------------------------------|
| Fixed Device                                 | <input type="checkbox"/>            |
| Mobile Device (Human Body distance > 20cm)   | <input type="checkbox"/>            |
| Portable Device (Human Body distance < 20cm) | <input checked="" type="checkbox"/> |

**Manufacturer:**  
(if applicable)

Name : ./.  
Street : ./.  
Town : ./.  
Country : ./.

Additional information : ./.

## 1.6 Test standards

Technical standard : FCC RULES PART 15 Subpart B / SUBPART C § 15.247 (2007-05)

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## **2 Technical test**

### **2.1 Summary of test results**

No deviations from the technical specification(s) were ascertained in the course of the tests performed.



**or**

The deviations as specified in 3 were ascertained in the course of the tests performed.



### **2.2 Test environment**

|                                 |                                                       |
|---------------------------------|-------------------------------------------------------|
| Temperature                     | : 23 °C                                               |
| Relative humidity content       | : 20 ... 75 %                                         |
| Air pressure                    | : 86 ... 103 kPa                                      |
| Details of power supply adaptor | Input : 100-240 VAC 50/60Hz                           |
|                                 | Output : 5 VDC 650mA                                  |
| Details of power supply battery | : 5V                                                  |
| Extreme conditions parameters   | : test voltage : -- extreme<br>min :-- V<br>max :-- V |

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## 2.3 Test Equipment List

| No.          | Test equipment                                                      | Type            | Serial No.  | Manufacturer | Cal. Date            | Next Cal. Date |
|--------------|---------------------------------------------------------------------|-----------------|-------------|--------------|----------------------|----------------|
| ETSTW-CE 001 | EMI TEST RECEIVER                                                   | ESHS10          | 842121/013  | R&S          | 2006/10/16           | 2007/10/15     |
| ETSTW-CE 002 | PREREULATOR MODE DC POWER SUPPLY                                    | None            | None        |              | Function Test        |                |
| ETSTW-CE 003 | AC POWER SOURCE                                                     | APS-9102        | D161137     | GW           | Function Test        |                |
| ETSTW-CE 004 | ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK                     | ESH3-Z5         | 840731/011  | R&S          | 2006/10/16           | 2007/10/15     |
| ETSTW-CE 005 | Line-Impedance Stabilisation Network                                | NNBM 8126D      | 137         | Schwarzbeck  | 2006/10/16           | 2007/10/15     |
| ETSTW-CE 006 | IMPULSBEGRENZER PULSE LIMITER                                       | ESH3-Z2         | 100226      | R&S          | In House Certificate |                |
| ETSTW-CE 008 | ABSORBING CLAMP                                                     | MDS 21          | 3469        | Schwarzbeck  | 2005/10/24           | 2007/10/23     |
| ETSTW-CE 009 | TEMP.&HUMIDITY CHAMBER                                              | GTH-225-40-1P-U | MAA0305-009 | GIANT FORCE  | 2007/8/2             | 2008/8/1       |
| ETSTW-CE 013 | CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK | FCC-TLISN-T4-02 | 20242       | FCC          | 2005/12/8            | 2007/12/7      |
| ETSTW-CE 014 | CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK | FCC-TLISN-T2-02 | 20241       | FCC          | 2005/12/7            | 2007/12/6      |
| ETSTW-CE 015 | CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK | FCC-TLISN-T8-02 | 20307       | FCC          | 2006/11/7            | 2008/11/6      |
| ETSTW-CE 016 | TWO-LINE V-NETWORK                                                  | ENV216          | 100050      | R&S          | 2006/11/21           | 2007/11/20     |
| ETSTW-RE 002 | Function Generator                                                  | 33220A          | MY43004982  | Agilent      | 2005/10/14           | 2007/10/13     |
| ETSTW-RE 003 | EMI TEST RECEIVER                                                   | ESI 26          | 831438/001  | R&S          | 2006/10/20           | 2007/10/19     |
| ETSTW-RE 004 | EMI TEST RECEIVER                                                   | ESI 40          | 832427/004  | R&S          | 2006/10/30           | 2007/10/29     |
| ETSTW-RE 005 | EMI TEST RECEIVER                                                   | ESVS10          | 843207/020  | R&S          | 2006/10/12           | 2007/10/11     |
| ETSTW-RE 010 | PROGRAMMABLE LINEAR POWER SUPPLY                                    | LPS-305         | 30503070181 | MOTECH       | Function Test        |                |
| ETSTW-RE 011 | PROGRAMMABLE LINEAR POWER SUPPLY                                    | LPS-305         | 30503070165 | MOTECH       | Function Test        |                |
| ETSTW-RE 017 | Log-Periodic Antenna                                                | HL025           | 352886/001  | R&S          | 2006/5/4             | 2008/5/3       |
| ETSTW-RE 018 | MICROWAVE HORN ANTENNA                                              | AT4560          | 27212       | AR           | 2004/11/8            | 2007/11/7      |
| ETSTW-RE 020 | MICROWAVE HORN ANTENNA                                              | AT4002A         | 306915      | AR           | Function Test        |                |
| ETSTW-RE 021 | SWEEP GENERATOR                                                     | SWM05           | 835130/010  | R&S          | 2006/10/11           | 2007/10/10     |
| ETSTW-RE 027 | Passive Loop Antenna                                                | 6512            | 00034563    | EMCO         | In House Certificate |                |
| ETSTW-RE 028 | Log-Periodic Dipole Array Antenna                                   | 3148            | 34429       | EMCO         | 2006/5/26            | 2008/5/25      |
| ETSTW-RE 029 | Biconical Antenna                                                   | 3109            | 33524       | EMCO         | 2006/5/26            | 2008/5/25      |
| ETSTW-RE 030 | Double-Ridged Guide Horn Antenna                                    | 3117            | 00035224    | EMCO         | 2006/5/3             | 2008/5/2       |
| ETSTW-RE 032 | Millivoltmeter                                                      | URV 55          | 849086/013  | R&S          | 2006/10/11           | 2007/10/10     |
| ETSTW-RE 034 | Power Sensor                                                        | URV5-Z4         | 839313/006  | R&S          | 2005/10/17           | 2007/10/16     |
| ETSTW-RE 042 | Biconical Antenna                                                   | HK116           | 100172      | R&S          | 2007/1/11            | 2009/1/10      |
| ETSTW-RE 043 | Log-Periodic Dipole Antenna                                         | HL223           | 100166      | R&S          | 2006/5/8             | 2008/5/7       |



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|              |                                     |             |               |             |               |           |
|--------------|-------------------------------------|-------------|---------------|-------------|---------------|-----------|
| ETSTW-RE 044 | Log-Periodic Antenna                | HL050       | 100094        | R&S         | 2006/5/29     | 2008/5/28 |
| ETSTW-RE 048 | Triple Loop Antenna                 | HXYZ 9170   | HXYZ 9170-134 | Schwarzbeck | 2005/3/22     | 2008/3/21 |
| ETSTW-RE 049 | TRILOG Super Broadband test Antenna | VULB 9160   | 9160-3185     | Schwarzbeck | 2007/5/2      | 2009/5/1  |
| ETSTW-RE 055 | SPECTRUM ANALYZER                   | FSU-26      | 200074        | R&S         | 2007/7/16     | 2008/7/15 |
| ETSTW-RE 064 | Bluetooth Test Set                  | MT8852B-042 | 6K00005709    | Anritsu     | Function Test |           |
| ETSTW-RE 072 | CELL SITE TEST SET                  | 8921A       | 3339A00375    | HP          | 2007/7/2      | 2009/7/1  |

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## 2.4 General Test Procedure

**POWER LINE CONDUCTED INTERFERENCE:** The procedure used was ANSI STANDARD C63.4-2003 using a 50 $\mu$ H LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

**RADIATION INTERFERENCE:** The test procedure used was according to ANSI STANDARD C63.4-2003 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the UUT was 23°C with a humidity of 40 %.

**FORMULA OF CONVERSION FACTORS:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dB $\mu$ V) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

|            |                                                          |
|------------|----------------------------------------------------------|
| Freq (MHz) | METER READING + ACF + CABLE LOSS (to the receiver) = FS  |
| 33         | 20 dB $\mu$ V + 10.36 dB + 6 dB = 36.36 dB $\mu$ V/m @3m |

The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2003 Section 13.1.2. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

- (1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
- (2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
- (3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.
- (4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1)-(a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this Section, whichever is the higher frequency range of investigation.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.

Measurements were made by ETS Product Service (Taiwan) Co., Ltd. at the registered open field test site located No.5-1, Shuang Sing Village, LiShuei Rd., Wanli Township, Taipei County 207, Taiwan (R.O.C.). The Registration Number: **930600**.

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When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

The formula is as follows:

Average = Peak + Duty Factor

Duty Factor =  $20 \log (\text{dwell time}/T)$

T = 100ms when the pulse train period is over 100 ms or the period of the pulse train.

Modified Limits for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

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### 3 Test results (enclosure)

| TEST CASE                                            | Para. Number     | Required                            | Test passed                         | Test failed              |
|------------------------------------------------------|------------------|-------------------------------------|-------------------------------------|--------------------------|
| Peak Output Power                                    | 15.247(b)        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Equivalent radiated Power                            | 15.247(b)        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Spurious Emissions radiated – Transmitter operating  | 15.247(c)        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Spurious Emissions conducted – Transmitter operating | 15.247           | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| Carrier Frequency Separation                         | 15.247(a) (1)    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Number of Hopping Frequencies                        | 15.247(a) (1)(i) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Time of Occupancy (Dwell Time)                       | 15.247(a) (1)(i) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 20 dB Bandwidth                                      | 15.247(a) (1)(i) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Band-edge Compliance of RF Emission                  | 15.247(c)        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Radiated Emission from Digital Part                  | 15.109           | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| Power Line Conducted Emission                        | 15.207(a)        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The follows is intended to leave blank.

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### 3.1 Peak Output Power (transmitter)

FCC Rule: 15.247

This measurement applies to equipment with an integral antenna and to equipment with an antenna connector and equipped with an antenna as declared by the applicant.

The power was measured with modulation (declared by the applicant).

| Test conditions                |                        | Conducted Power    |                    |                    |
|--------------------------------|------------------------|--------------------|--------------------|--------------------|
|                                |                        | Channel A<br>[dBm] | Channel B<br>[dBm] | Channel C<br>[dBm] |
| $T_{nom} = 23^{\circ}\text{C}$ | $V_{nom} = 5\text{ V}$ | 0.78               | 0.43               | 0.21               |

| Test conditions         |                         | Radiated Power     |                    |                    |
|-------------------------|-------------------------|--------------------|--------------------|--------------------|
|                         |                         | Channel A<br>[dBm] | Channel B<br>[dBm] | Channel C<br>[dBm] |
| $T_{nom} = \text{-- C}$ | $V_{nom} = \text{-- V}$ | --                 | --                 | --                 |

| Test conditions                                                  | Signal Field strength TX highest power mode |
|------------------------------------------------------------------|---------------------------------------------|
| $T_{nom} = \text{-- }^{\circ}\text{C}$ , $V_{nom} = \text{-- V}$ | dB $\mu\text{V/m}$                          |
| Frequency[MHz]                                                   |                                             |
| --                                                               | --                                          |
| Measurement uncertainty                                          | < 3 dB                                      |

Explanation: The diagrams for the peak output power measurements are included in Appendix.

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## Maximum Peak Output Power

Limits:

| Frequency<br>MHz | Number of hopping channels |           |              |              |
|------------------|----------------------------|-----------|--------------|--------------|
|                  | $\geq 75$                  | $\geq 50$ | $49 \geq 25$ | $74 \geq 15$ |
| 902-928          |                            | 30 dBm    | 24 dBm       |              |
| 2400-2483.5 MHz  | 30 dBm                     | -         |              | 21 dbm       |
| 5725-5850 MHz    | 30 dBm                     | -         |              |              |

In case of employing transmitter antennas having antenna gain >dBi and using fixed poin-to point operation consider §15.247 (b)(4).

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064

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### **3.2 Equivalent isotropic radiated power**

FCC Rule: 15.239(b), 15.35

Because using an internal antenna there are no deviations from the radiated test results according 3.1.

### **3.3 RF Exposure Compliance Requirements**

According to Supplement C, Edition 01-01 to OET Bulletin 65, Edition 97-01 this spread spectrum transmitter is categorically excluded from routine environmental evaluation because of the low power level, where there is a high likelihood of compliance with RF exposure standards.

The antenna used for this Bluetooth transceiver module must not be co-located or operating in conjunction with any other antenna or transmitter.

### **3.4 Out of Band Radiated Emissions**

FCC Rule: 15.247(c) , 15.35

For out of band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the general radiated emission requirement.

Limits:

For frequencies below 1GHz :

Max. reading – 20 dB

$93.42 \text{ dB}\mu\text{V/m} - 20 \text{ dB} = 73.42 \text{ dB}\mu\text{V/m}$

Guidance on Measurement of FHSS Systems:

“If the emission is pulsed, modify the unit for continuous operation , use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.” Here the correction was added to the limit instead subtracted from the reading.

Duty Cycle correction =  $20 \log (\text{dwell time}/100\text{ms})$

For frequencies above 1GHz (Peak measurements).

Limit = max. aver. reading-20dB +20dB(because Peak detector is used)

$73.42 \text{ dB}\mu\text{V/m}$

For frequencies above 1GHz (Average measurements).

Max. reading – 20 dB - duty cycle correction:

No duty cycle correction was added to the reading

$93.42 \text{ dB}\mu\text{V/m} - 20 \text{ dB} = 73.42 \text{ dB}\mu\text{V/m}$

Explanation: See attached diagrams.

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 021 ETSTW-RE 028  
ETSTW-RE 030 ETSTW-RE 043 ETSTW-RE 044 ETSTW-RE 064

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### 3.5 Transmitter Radiated Emissions in restricted Bands

FCC Rules: 15.247 (c), 15.205, 15.209, 15.35

Radiated emission measurements were performed from 30 MHz to 26000 MHz.

For radiated emission tests, the analyzer setting was as followings:

RES BW VID BW

Frequency <1 GHz 100 kHz 100 kHz (Peak measurements)

Frequency >1 GHz 1 MHz 1 MHz (Peak measurements)

1 MHz 1 MHz (Average measurements)

Limits:

For frequencies below 1GHz :

| Frequency of Emission<br>(MHz) | Field strength<br>(microvolts/meter) | Field Strength<br>(dB microvolts/meter) |
|--------------------------------|--------------------------------------|-----------------------------------------|
| 30 – 88                        | 100                                  | 40.0                                    |
| 88 – 216                       | 150                                  | 43.5                                    |
| 216 – 960                      | 200                                  | 46.0                                    |
| Above 960                      | 500                                  | 54.0                                    |

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of FHSS Systems:

“If the emission is pulsed, modify the unit for continuous operation , use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.” Here the correction was added to the limit instead subtracted from the reading.

Duty cycle correction =  $20 \log (\text{dwell time}/100\text{ms})$

For frequencies above 1GHz (Average measurements).

Limit – duty cycle correction

No duty cycle correction was added to the reading.

54.0dBμV/m

For frequencies above 1GHz (Peak measurements).

Limit + 20dB

54.0dBμV/m + 20 dB= 74 dBμV/m

Explanation: See attached diagrams.

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028  
ETSTW-RE 029 ETSTW-RE 030 ETSTW-RE 042 ETSTW-RE 043  
ETSTW-RE 044 ETSTW-RE 064



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### 3.6 Spurious emissions (tx)

Spurious emission was measured with modulation (declared by manufacturer).

In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c))

SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance to point 2.3.

Calculation of test results:

Such factors like antenna correction, cable loss, external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

The peak and average spurious emission plots was measured with the average limits.

In the Table being listed the critical peak and average value an exhibit the compliance with the above calculated Limits.

If in the column's correction factor states a value then the max. Field strength in the same row is corrected by a value gained from the "Marker-Delta-Method" or the „Duty-Cycle Correction Factor“.

#### Summary table with radiated data of the test plots

Model: BT-6000 Date: 2007/9/10  
Mode: ch0 Tx Mode Temperature: 26.00 °C Engineer: Derek  
Polarization: Horizontal Humidity: 60.00 %

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) | Note |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|------|
| 135.51          | 6.59           | peak     | 14.49       | 21.08           | 43.50          | -22.42      | 60                  | 320            |      |
| 281.60          | 19.35          | peak     | 14.87       | 34.22           | 46.00          | -11.78      | 210                 | 300            |      |
| 608.62          | 13.16          | peak     | 22.22       | 35.38           | 46.00          | -10.62      | 250                 | 125            |      |
| 971.94          | 6.03           | peak     | 27.23       | 33.26           | 54.00          | -20.74      | 320                 | 130            |      |

Polarization: Vertical

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) | Note |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|------|
| 127.39          | 8.62           | peak     | 13.92       | 22.54           | 43.50          | -20.96      | 220                 | 100            |      |
| 284.31          | 16.50          | peak     | 14.93       | 31.43           | 46.00          | -14.57      | 200                 | 140            |      |
| 610.02          | 10.11          | peak     | 22.22       | 32.33           | 46.00          | -13.67      | 200                 | 335            |      |
| 998.60          | 8.39           | peak     | 27.39       | 35.78           | 54.00          | -18.22      | 100                 | 300            |      |

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Polarization: Horizontal

| Frequency<br>(MHz) | Reading<br>(dBuV)<br>Peak Ave. |       | Factor<br>(dB)<br>Corr. | Result @3m<br>(dBuV/m)<br>Peak Ave. |       | Limit @3m<br>(dBuV/m)<br>Peak Ave. |       | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|--------------------------------|-------|-------------------------|-------------------------------------|-------|------------------------------------|-------|----------------|---------------------------|----------------------|------|
| 1603.21            | 49.05                          | ---   | -9.39                   | 39.66                               | ---   | 74.00                              | 54.00 | -34.34         | 260                       | 150                  |      |
| 4801.60            | 62.96                          | ---   | -1.30                   | 61.66                               | ---   | 74.00                              | 54.00 | -12.34         | 260                       | 150                  |      |
| 4804.06            | --                             | 48.99 | -1.30                   | --                                  | 47.69 | 74.00                              | 54.00 | -6.31          | 260                       | 150                  |      |

Polarization: Vertical

| Frequency<br>(MHz) | Reading<br>(dBuV)<br>Peak Ave. |       | Factor<br>(dB)<br>Corr. | Result @3m<br>(dBuV/m)<br>Peak Ave. |       | Limit @3m<br>(dBuV/m)<br>Peak Ave. |       | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|--------------------------------|-------|-------------------------|-------------------------------------|-------|------------------------------------|-------|----------------|---------------------------|----------------------|------|
| 1603.20            | 46.29                          | ---   | -9.39                   | 36.90                               | ---   | 74.00                              | 54.00 | -37.10         | 260                       | 150                  |      |
| 4801.60            | 58.94                          | 48.07 | -1.30                   | 57.64                               | 46.77 | 74.00                              | 54.00 | -3.64          | 260                       | 150                  |      |

Model: BT-6000

Date: 2007/9/10

Mode: Ch39 Tx Mode

Temperature: 26.00 °C

Engineer: Derek

Polarization: Horizontal

Humidity: 60.00 %

| Frequency<br>(MHz) | Reading<br>(dBuV) | Detector | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|-------------------|----------|----------------|--------------------|-------------------|----------------|---------------------------|----------------------|------|
| 108.46             | 11.47             | peak     | 12.23          | 23.70              | 43.50             | -19.80         | 65                        | 310                  |      |
| 280.52             | 20.47             | peak     | 14.85          | 35.32              | 46.00             | -10.68         | 200                       | 300                  |      |
| 610.02             | 13.12             | peak     | 22.22          | 35.34              | 46.00             | -10.66         | 255                       | 125                  |      |
| 987.37             | 6.50              | peak     | 27.31          | 33.81              | 54.00             | -20.19         | 310                       | 125                  |      |

Polarization: Vertical

| Frequency<br>(MHz) | Reading<br>(dBuV) | Detector | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|-------------------|----------|----------------|--------------------|-------------------|----------------|---------------------------|----------------------|------|
| 119.28             | 7.95              | peak     | 13.34          | 21.29              | 43.50             | -22.21         | 200                       | 100                  |      |
| 273.49             | 14.29             | peak     | 14.59          | 28.88              | 46.00             | -17.12         | 195                       | 130                  |      |
| 608.62             | 10.22             | peak     | 22.22          | 32.44              | 46.00             | -13.56         | 205                       | 330                  |      |
| 992.99             | 8.30              | peak     | 27.35          | 35.65              | 54.00             | -18.35         | 105                       | 300                  |      |

Polarization: Horizontal

| Frequency<br>(MHz) | Reading<br>(dBuV)<br>Peak Ave. |       | Factor<br>(dB)<br>Corr. | Result @3m<br>(dBuV/m)<br>Peak Ave. |       | Limit @3m<br>(dBuV/m)<br>Peak Ave. |       | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|--------------------------------|-------|-------------------------|-------------------------------------|-------|------------------------------------|-------|----------------|---------------------------|----------------------|------|
| 1601.20            | 49.06                          | ---   | -9.40                   | 39.66                               | ---   | 74.00                              | 54.00 | -34.34         | 260                       | 150                  |      |
| 4881.76            | 62.26                          | 49.80 | -1.30                   | 60.96                               | 48.50 | 74.00                              | 54.00 | -6.96          | 260                       | 150                  |      |

Registration number: W6M20708-8410-P-15  
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Polarization: Vertical

| Frequency<br>(MHz) | Reading<br>(dBuV)<br>Peak Ave. |     | Factor<br>(dB)<br>Corr. | Result @3m<br>(dBuV/m)<br>Peak Ave. |      | Limit @3m<br>(dBuV/m)<br>Peak Ave. |    | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|--------------------------------|-----|-------------------------|-------------------------------------|------|------------------------------------|----|----------------|---------------------------|----------------------|------|
| 1601.202           | 46.59                          | --- | -9.40                   | 37.19                               | ---  | 74                                 | 54 | -36.81         | 260                       | 150                  |      |
| 4881.764           | 59.91                          | 49  | -1.30                   | 58.61                               | 47.7 | 74                                 | 54 | -4.61          | 260                       | 150                  |      |

Model: BT-6000 Date: 2007/9/10  
Mode: Ch78 Tx Mode Temperature: 26.00 °C Engineer: Derek  
Polarization: Horizontal Humidity: 60.00 %

| Frequency<br>(MHz) | Reading<br>(dBuV) | Detector | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|-------------------|----------|----------------|--------------------|-------------------|----------------|---------------------------|----------------------|------|
| 114.95             | 11.35             | peak     | 12.88          | 24.23              | 43.50             | -19.27         | 60                        | 315                  |      |
| 282.69             | 19.98             | peak     | 14.89          | 34.87              | 46.00             | -11.13         | 205                       | 300                  |      |
| 610.020            | 12.03             | peak     | 22.22          | 34.25              | 46                | -11.75         | 315                       | 130                  |      |
| 988.778            | 6.38              | peak     | 27.32          | 33.70              | 54                | -20.30         | 260                       | 130                  |      |

Polarization: Vertical

| Frequency<br>(MHz) | Reading<br>(dBuV) | Detector | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|-------------------|----------|----------------|--------------------|-------------------|----------------|---------------------------|----------------------|------|
| 127.39             | 8.21              | peak     | 13.92          | 22.13              | 43.50             | -21.37         | 220                       | 105                  |      |
| 281.60             | 15.32             | peak     | 14.87          | 30.19              | 46.00             | -15.81         | 190                       | 135                  |      |
| 608.617            | 10.82             | peak     | 22.22          | 33.04              | 46                | -12.96         | 200                       | 330                  |      |
| 1000.000           | 7.43              | peak     | 27.40          | 34.83              | 54                | -19.17         | 105                       | 300                  |      |

Polarization: Horizontal

| Frequency<br>(MHz) | Reading<br>(dBuV)<br>Peak Ave. |       | Factor<br>(dB)<br>Corr. | Result @3m<br>(dBuV/m)<br>Peak Ave. |       | Limit @3m<br>(dBuV/m)<br>Peak Ave. |    | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|--------------------------------|-------|-------------------------|-------------------------------------|-------|------------------------------------|----|----------------|---------------------------|----------------------|------|
| 1627.255           | 47.81                          | ---   | -9.29                   | 38.52                               | ---   | 74                                 | 54 | -35.48         | 260                       | 150                  |      |
| 4953.908           | 61.28                          | 47.26 | -1.08                   | 60.20                               | 46.18 | 74                                 | 54 | -6.20          | 260                       | 150                  |      |

Polarization: Vertical

| Frequency<br>(MHz) | Reading<br>(dBuV)<br>Peak Ave. |       | Factor<br>(dB)<br>Corr. | Result @3m<br>(dBuV/m)<br>Peak Ave. |       | Limit @3m<br>(dBuV/m)<br>Peak Ave. |    | Margin<br>(dB) | Table<br>Degree<br>(Deg.) | Ant.<br>High<br>(cm) | Note |
|--------------------|--------------------------------|-------|-------------------------|-------------------------------------|-------|------------------------------------|----|----------------|---------------------------|----------------------|------|
| 1627.255           | 45.44                          | ---   | -9.29                   | 36.15                               | ---   | 74                                 | 54 | -37.85         | 260                       | 150                  |      |
| 4961.924           | 58.83                          | 49.16 | -1.05                   | 57.78                               | 48.11 | 74                                 | 54 | -3.78          | 260                       | 150                  |      |

- Note**
1. Correction Factor = Antenna factor + Cable loss - Preamplifier
  2. The formula of measured value as: Test Result = Reading + Correction Factor
  3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
  4. All not in the table noted test results are more than 20 dB below the relevant limits.

All other not noted test plots do not contain significant test results in relation to the limits.

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**TEST RESULT (Transmitter):** The unit DOES meet the FCC requirements.

Explanation: see attached diagrams

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028  
ETSTW-RE 029 ETSTW-RE 030 ETSTW-RE 042 ETSTW-RE 043  
ETSTW-RE 044 ETSTW-RE 064

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### 3.7 Carrier Frequency Separation

Carrier Frequency Separation was measured with modulation (declared by manufacturer).

According to FCC rules part 15 subpart C §15.247 frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or 20 dB bandwidth of the hopping channel, whichever is greater.

| Test conditions                |                        | Channel Separation |             |
|--------------------------------|------------------------|--------------------|-------------|
|                                |                        | Channel 0          | Channel 0+1 |
| $T_{nom} = 23^{\circ}\text{C}$ | $V_{nom} = 5\text{ V}$ | 0.9871 MHz         |             |

| Test conditions                |                        | Channel Separation |              |
|--------------------------------|------------------------|--------------------|--------------|
|                                |                        | Channel 39         | Channel 39+1 |
| $T_{nom} = 23^{\circ}\text{C}$ | $V_{nom} = 5\text{ V}$ | 0.9935 MHz         |              |

| Test conditions                |                        | Channel Separation |              |
|--------------------------------|------------------------|--------------------|--------------|
|                                |                        | Channel 78         | Channel 78+1 |
| $T_{nom} = 23^{\circ}\text{C}$ | $V_{nom} = 5\text{ V}$ | 0.9935 MHz         |              |

#### Limits:

| Frequency Range<br>MHz     | Limits                   |                          |
|----------------------------|--------------------------|--------------------------|
|                            | 20 dB bandwidth < 25 kHz | 20 dB bandwidth > 25 kHz |
| 902-928                    | 25 kHz                   | 20 dB bandwidth          |
| 2400-2483.5<br>5725-5850.0 | 25 kHz                   | 20 dB bandwidth          |

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064

Explanation: see attached diagram

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### 3.8 Number of Hopping Frequencies

According to FCC rules part 15 subpart C §15.247 frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies. Frequency hopping systems in 5725-5850 MHz bands shall use least 75 hopping frequencies.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies; if the 20dB bandwidth of the hopping channel 250 kHz or greater, the system shall use at least 25 hopping frequencies.

| Test conditions                |                        | Operating Mode      | Number of Channels |
|--------------------------------|------------------------|---------------------|--------------------|
| $T_{nom} = 23^{\circ}\text{C}$ | $V_{nom} = 5\text{ V}$ | normal transmitting | 79                 |
| $T_{nom} = 23^{\circ}\text{C}$ | $V_{nom} = 5\text{ V}$ | Inquiry mode        | 32                 |

#### Limits:

| Frequency Range<br>MHz | Limit          |      |                             |                             |
|------------------------|----------------|------|-----------------------------|-----------------------------|
|                        | 20dB Bandwidth |      | 20dB Bandwidth<br>< 250 kHz | 20dB Bandwidth<br>≥ 250 kHz |
|                        | ≤ 1MHz         |      |                             |                             |
| 902-928 MHz            |                |      | ≥ 50                        | ≥ 25                        |
| 2400-2483.5            | ≥ 15           | ≥ 15 |                             |                             |
| 5725-5850.0 MHz        | ≥ 75           |      |                             |                             |

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064

Explanation: see attached diagrams

#### 3.8.1 Pseudorandom Frequency Hopping Sequence

The generation of the hopping sequence is determined by the Bluetooth cord specification and complies with the FCC requirements.

#### 3.8.2 Coordination of hopping sequences to other transmitters

According to the Bluetooth core specification V1.1 such a coordination is not possible. During scatternet function only one of the two hopping sequences will be used at a definite moment.

#### 3.8.3 System Receiver Hopping Capability

According to the Bluetooth core specification. The system receivers shift frequencies in synchronization with the transmitted signals.

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### 3.9 Time of Occupancy (Dwell Time)

Frequency hopping systems operating in the 5725-5850 MHz band shall use an average time of occupancy on any frequency not greater than 0.4 seconds within a 30 second period.

In 2400-2483,5 MHz band the average time of occupancy on any channel shall not be greater than 0,4 seconds multiplied by the number of hopping channels employed.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the average time of occupancy on any frequency shall not greater than 0.4 seconds within a 20 second period; if the 20dB bandwidth of the hopping channel is 250 kHz or greater, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

| Test conditions                                                       | Operating mode           | Measurement period | Time of Occupancy |
|-----------------------------------------------------------------------|--------------------------|--------------------|-------------------|
| $T_{nom} = 23^{\circ}\text{C}$<br>$V_{nom} = 5\text{ V}$<br>Channel 0 | normal transmitting-DH 1 | 31.6               | 139.2 ms          |
|                                                                       | normal transmitting-DH 3 | 31.6               | 204.6 ms          |
|                                                                       | normal transmitting-DH 5 | 31.6               | 266.49 ms         |

| Test conditions                                                        | Operating mode           | Measurement period | Time of Occupancy |
|------------------------------------------------------------------------|--------------------------|--------------------|-------------------|
| $T_{nom} = 23^{\circ}\text{C}$<br>$V_{nom} = 5\text{ V}$<br>Channel 39 | normal transmitting-DH 1 | 31.6               | 147.84 ms         |
|                                                                        | normal transmitting-DH 3 | 31.6               | 222.43 ms         |
|                                                                        | normal transmitting-DH 5 | 31.6               | 297.4 ms          |

| Test conditions                                                        | Operating mode           | Measurement period | Time of Occupancy |
|------------------------------------------------------------------------|--------------------------|--------------------|-------------------|
| $T_{nom} = 23^{\circ}\text{C}$<br>$V_{nom} = 5\text{ V}$<br>Channel 78 | normal transmitting-DH 1 | 31.6               | 134.85 ms         |
|                                                                        | normal transmitting-DH 3 | 31.6               | 187.55 ms         |
|                                                                        | normal transmitting-DH 5 | 31.6               | 296.7 ms          |

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**Limits and measurement periods:**

| Frequency MHz | Number of channels | Measurement Period              | Limit |
|---------------|--------------------|---------------------------------|-------|
| 902 – 928     | $\geq 50$          | 20 s                            | 0,4 s |
|               | $49 \geq 25$       | 10 s                            | 0,4 s |
| 2400 – 2483,5 | $\geq 15$          | 0,4 s * number of used channels | 0,4 s |
| 5725- 5850    | $\geq 75$          | 30 s                            | 0,4s  |

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064

Explanation: See attached diagram, which show the On-time and the number of counted events during the measurement period



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### 3.10 20dB Bandwidth

Frequency hopping systems operating in the 5725-5850 MHz bands shall use a maximum 20dB bandwidth of 1 MHz.

The 20dB bandwidth is measured on the lowest, middle and highest hopping channel.

For frequency hopping systems operating in the 902-928 MHz band the maximum 20dB bandwidth of the hopping channel is 500 kHz.

| Test conditions                |                        | 20 dB Bandwidth   |                   |                   |
|--------------------------------|------------------------|-------------------|-------------------|-------------------|
|                                |                        | Channel A         | Channel B         | Channel C         |
| $T_{nom} = 23^{\circ}\text{C}$ | $V_{nom} = 5\text{ V}$ | 980.769230769 kHz | 974.358974359 kHz | 974.358974359 kHz |

#### Limits:

| Frequency Range / MHz | Number of channels | Limit                                |
|-----------------------|--------------------|--------------------------------------|
| 902-928               | $< 50$             | $< 250\text{ kHz}$                   |
|                       | $49 \geq 25$       | $500\text{ kHz} \geq 250\text{ kHz}$ |
| 2400-2483.5           | $\geq 15$          | not determined                       |
| 5725-5850             | 75                 | $\leq 1\text{ MHz}$                  |

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055 ETSTW-RE 064

Explanation: See attached diagram

#### 3.10.1 System Receiver Input Bandwidth

It is determined in the Bluetooth core specification. The value matches to the bandwidth of transmitter signal.

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### 3.11 Band-edge Compliance of RF Emissions

According to FCC rules part 15 subpart C §15.247(c) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required.

In addition radiated emission which fall in the restricted bands, as defined in section 15.205(a), must also with the radiated emission limits.

| Test conditions                |                         | Attenuation at or outside band-edges<br>Single Frequency |                 |
|--------------------------------|-------------------------|----------------------------------------------------------|-----------------|
|                                |                         | Lower Band-edge                                          | Upper Band-edge |
| $T_{nom} = 23^{\circ}\text{C}$ | $V_{nom} = 5 \text{ V}$ | 49.82 dB                                                 | 46.66 dB        |

| Test conditions                |                         | Attenuation at or outside band-edges<br>Hopping Frequency |                 |
|--------------------------------|-------------------------|-----------------------------------------------------------|-----------------|
|                                |                         | Lower Band-edge                                           | Upper Band-edge |
| $T_{nom} = 23^{\circ}\text{C}$ | $V_{nom} = 5 \text{ V}$ | 44.93 dB                                                  | 46.78 dB        |

#### Limits:

| Frequency Range / MHz | Limit   |
|-----------------------|---------|
| 902 – 928             | - 20 dB |
| 2400 – 2483.5         |         |
| 5725 - 5850           |         |

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028  
ETSTW-RE 030 ETSTW-RE 043 ETSTW-RE 044 ETSTW-RE 064

Explanation: See attached diagrams

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### 3.12 Radiated Emissions from Digital Part

FCC Rule: 15.109

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

| Frequency of Emission<br>(MHz) | Field Strength<br>(microvolts/meter) | Field Strength<br>(dBmicrovolts/meter) |
|--------------------------------|--------------------------------------|----------------------------------------|
| 30 – 88                        | 100                                  | 40.0                                   |
| 88 – 216                       | 150                                  | 43.5                                   |
| 216 – 960                      | 200                                  | 46.0                                   |
| Above 960                      | 500                                  | 54.0                                   |

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028  
ETSTW-RE 029 ETSTW-RE 030 ETSTW-RE 042 ETSTW-RE 043  
ETSTW-RE 044 ETSTW-RE 064

Explanation: The test is not required because the EUT is not connect with PC.

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### 3.13 Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

| Frequency | Level (dB $\mu$ V) |                  |
|-----------|--------------------|------------------|
|           | quasi-peak         | average          |
| 150 kHz   | lower limit line   | Lower limit line |

Model: BT-6000

Date: 2007/9/17

Mode:

Temperature: 26 °C

Engineer: Derek

Polarization: N

Humidity: 60 %

| Frequency<br>(MHz) | Reading<br>(dB $\mu$ V) |       | Factor<br>(dB)<br>Corr. | Result<br>(dB $\mu$ V) |       | Limit<br>(dB $\mu$ V) |       | Margin<br>(dB) | Note |
|--------------------|-------------------------|-------|-------------------------|------------------------|-------|-----------------------|-------|----------------|------|
|                    | QP                      | Ave.  |                         | QP                     | Ave.  | QP                    | Ave.  |                |      |
| 0.1807             | 29.87                   | 22.64 | 10.10                   | 39.97                  | 32.74 | 64.45                 | 54.45 | -21.71         |      |
| 0.3592             | 37.24                   | 29.68 | 10.10                   | 47.34                  | 39.78 | 58.75                 | 48.75 | -8.97          |      |
| 0.9                | 32.33                   | 24.87 | 10.10                   | 42.43                  | 34.97 | 56                    | 46    | -11.03         |      |
| 2.645              | 32.05                   | 24.36 | 10.10                   | 42.15                  | 34.46 | 56                    | 46    | -11.54         |      |
| 5.3611             | 17.65                   | 8.73  | 10.10                   | 27.75                  | 18.83 | 60                    | 50    | -31.17         |      |
| 27                 | 4.47                    | 0.23  | 10.10                   | 14.57                  | 10.33 | 60                    | 50    | -39.67         |      |

Polarization: L1

| Frequency<br>(MHz) | Reading<br>(dB $\mu$ V) |       | Factor<br>(dB)<br>Corr. | Result<br>(dB $\mu$ V) |       | Limit<br>(dB $\mu$ V) |       | Margin<br>(dB) | Note |
|--------------------|-------------------------|-------|-------------------------|------------------------|-------|-----------------------|-------|----------------|------|
|                    | QP                      | Ave.  |                         | QP                     | Ave.  | QP                    | Ave.  |                |      |
| 0.1815             | 32.73                   | 24.75 | 10.10                   | 42.83                  | 34.85 | 64.42                 | 54.42 | -19.57         |      |
| 0.3608             | 40.86                   | 32.82 | 10.10                   | 50.96                  | 42.92 | 58.71                 | 48.71 | -5.79          |      |
| 0.9                | 35.22                   | 27.75 | 10.10                   | 45.32                  | 37.85 | 56                    | 46    | -8.15          |      |
| 2.645              | 34.98                   | 27.09 | 10.10                   | 45.08                  | 37.19 | 56                    | 46    | -8.81          |      |
| 5.9444             | 21.58                   | 11.89 | 10.10                   | 31.68                  | 21.99 | 60                    | 50    | -28.01         |      |
| 18.6388            | 6.59                    | 1.59  | 10.10                   | 16.69                  | 11.69 | 60                    | 50    | -38.31         |      |

Registration number: W6M20708-8410-P-15  
FCC ID : QQGBT-6000

**Limits:**

| Frequency of Emission (MHz) | Conducted Limit (dBuV) |          |
|-----------------------------|------------------------|----------|
|                             | 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 formula of measured value as:  $\text{Test Result} = \text{Reading} + \text{Correction Factor}$
  2. The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss
  3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
  4. All not in the table noted test results are more than 20 dB below the relevant limits.

Test equipment used: ETSTW-CE 001 ETSTW-CE 003 ETSTW-CE 004 ETSTW-CE 006 ETSTW-RE 064

Explanation: See attached diagram

Registration number: W6M20708-8410-P-15  
FCC ID : QQGBT-6000

## **Appendix**

### **A Measurement diagrams**

#### **1. Peak Output Power**

#### **2. Spurious Emissions radiated**

(The measurement diagrams plots attached below are preliminary wideband scan with a peak detector and for reference only. The final test results are listed on section 3.6)

#### **3. Carrier Frequency Separation**

#### **4. Number of Hopping Frequencies**

#### **5. Time of Occupancy (Dwell Time)**

#### **6. 20dB Bandwidth**

#### **7. Band-edge Compliance of RF Conducted Emissions**

#### **8. Power Line Conducted Emission**

(The measurement diagrams plots attached below are preliminary wideband scan with a peak and average detector for reference only. The final test results are listed on section 3.13)

### **B Photos**

#### **1. External Photos**

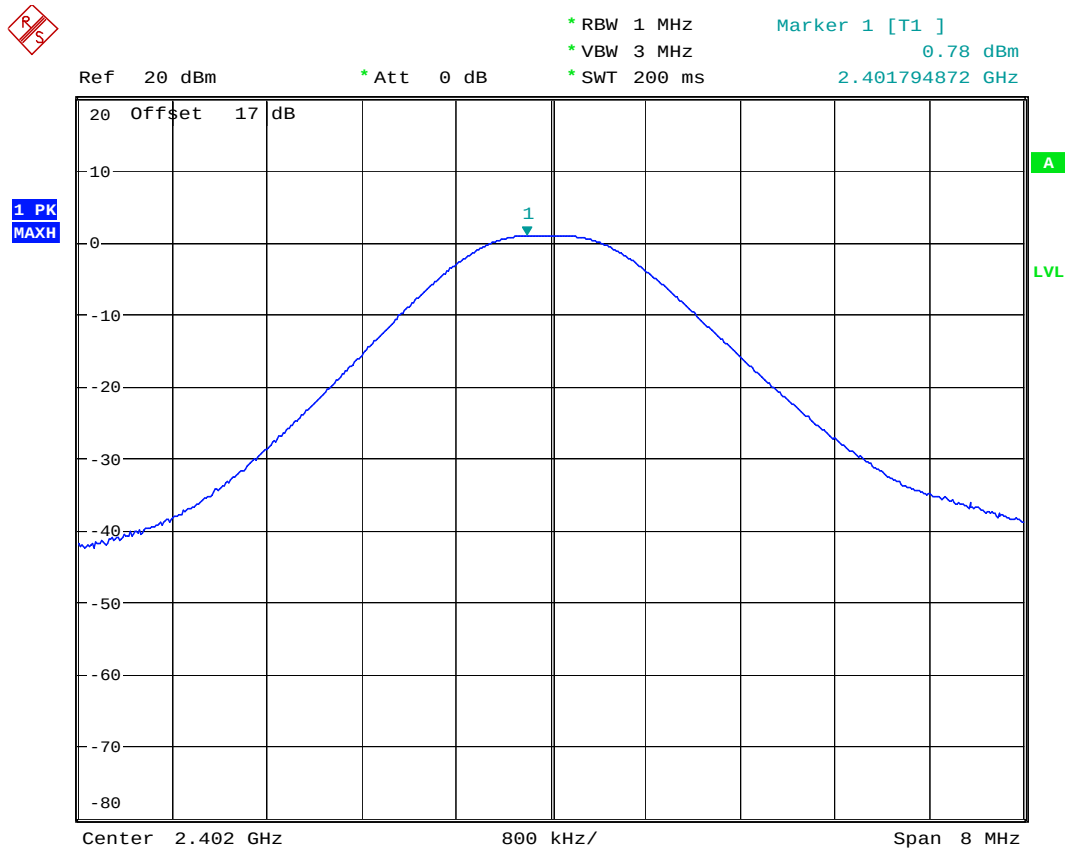
#### **2. Internal Photos**

#### **3. Set Up Photo of Radiated Emission**

#### **4. Set Up Photo of Conducted Emission**

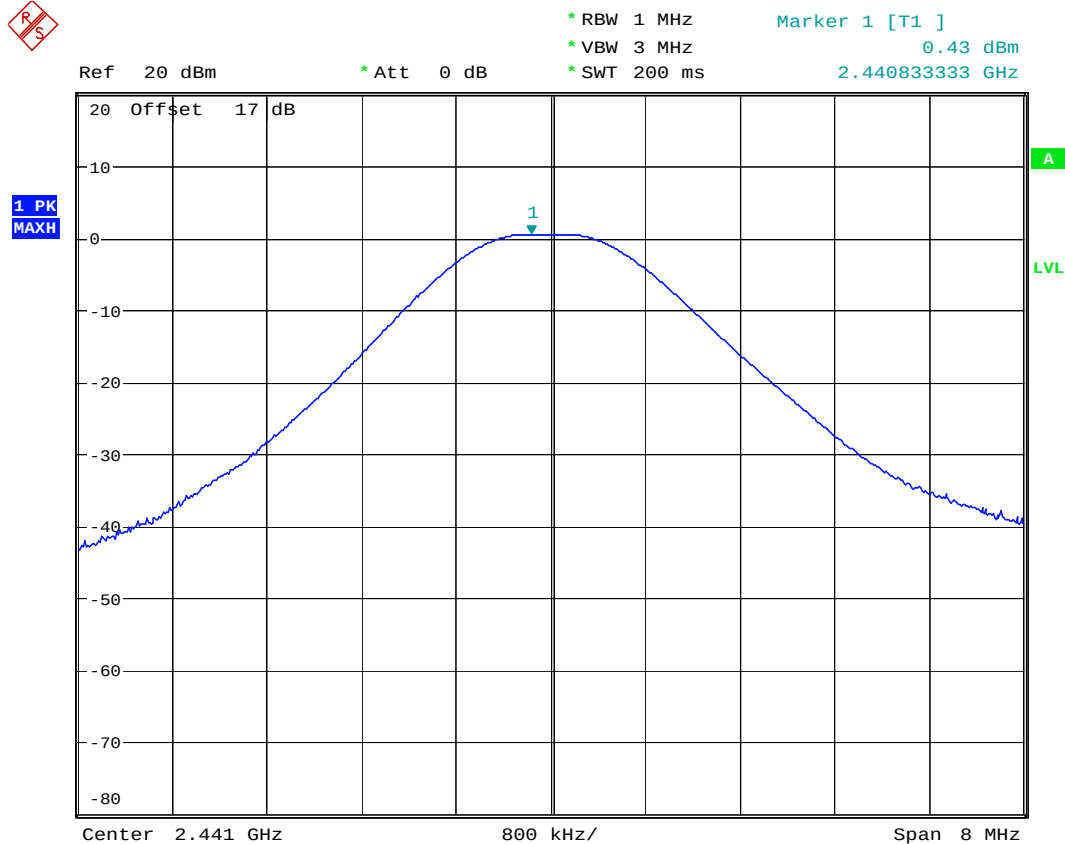
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

Peak Output Power



MAX OUTPUT POWER CH0  
Date: 11.SEP.2007 12:41:04

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

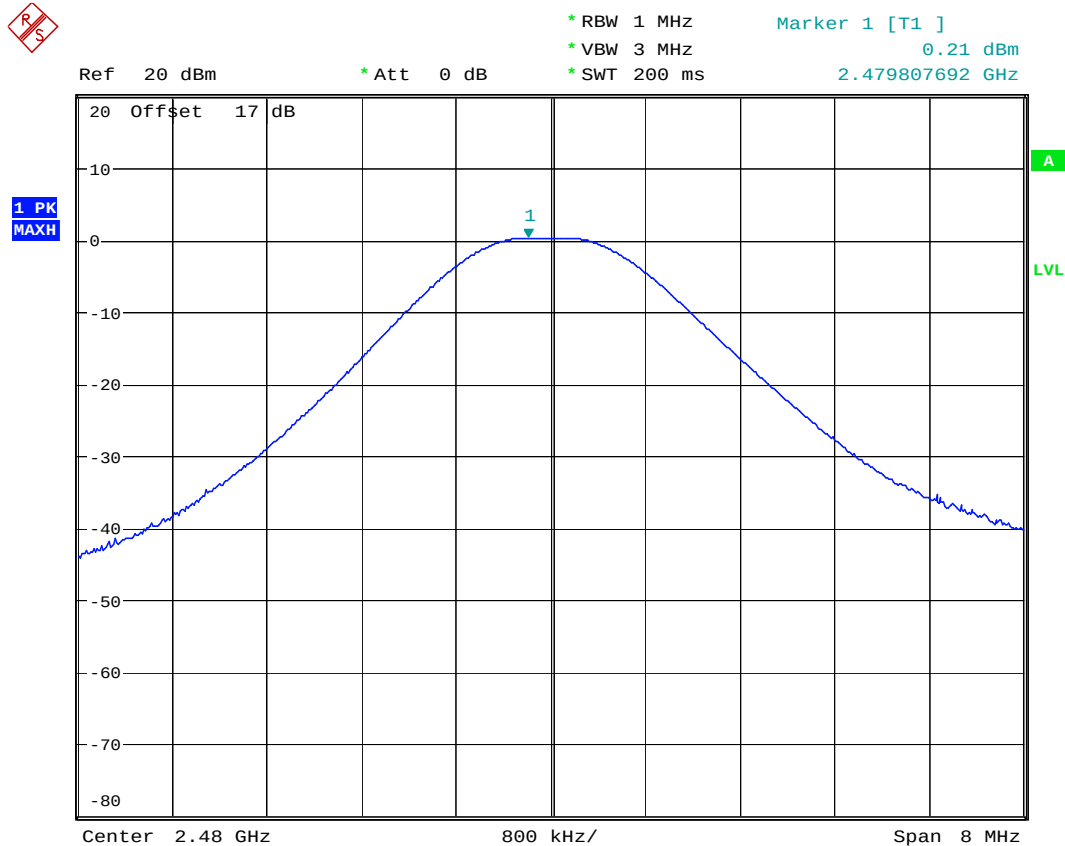


MAX OUTPUT POWER CH39

Date: 11.SEP.2007 12:41:34



Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



MAX OUTPUT POWER CH78

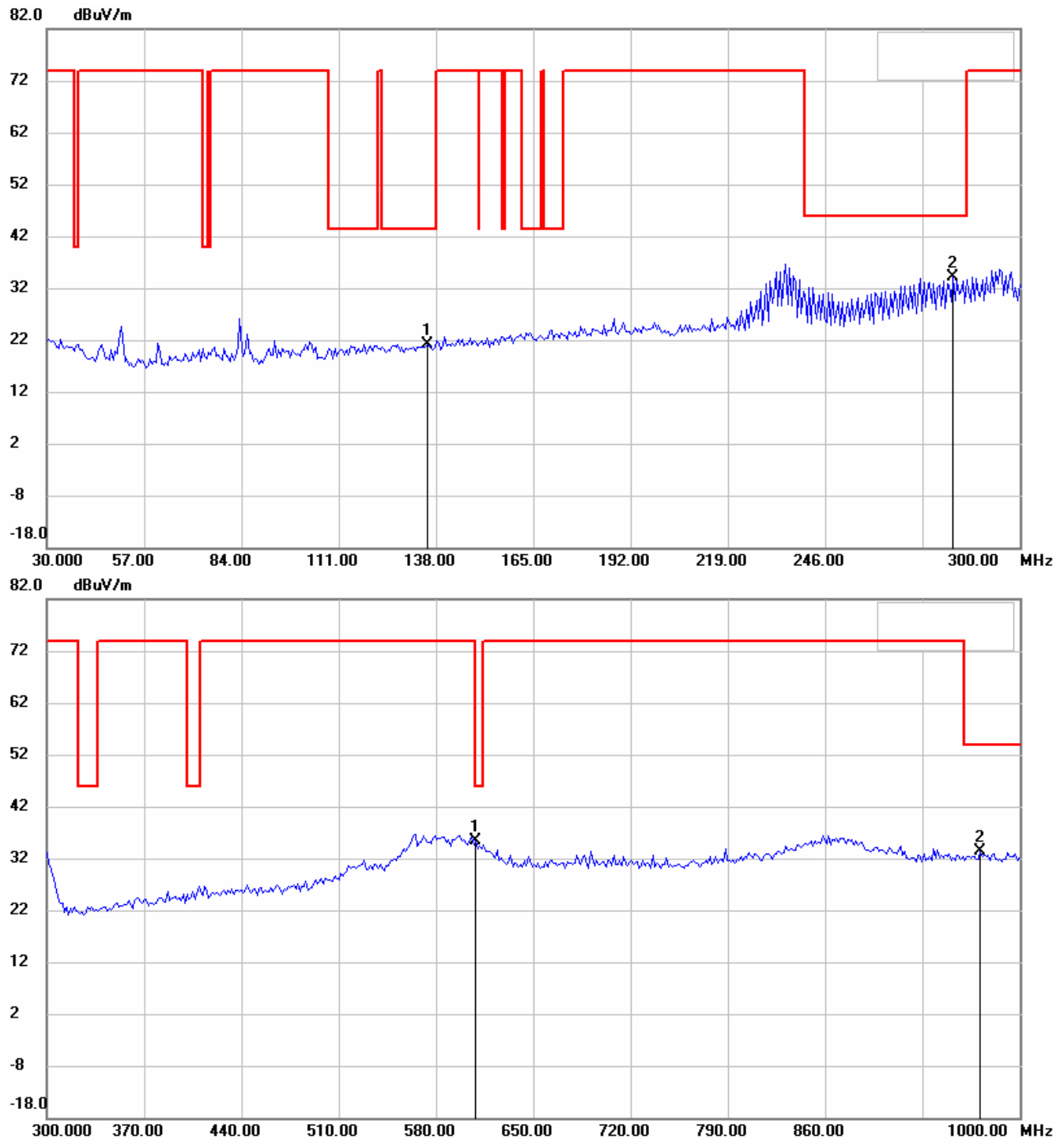
Date: 11.SEP.2007 12:42:01

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

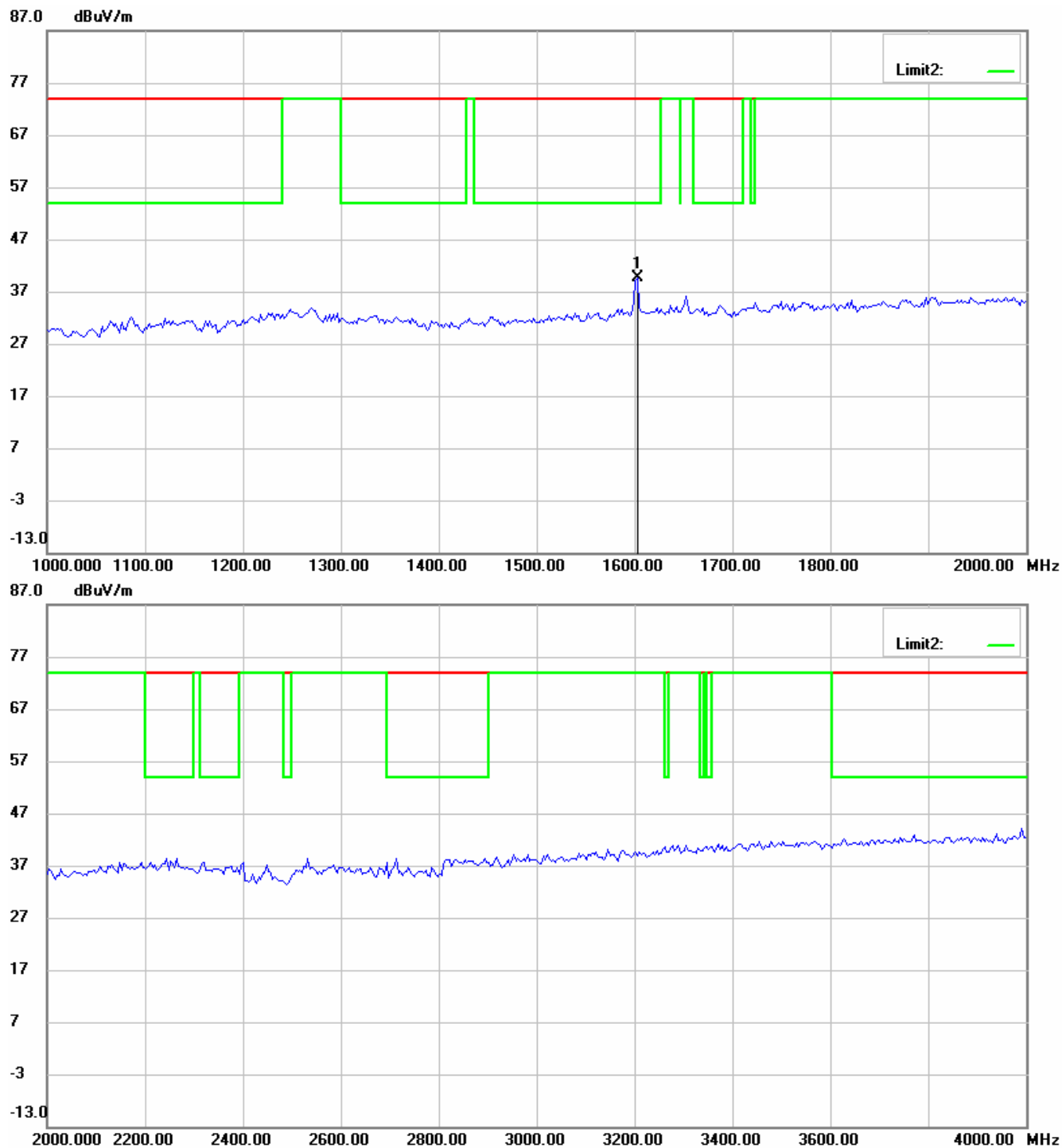
## Spurious Emissions radiated

CH 0

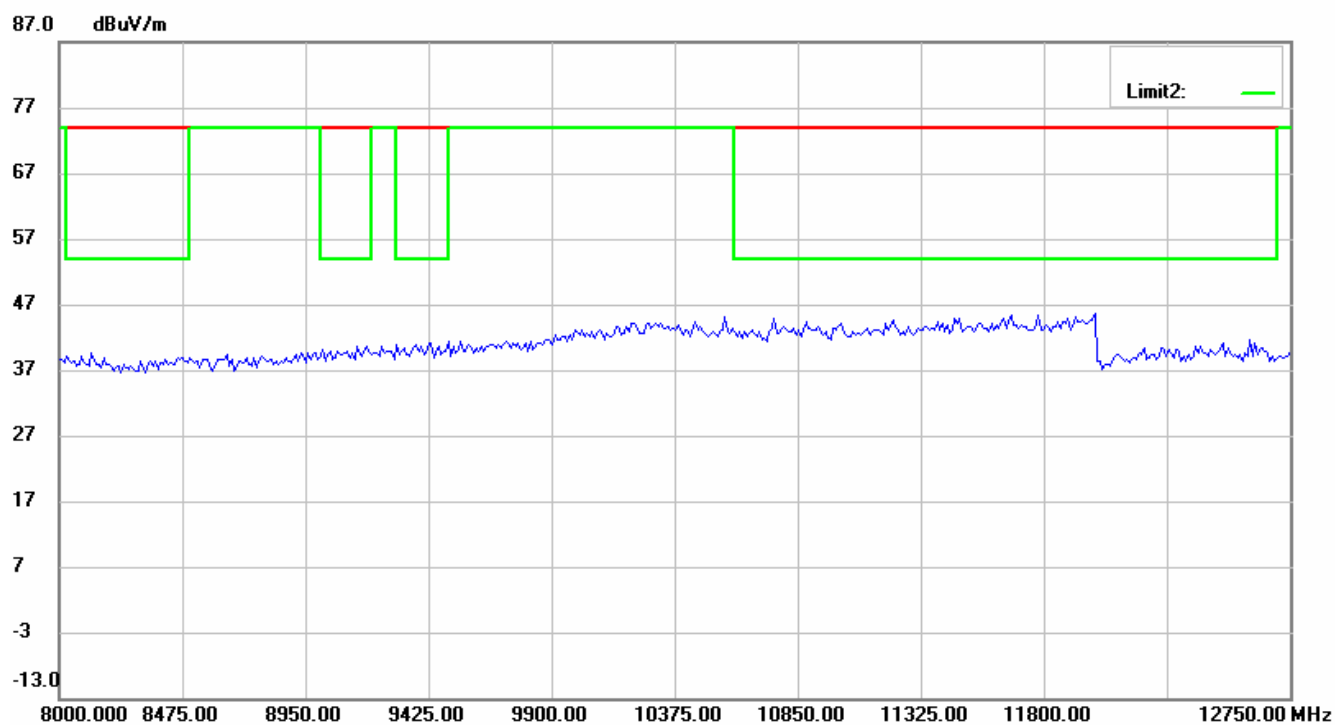
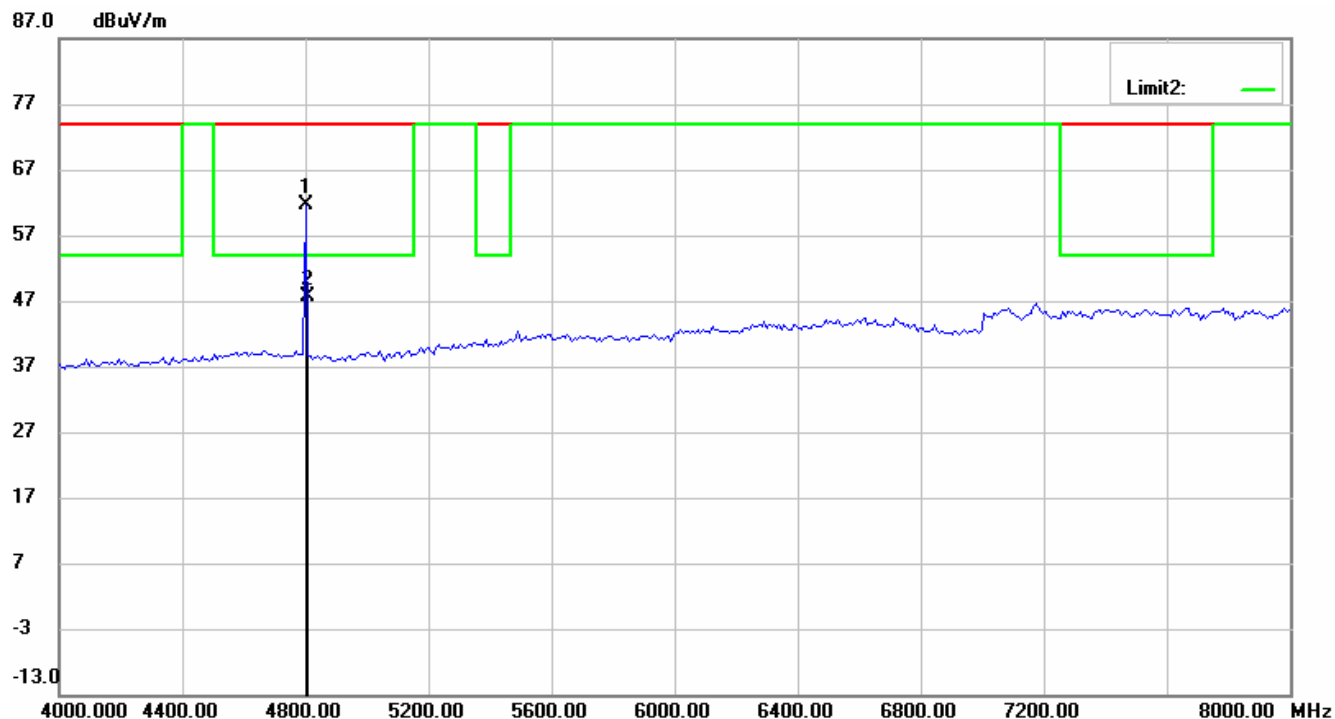
Antenna Polarization H



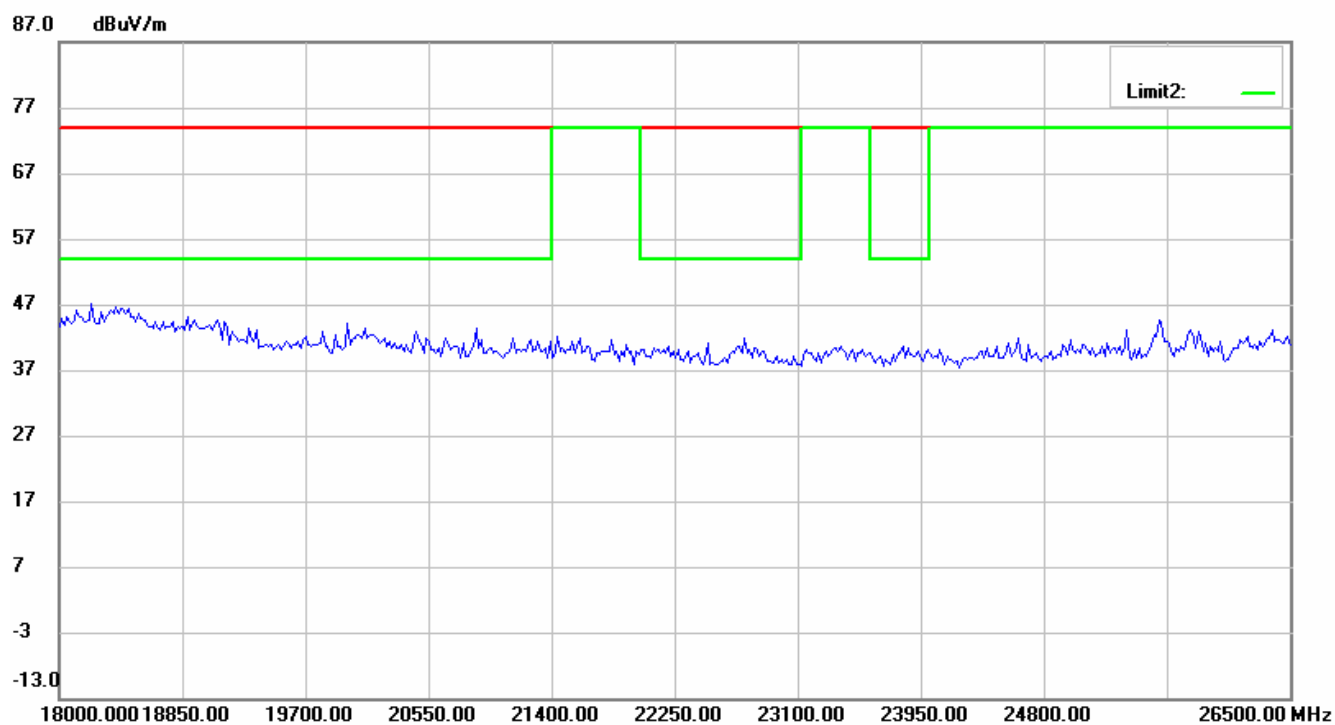
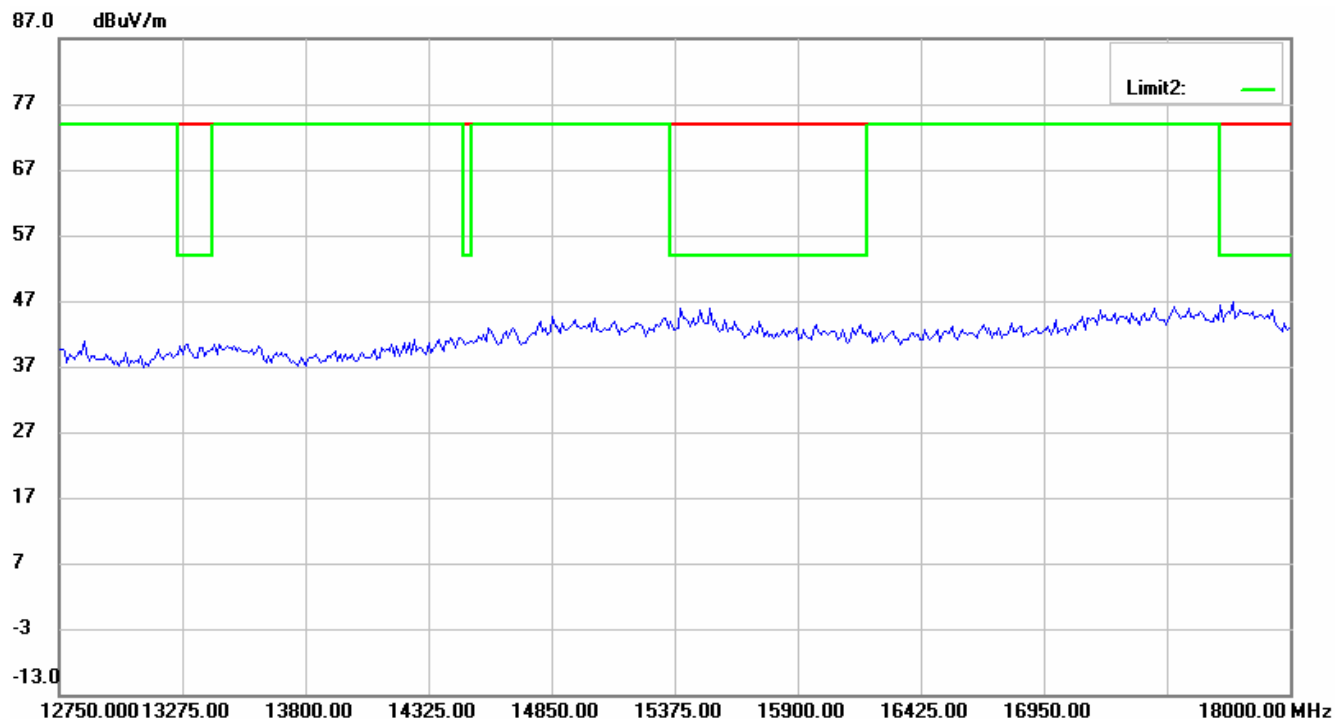
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

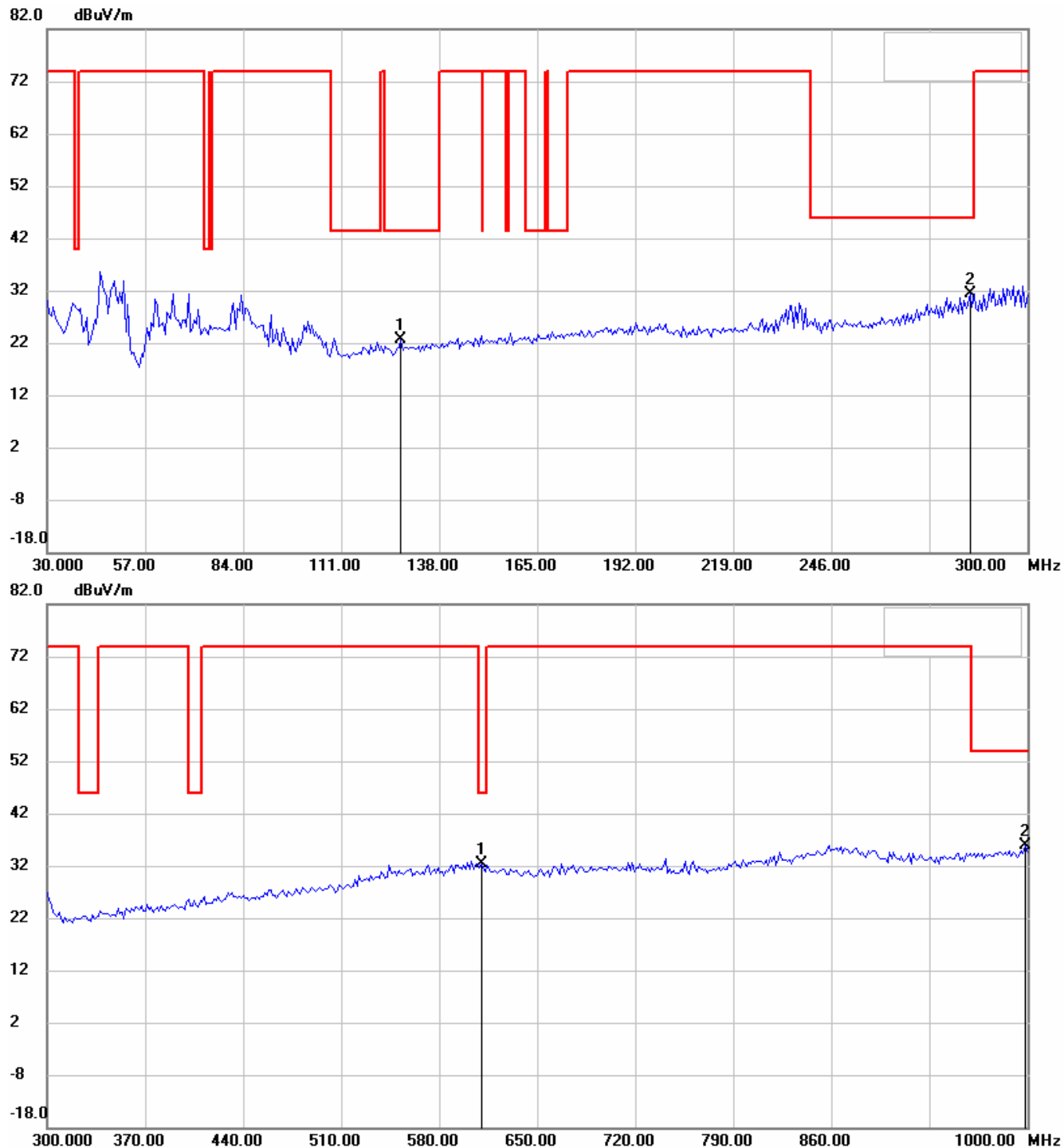


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

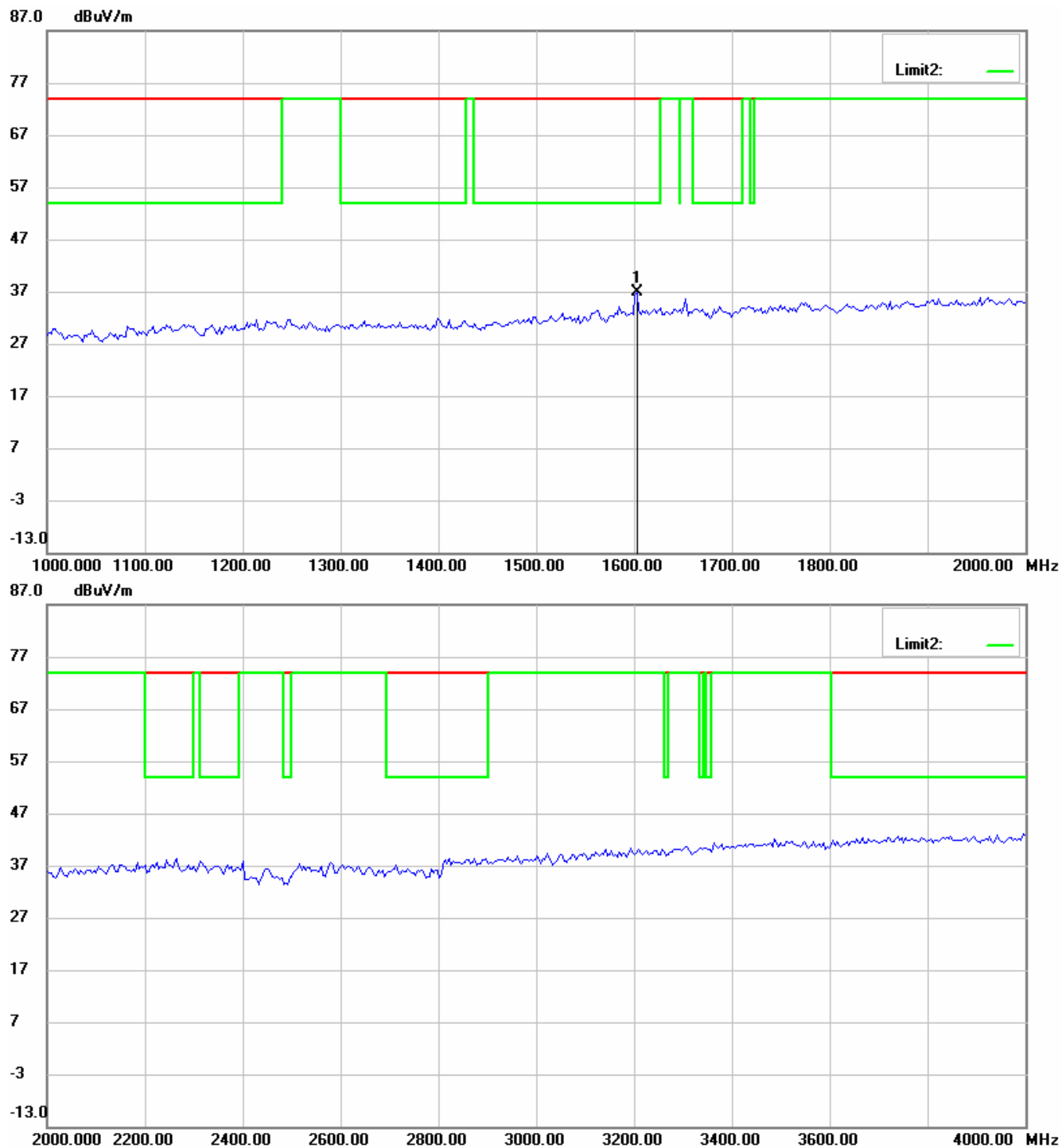


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

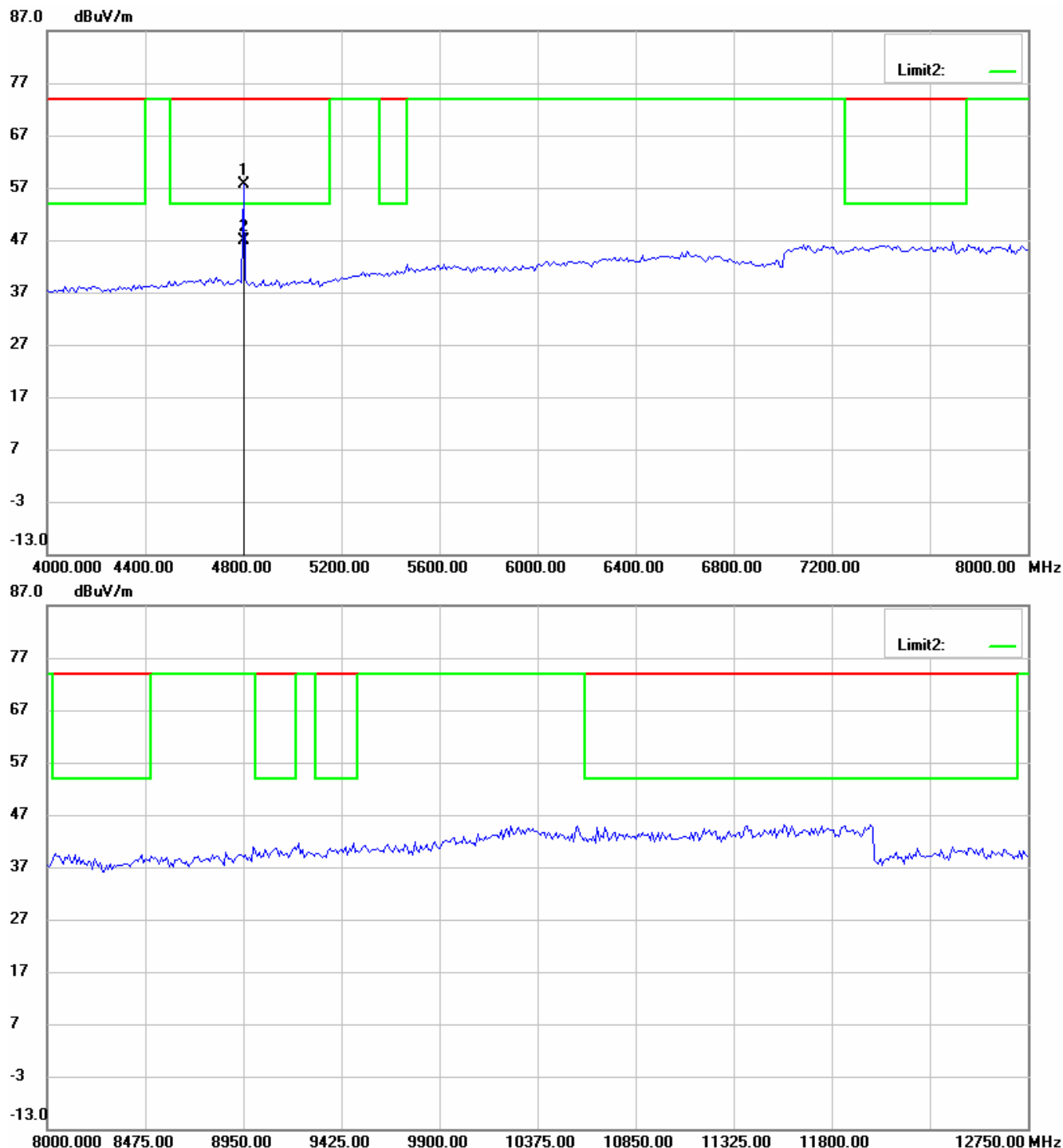
## Antenna Polarization V



Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

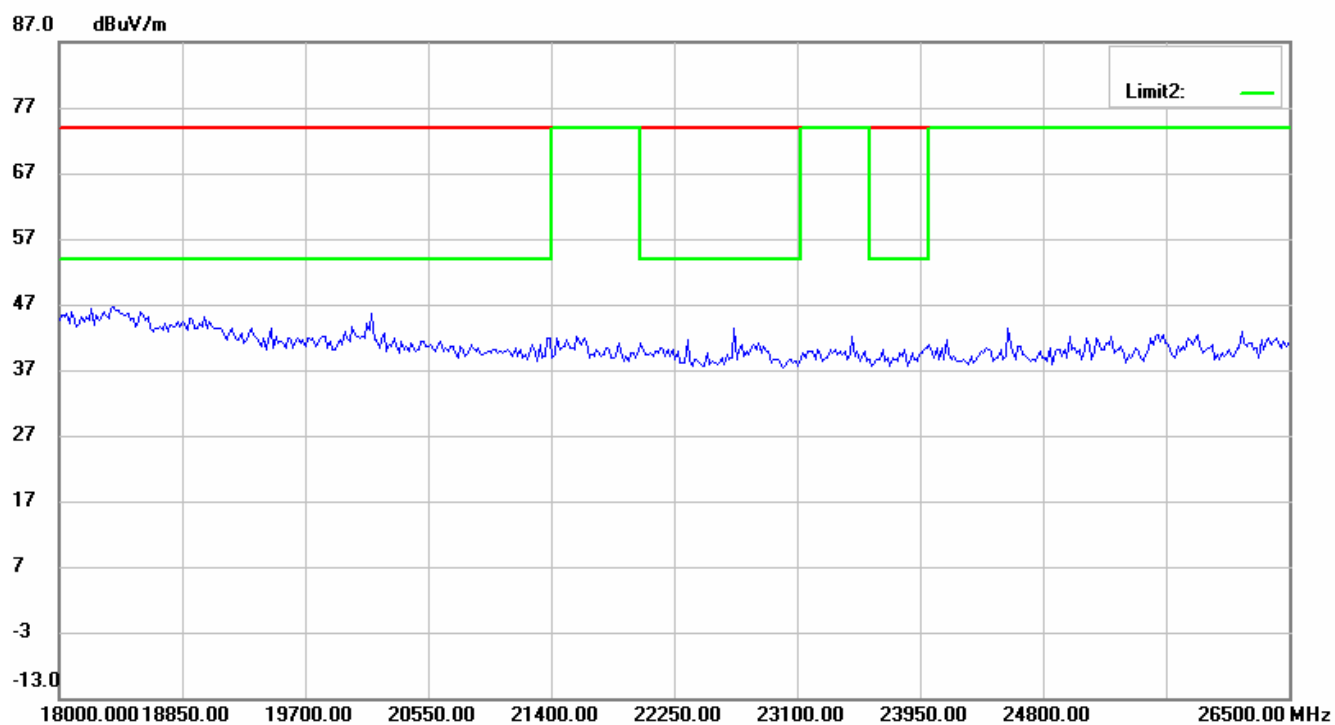
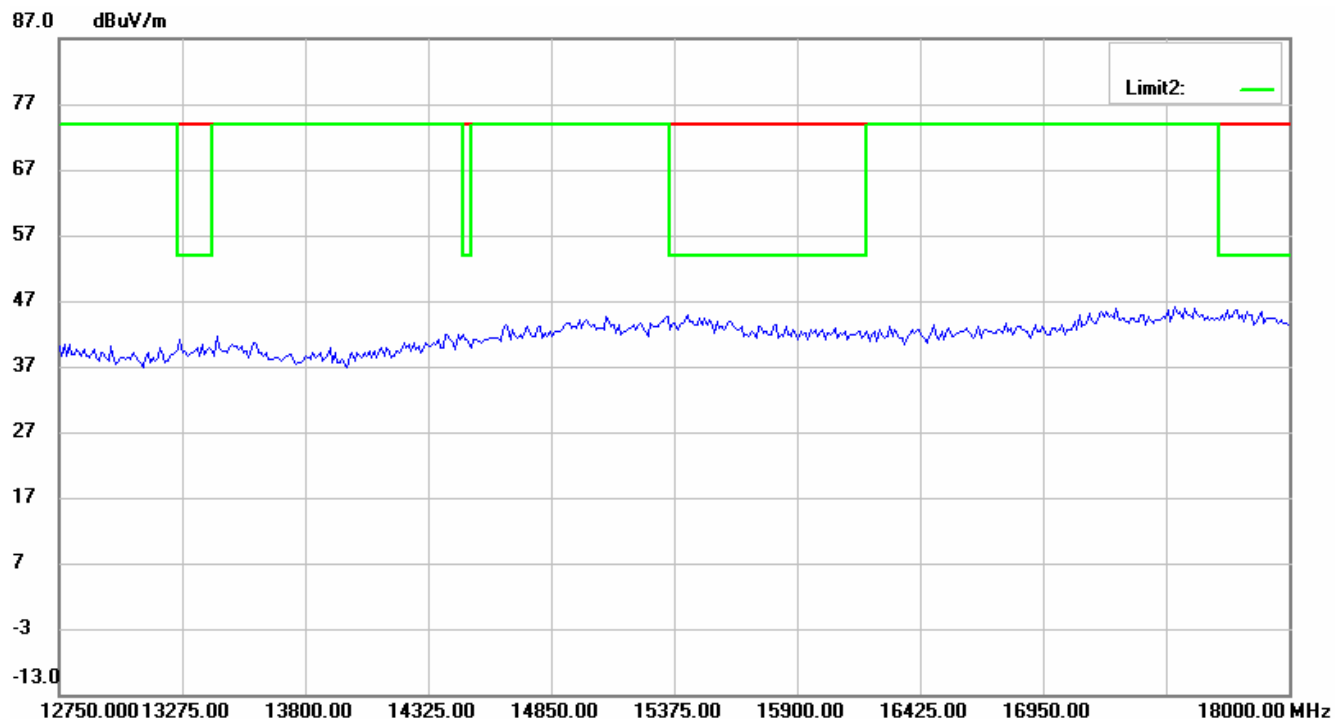


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000





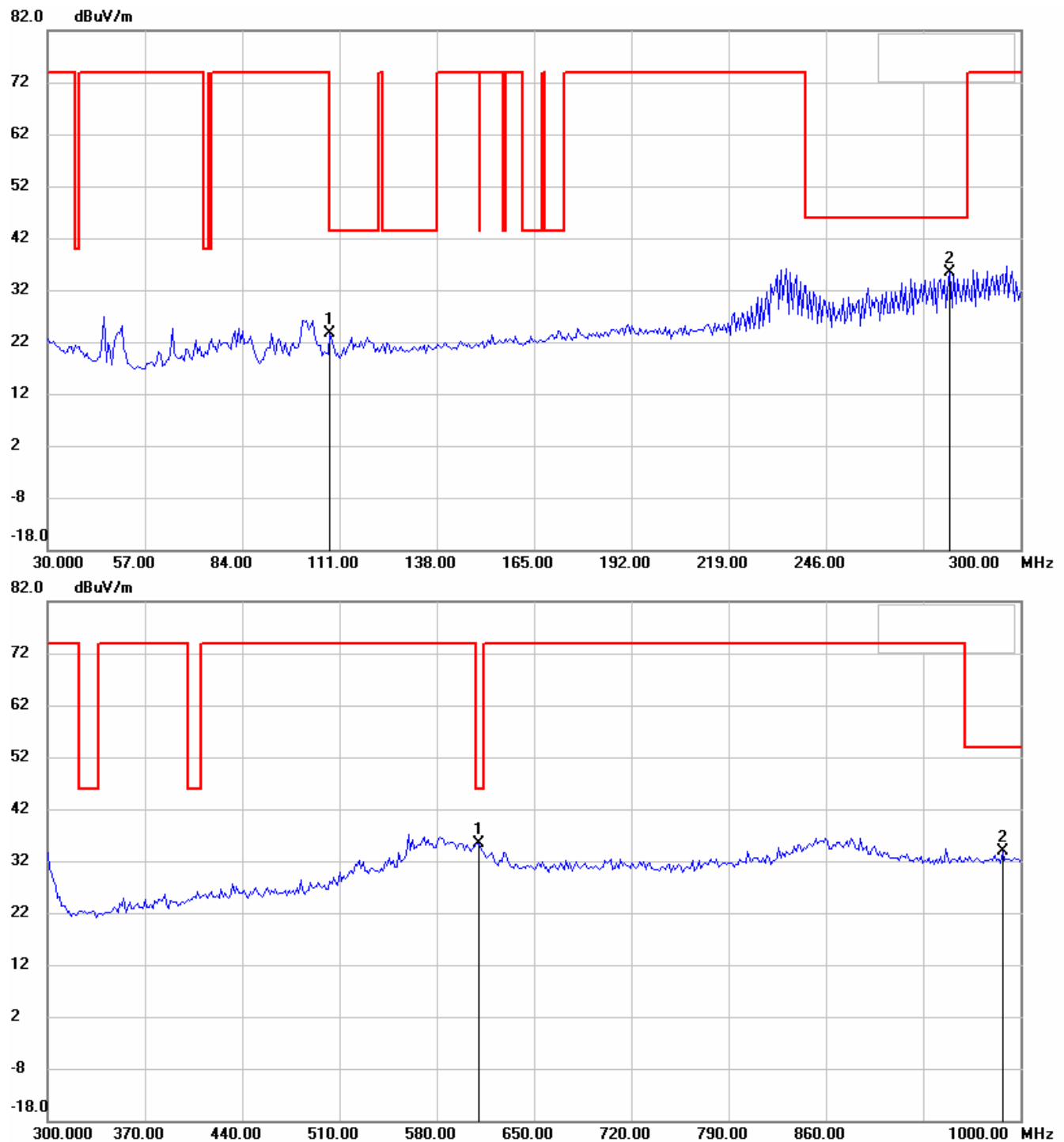
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



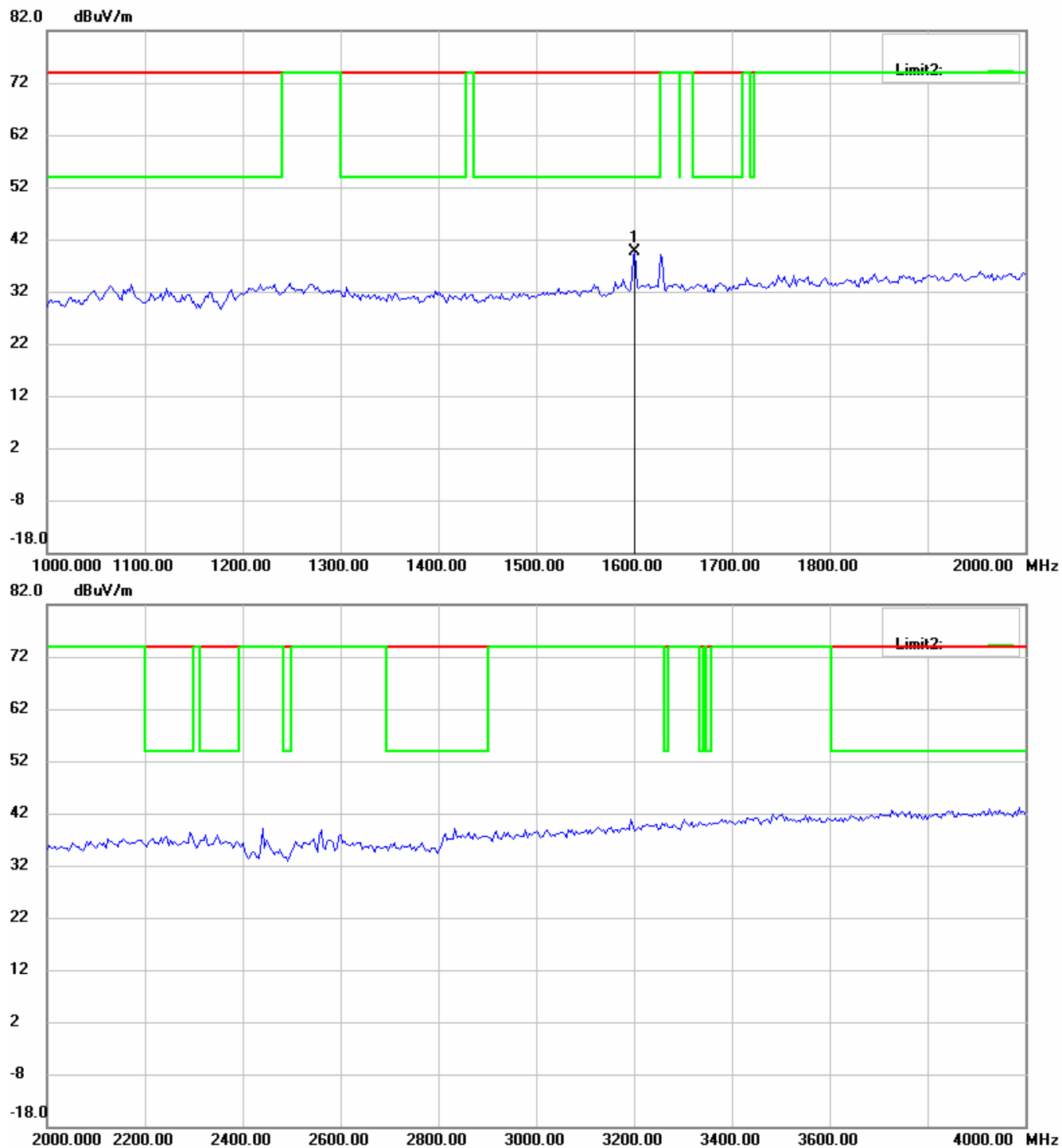
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

## CH 39

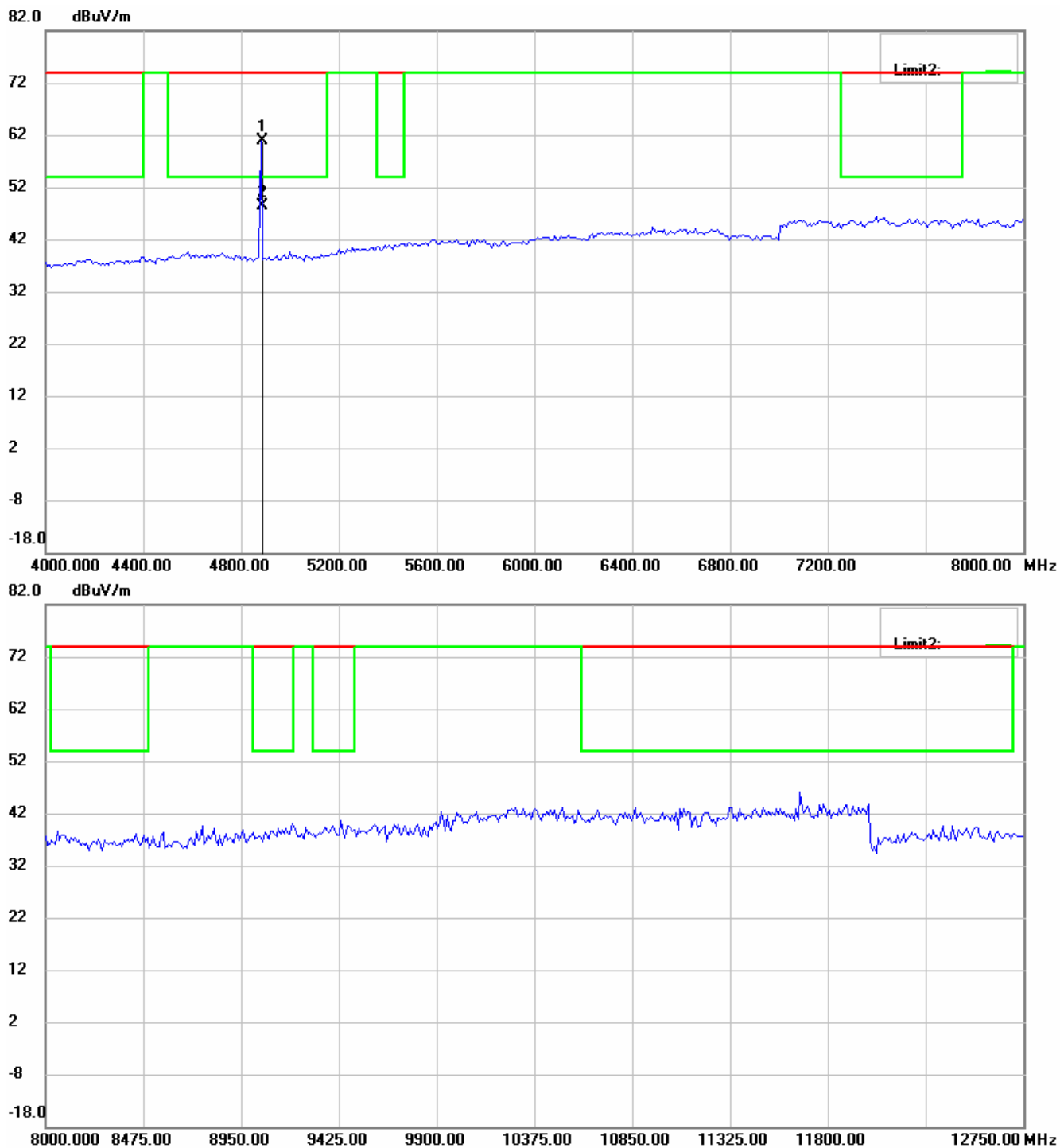
### Antenna Polarization H



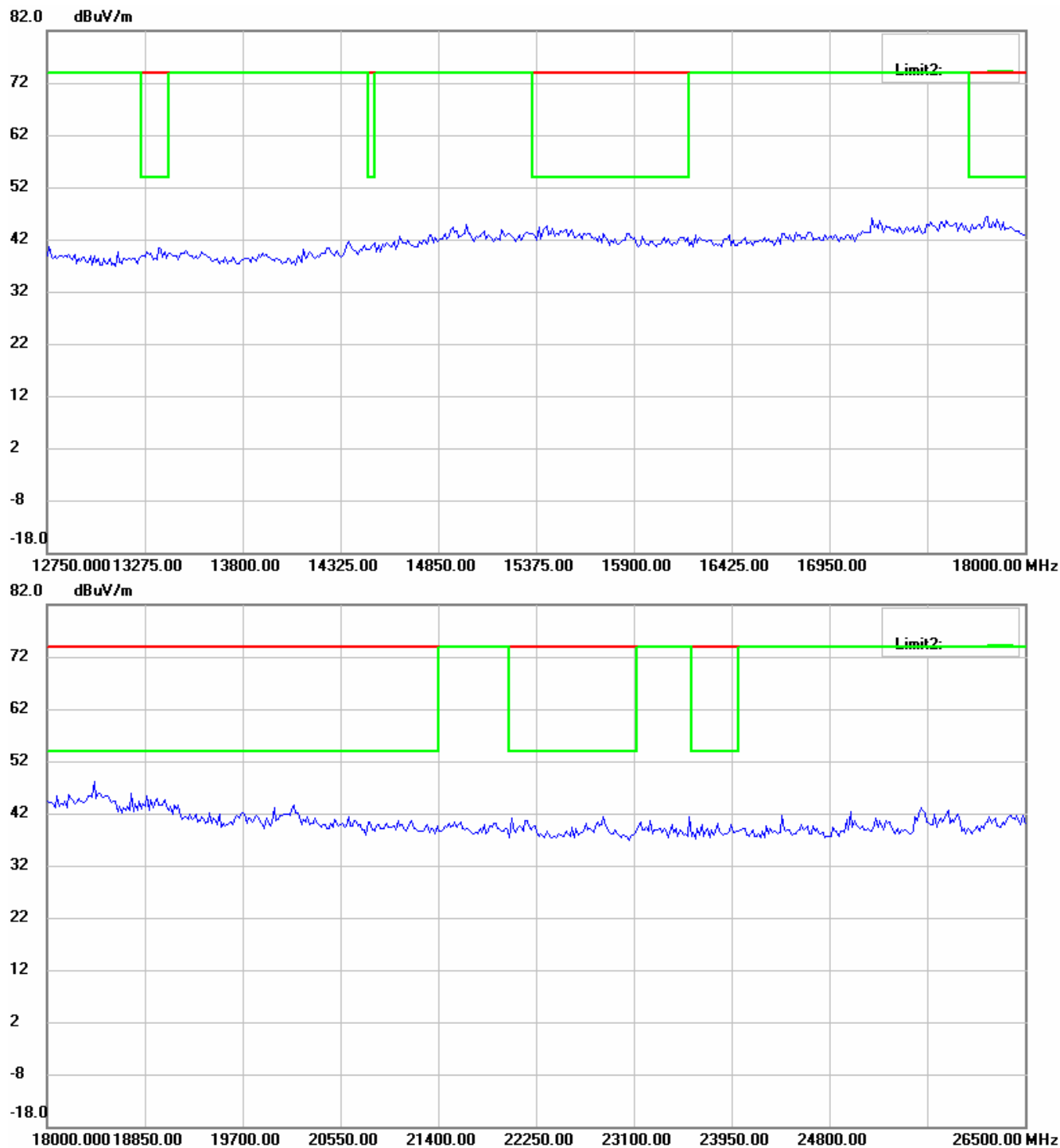
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



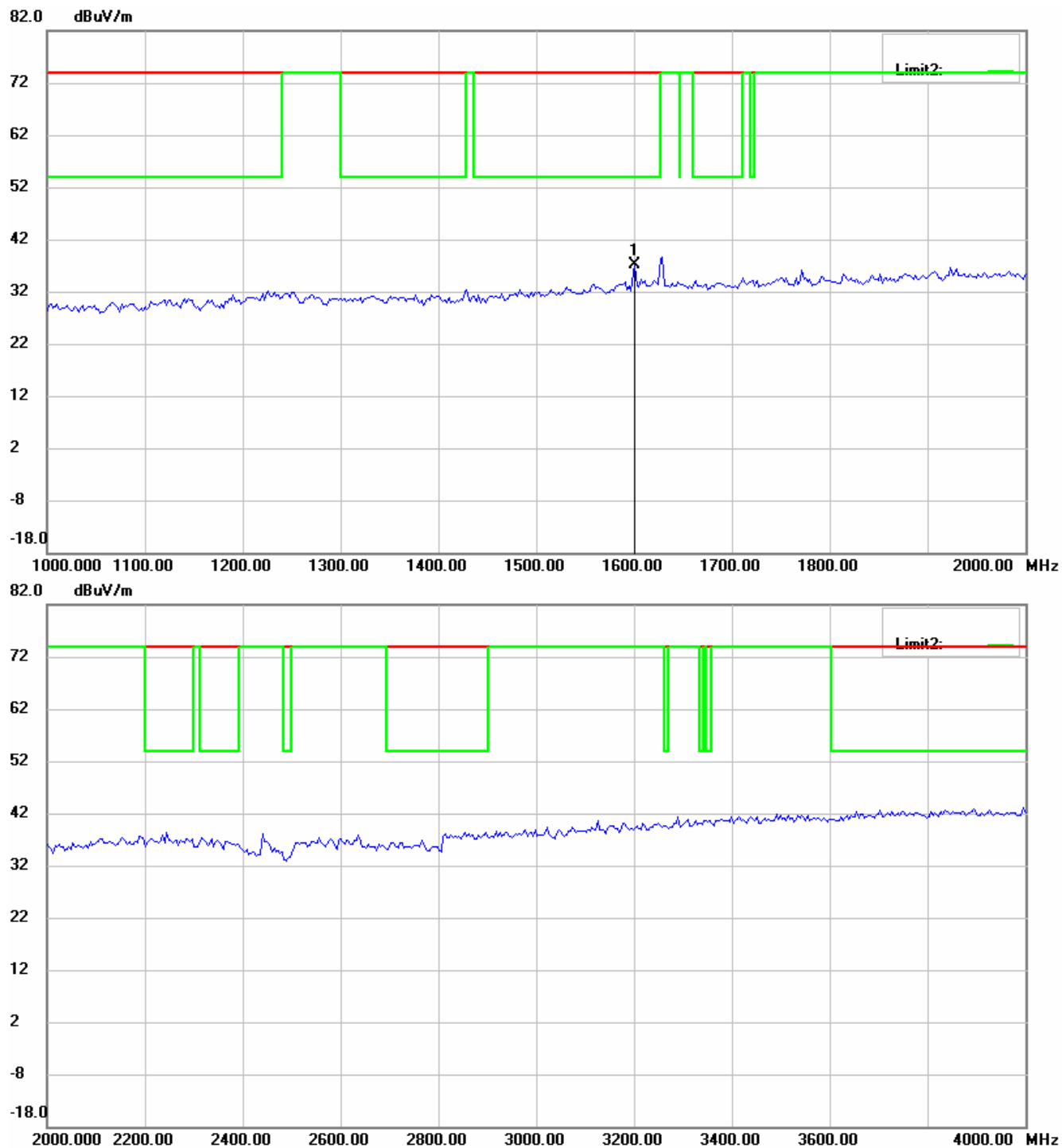
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



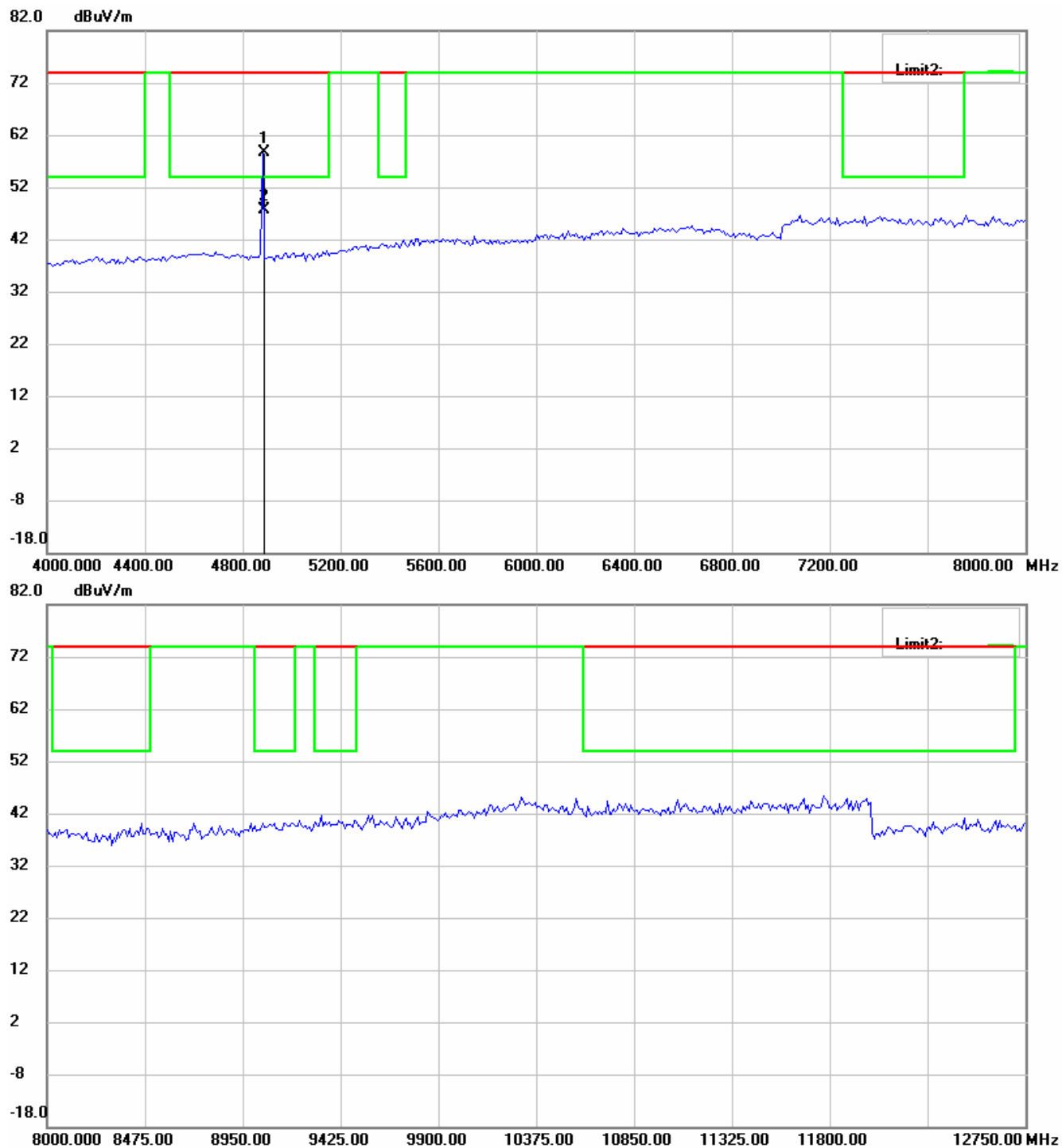
## Antenna Polarization V



Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

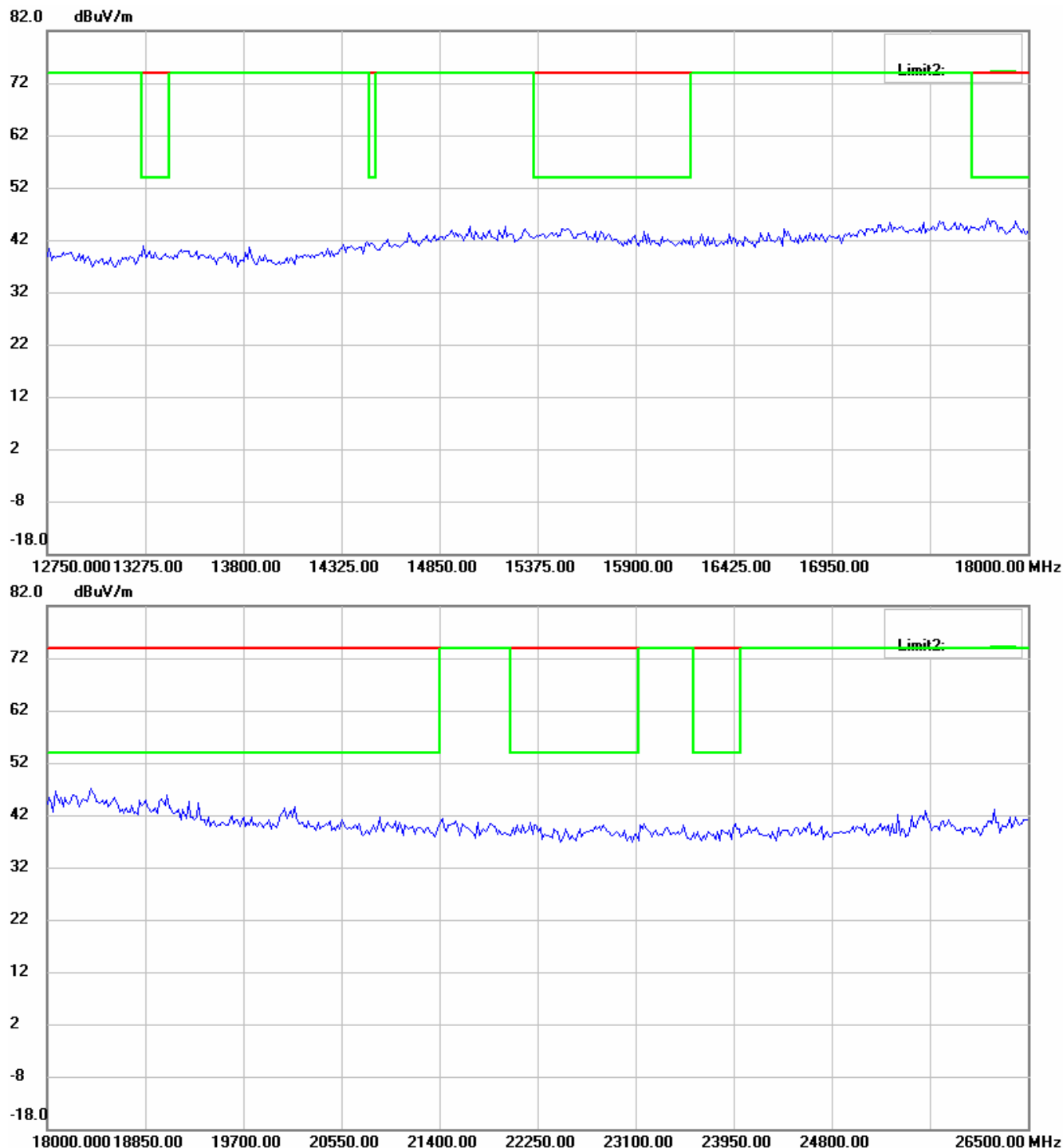


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000





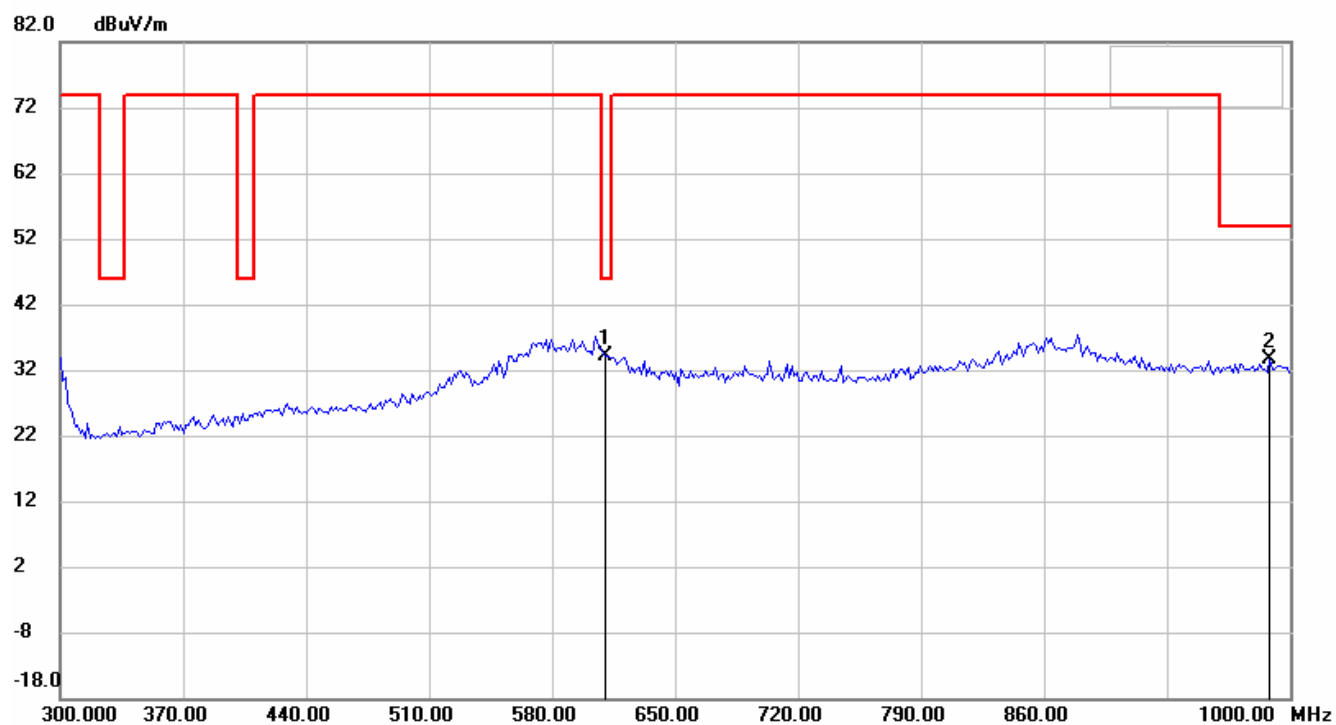
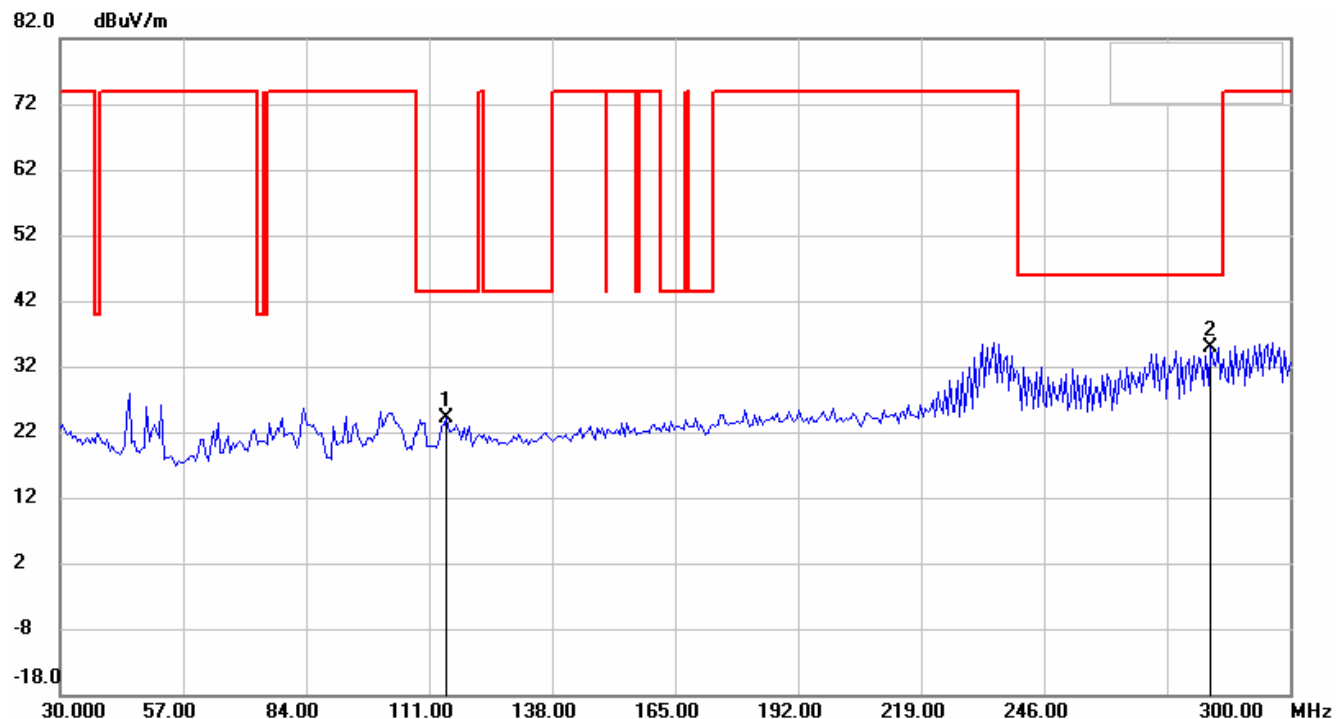
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



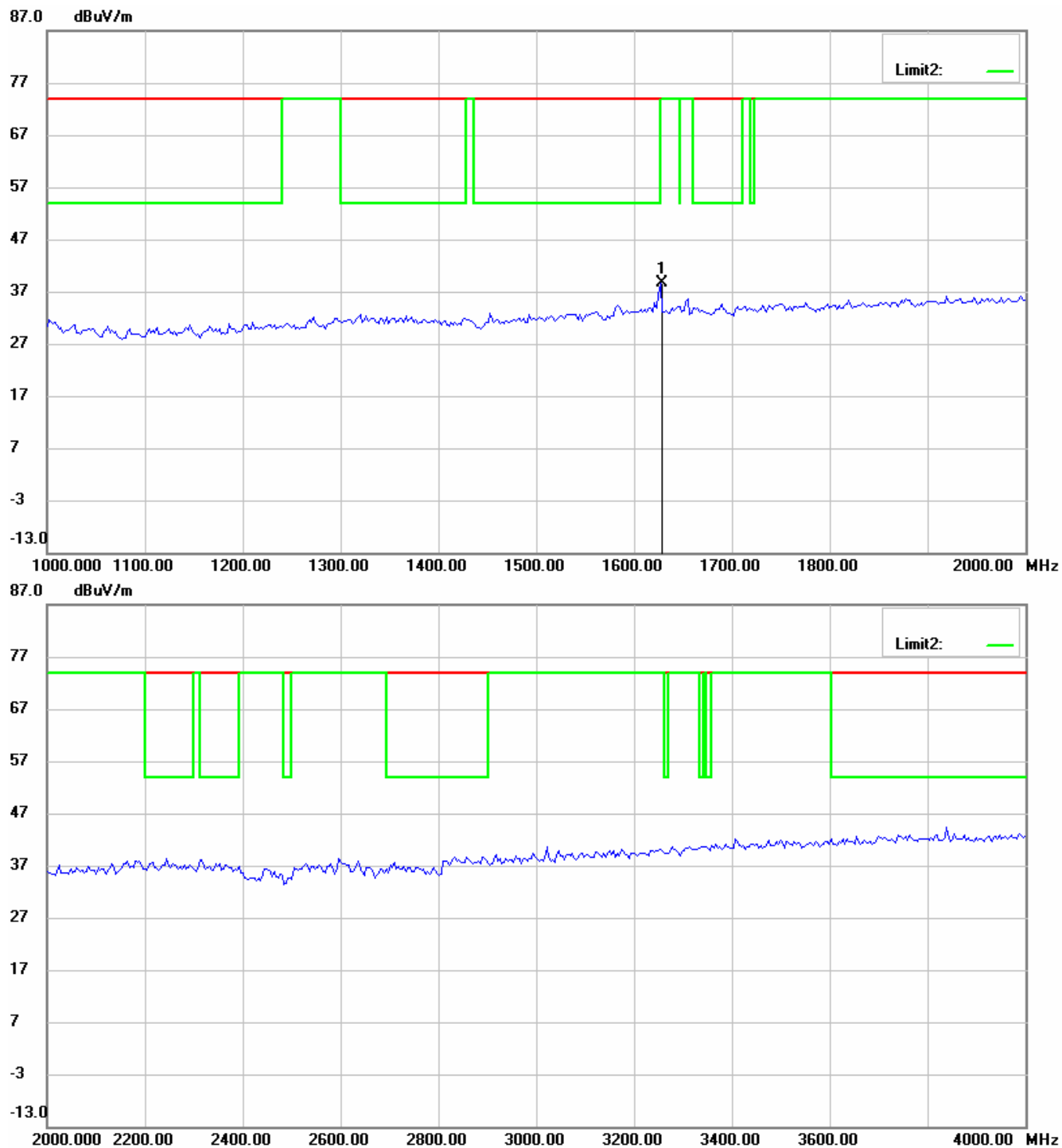
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

CH 78

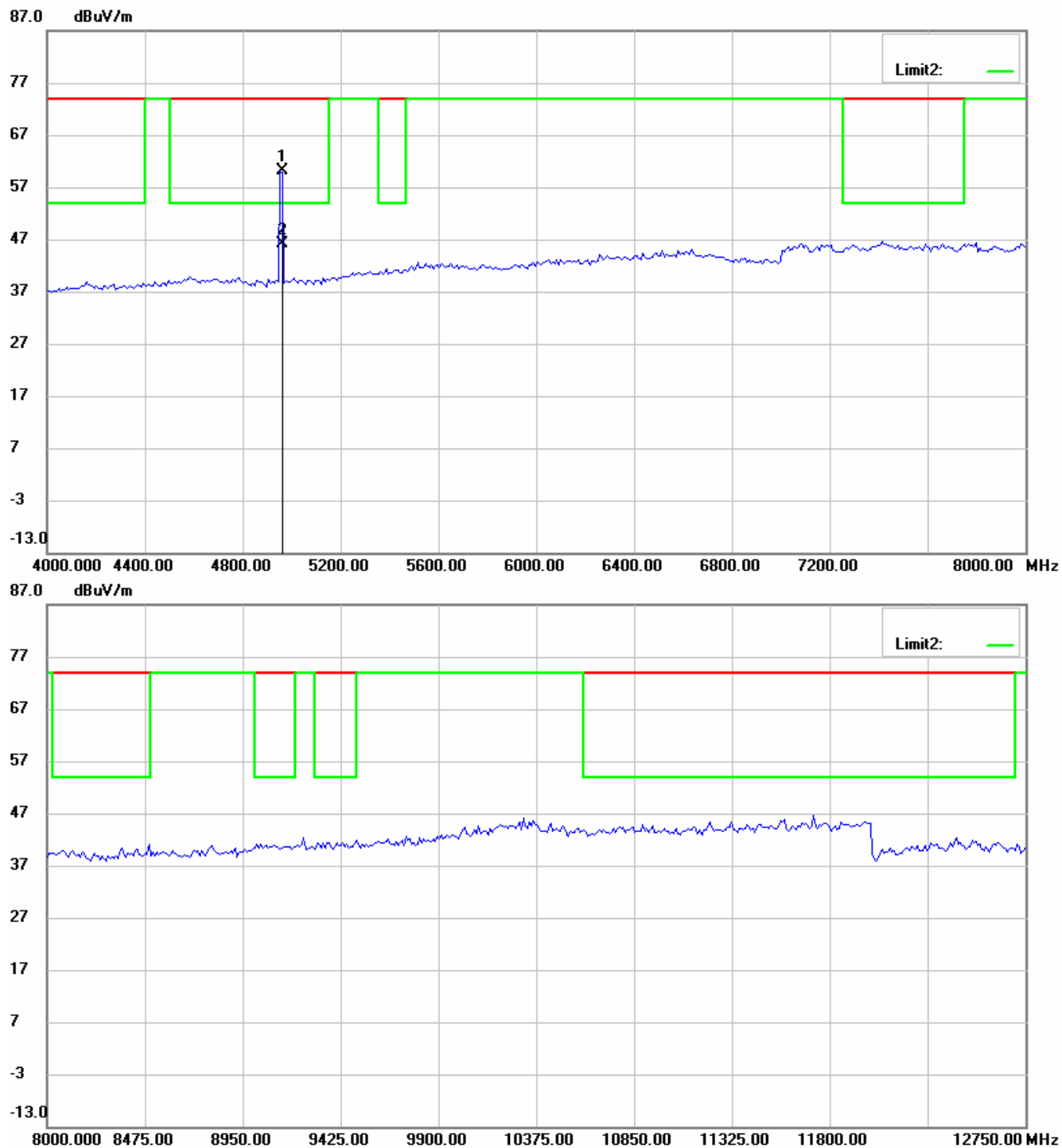
Antenna Polarization H



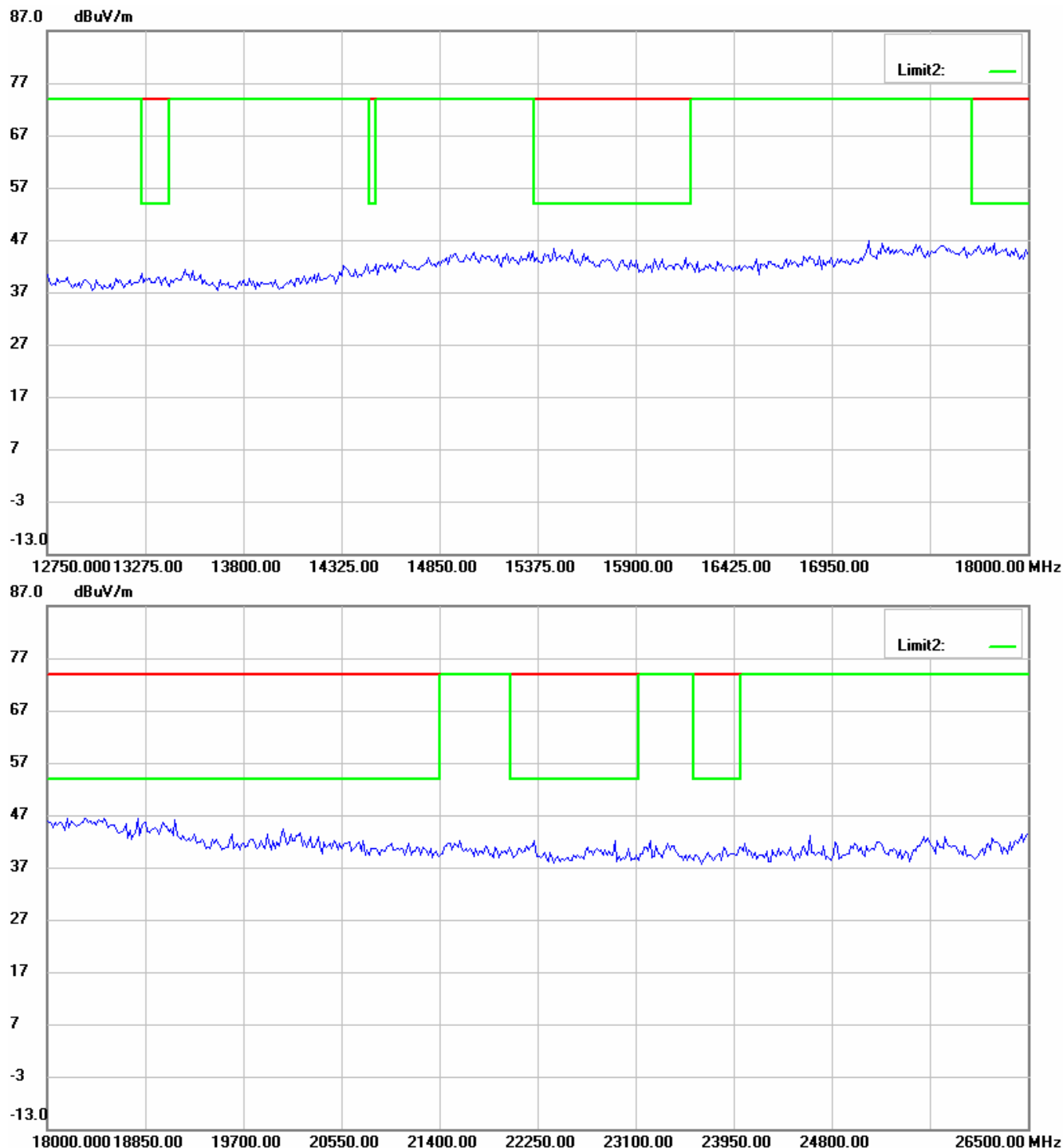
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

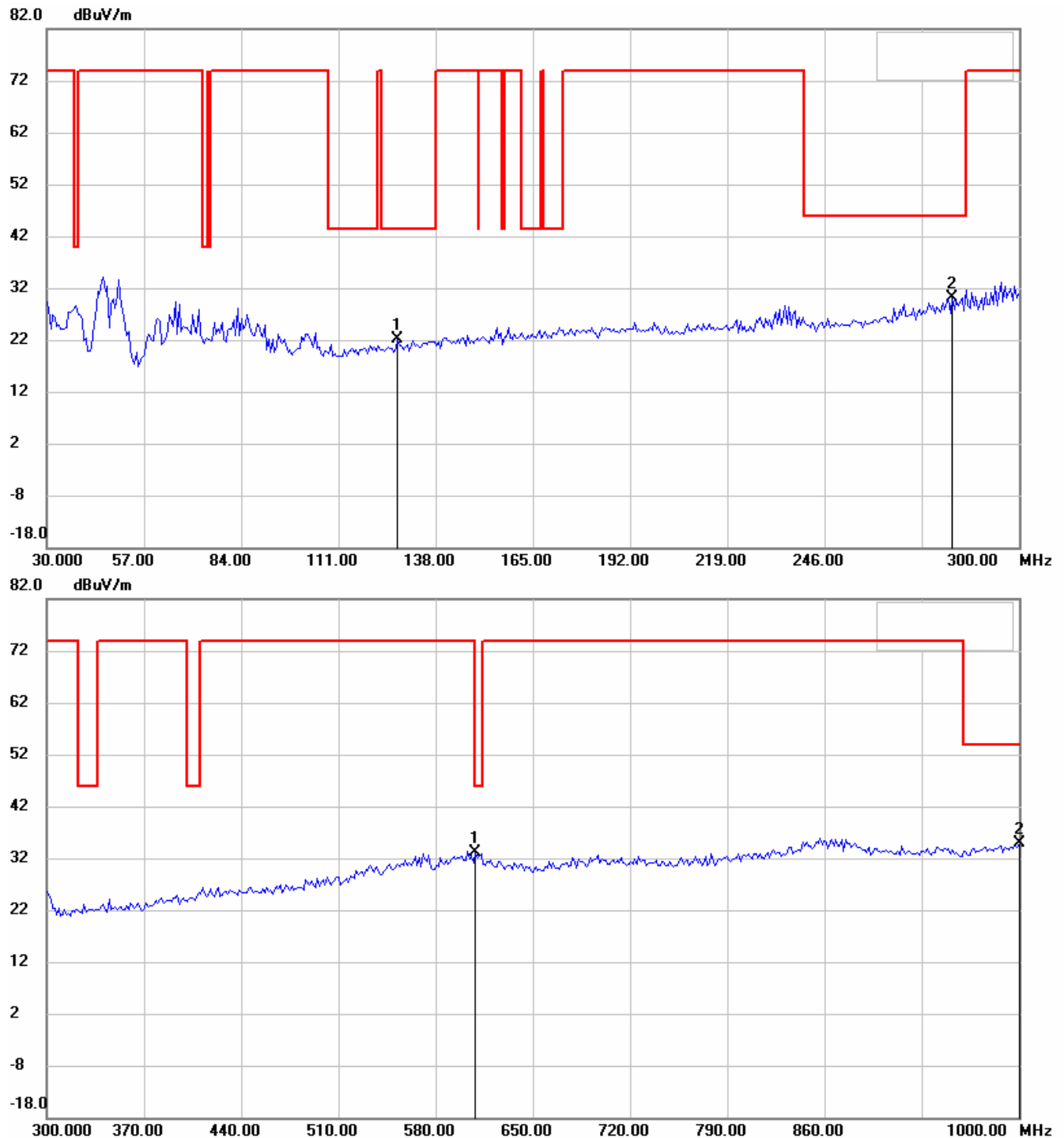


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

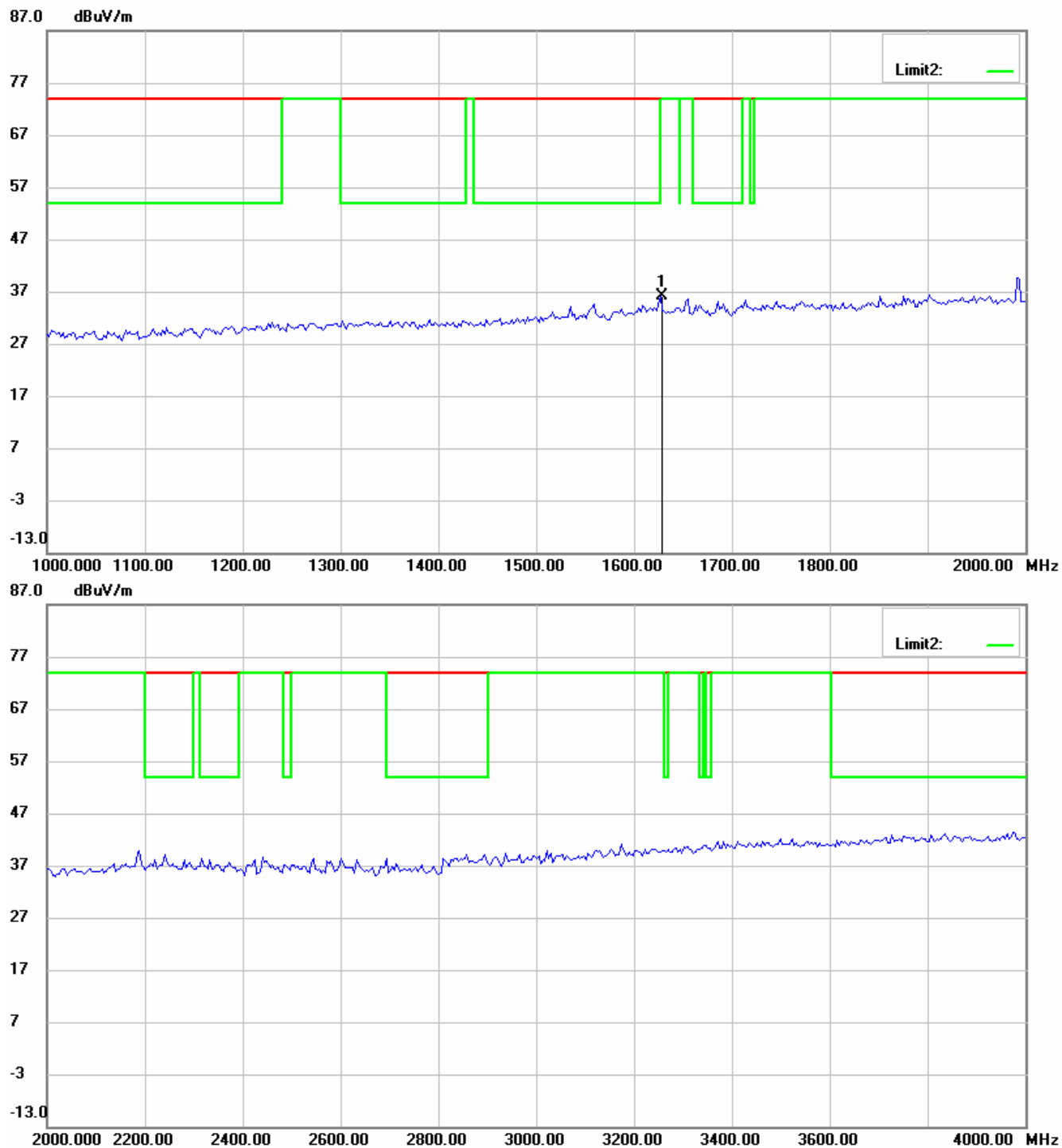


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

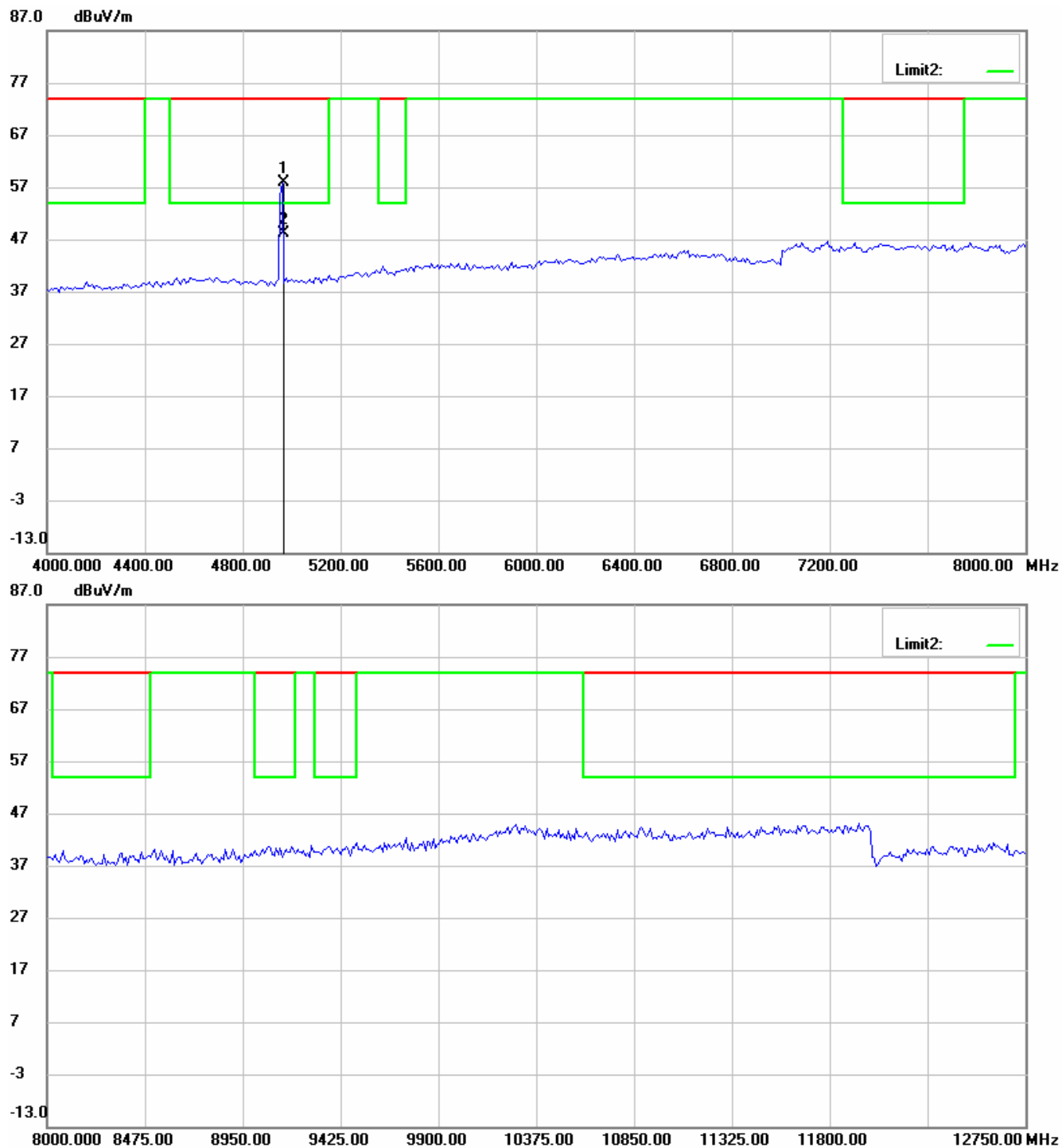
## Antenna Polarization V



Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

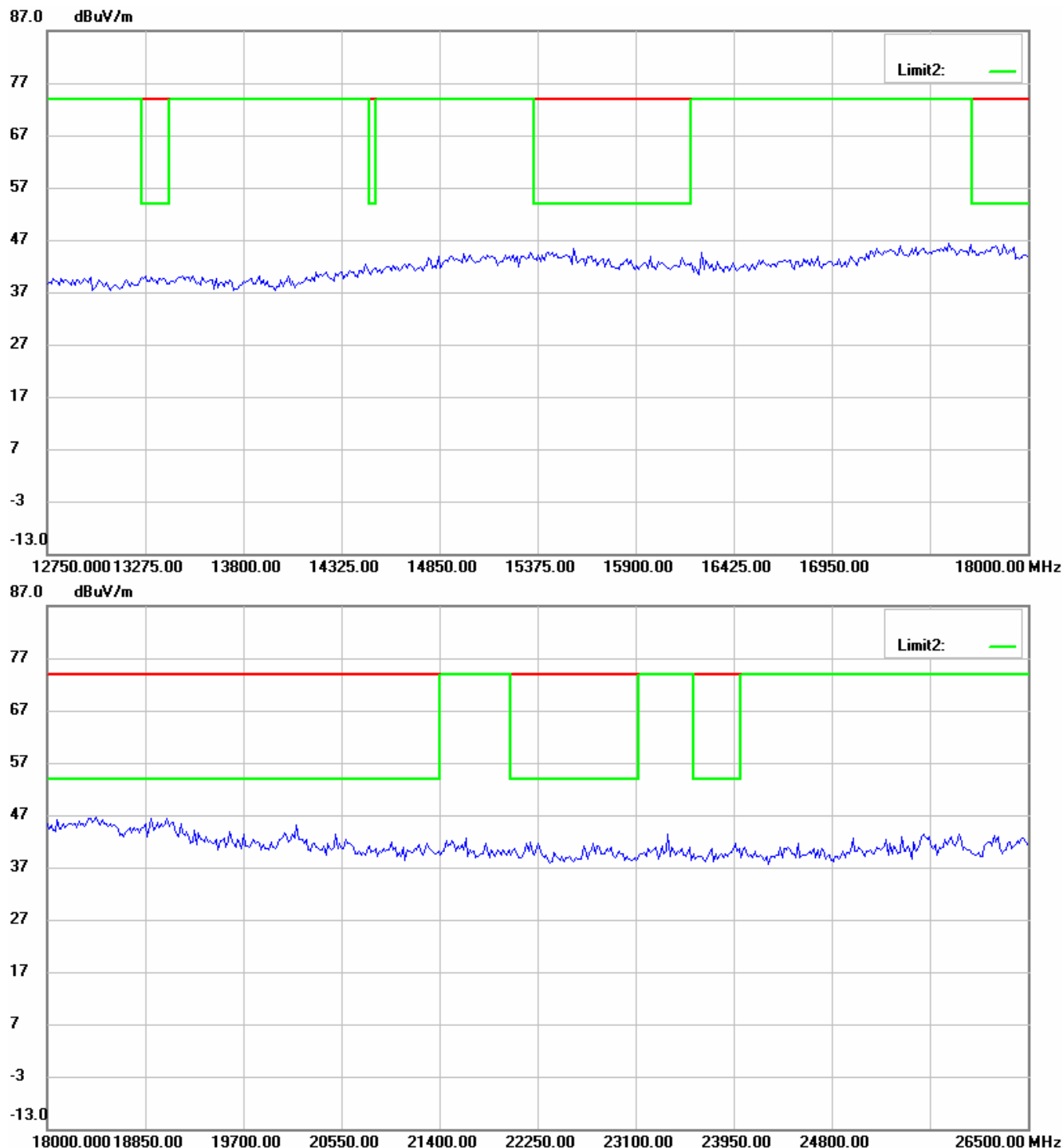


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



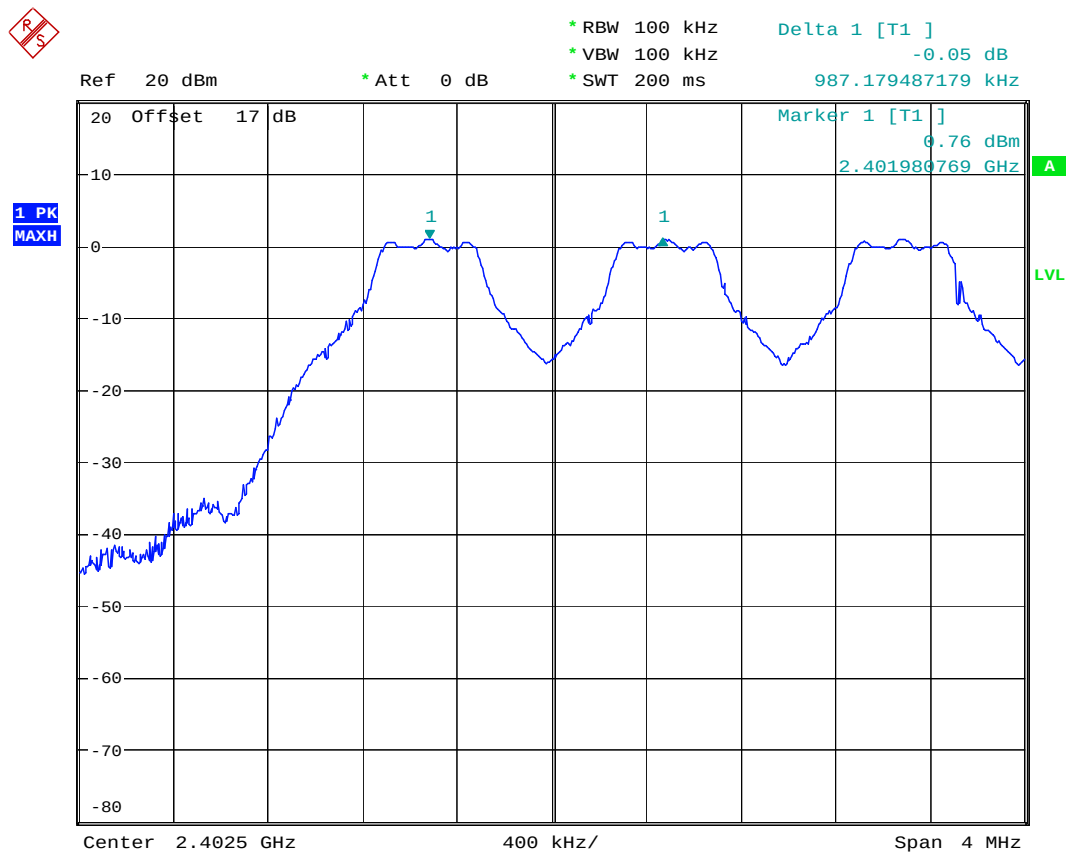


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

## Carrier Frequency Separation



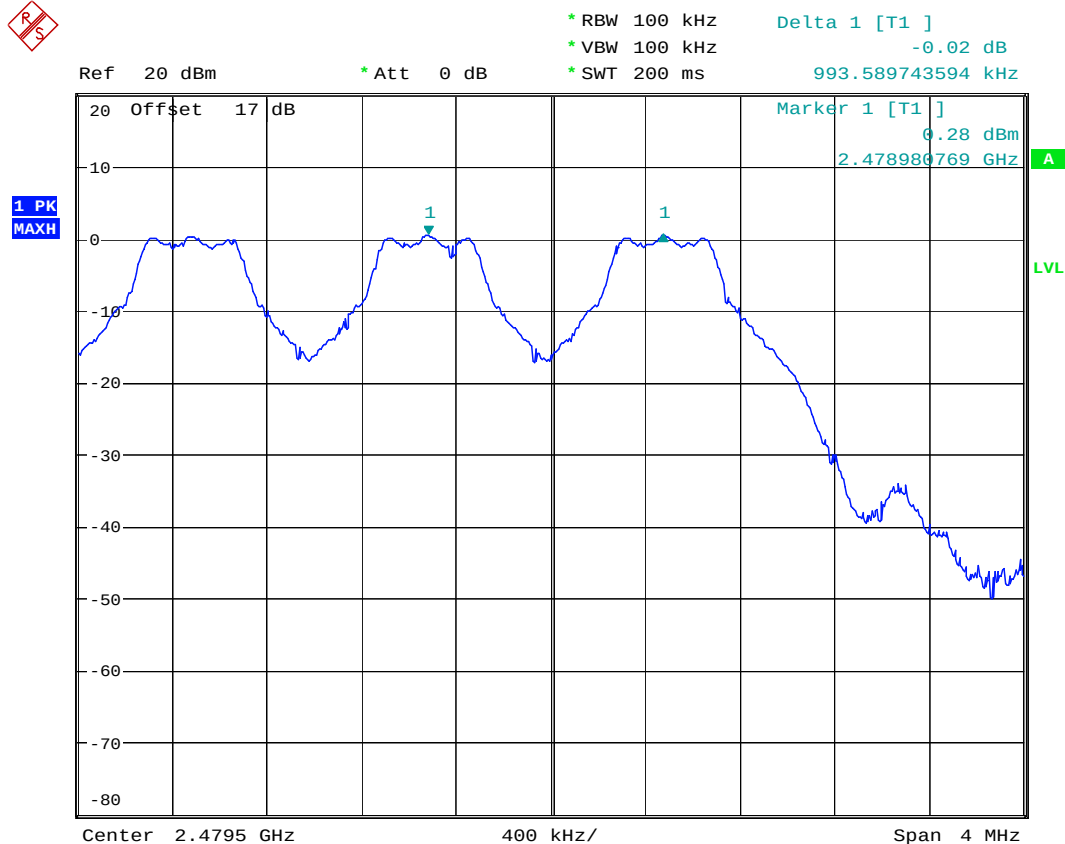
FREQUENCY SEPARATION CH0~CH1

Date: 11.SEP.2007 13:07:07



Date: 11.SEP.2007 13:12:32

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

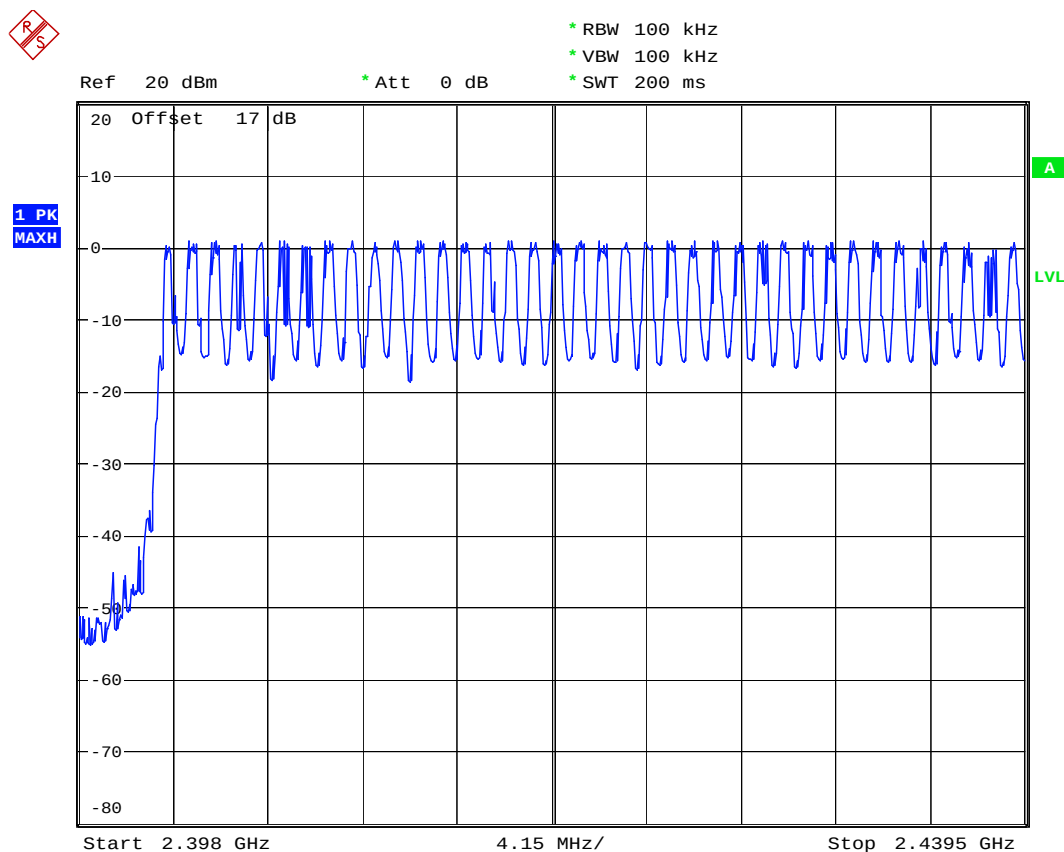


FREQUENCY SEPARATION CH77~CH78

Date: 11.SEP.2007 13:16:38

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

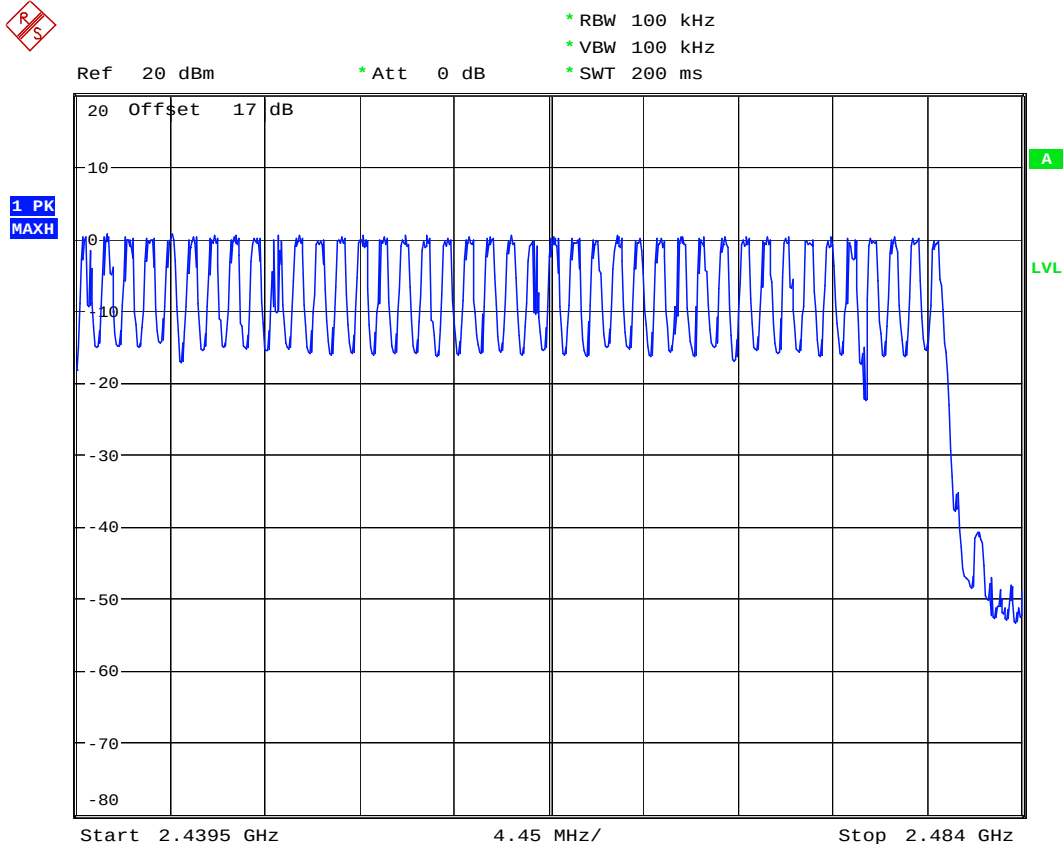
## Number of Hopping Frequencies



NUMBER OF HOPPING CH0-CH37

Date: 11.SEP.2007 12:58:37

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

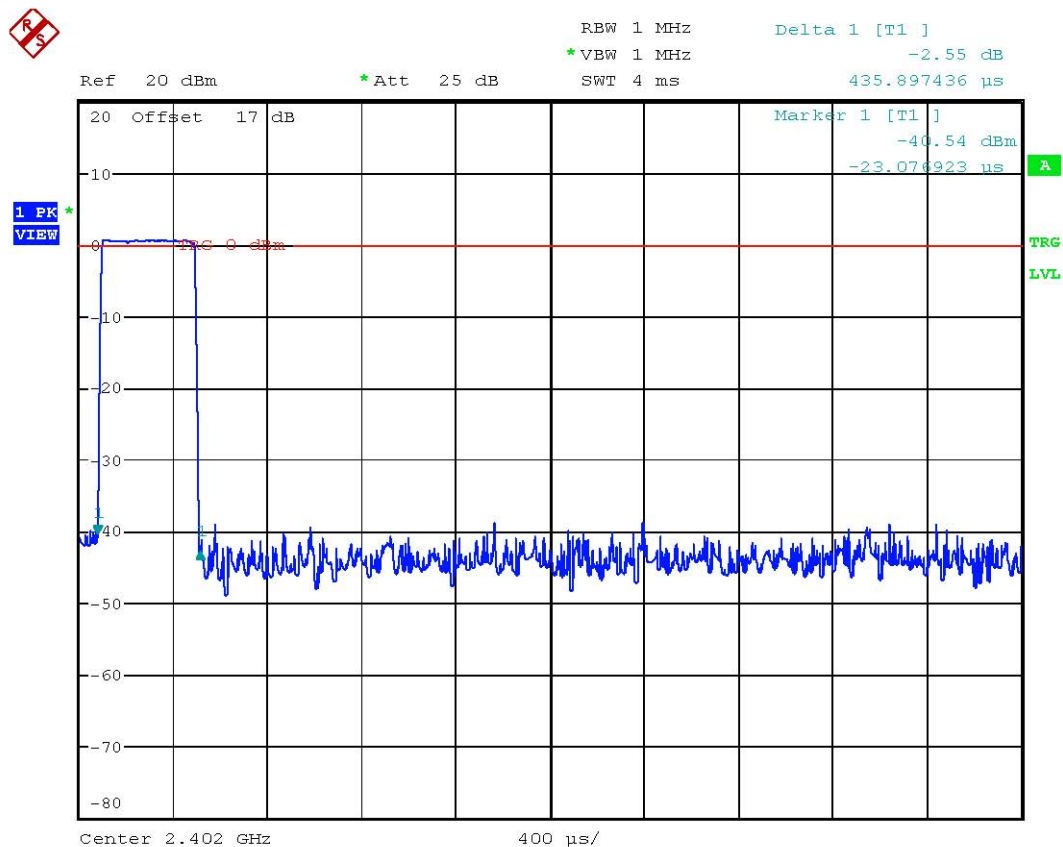


NUMBER OF HOPPING CH38~CH78

Date: 11.SEP.2007 13:02:24

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

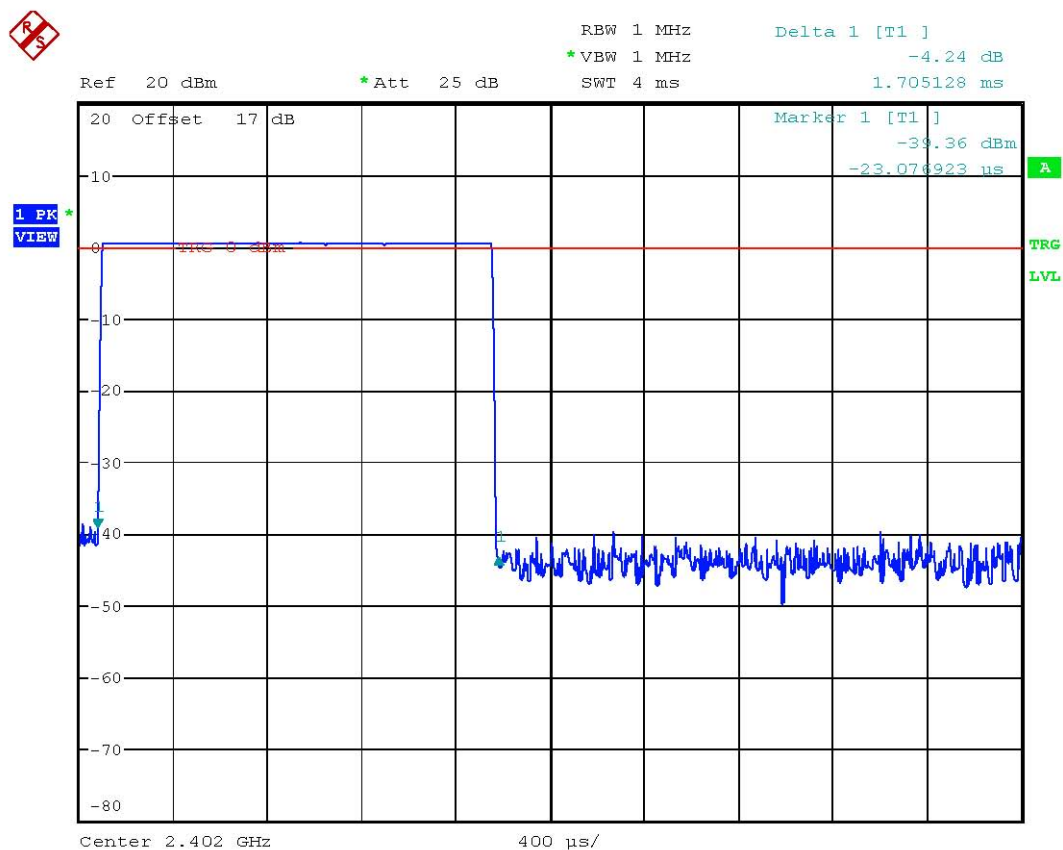
## Time of Occupancy (Dwell Time)



DWELL TIME CHO DH1 ( 0.435ms \* 320event = 139.2ms )

Date: 11.SEP.2007 13:41:59

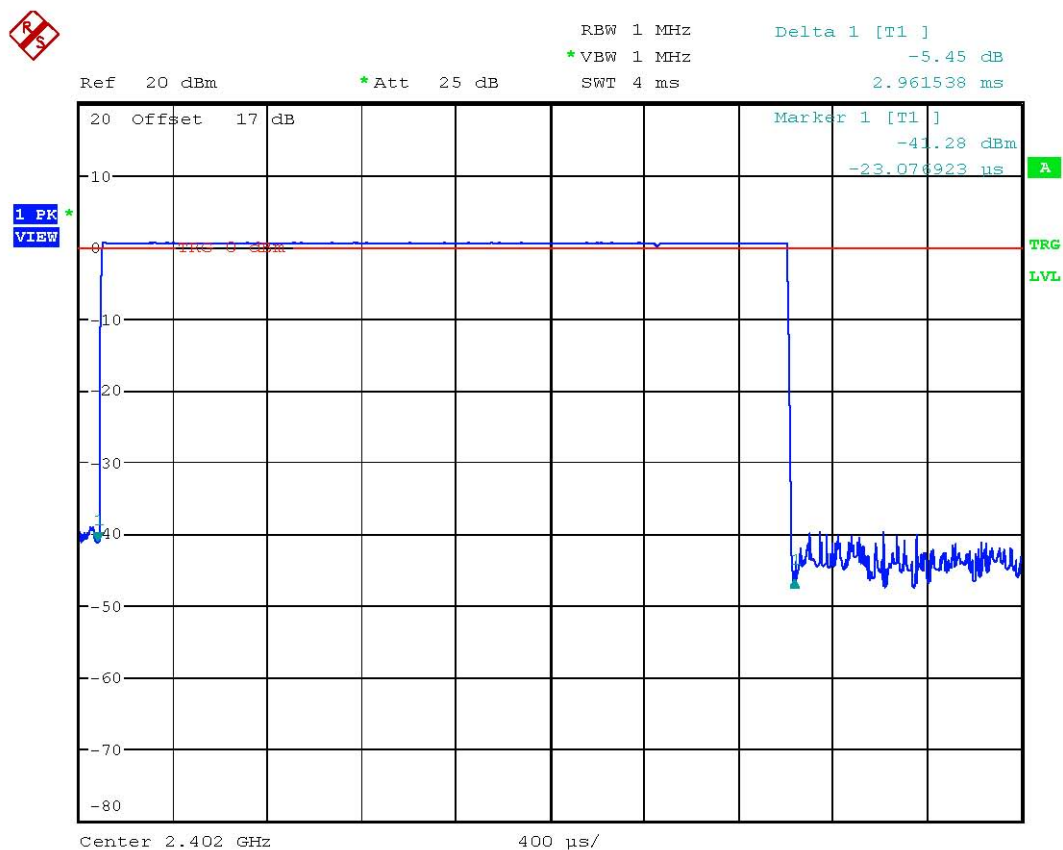
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



DWELL TIME CH0 DH3 ( 1.705ms \* 120event = 204.6ms )  
Date: 11.SEP.2007 13:37:47

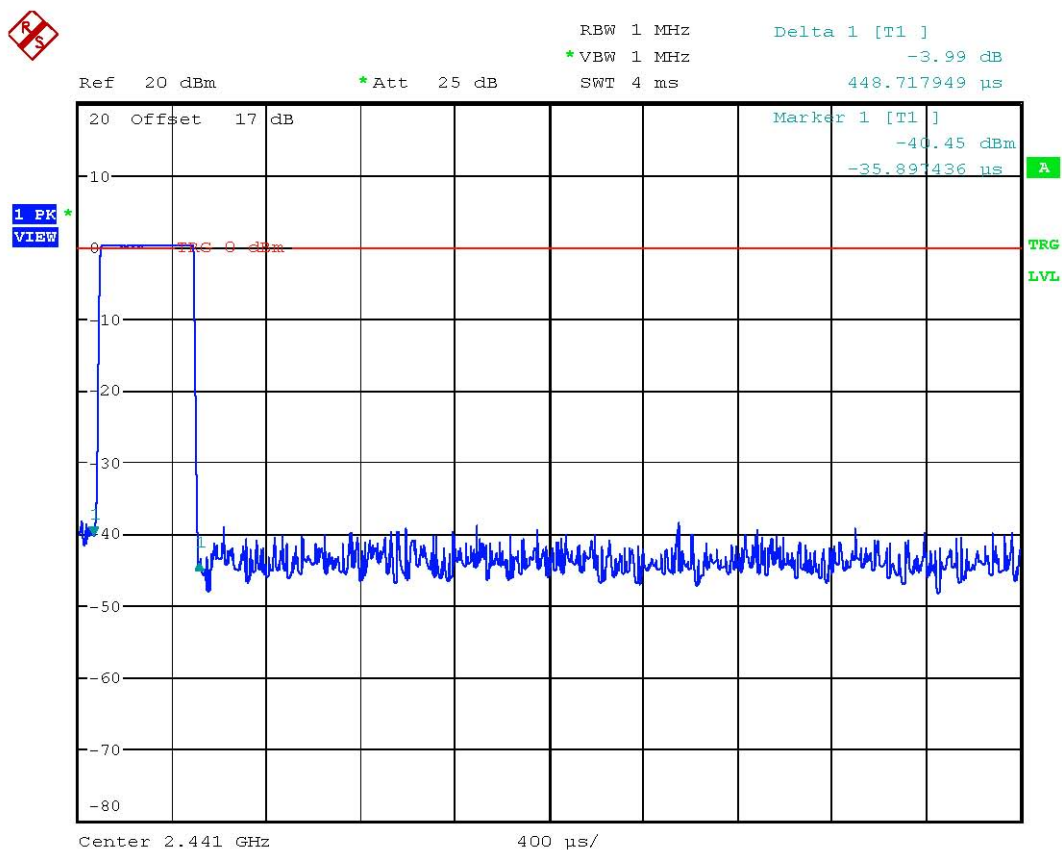


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



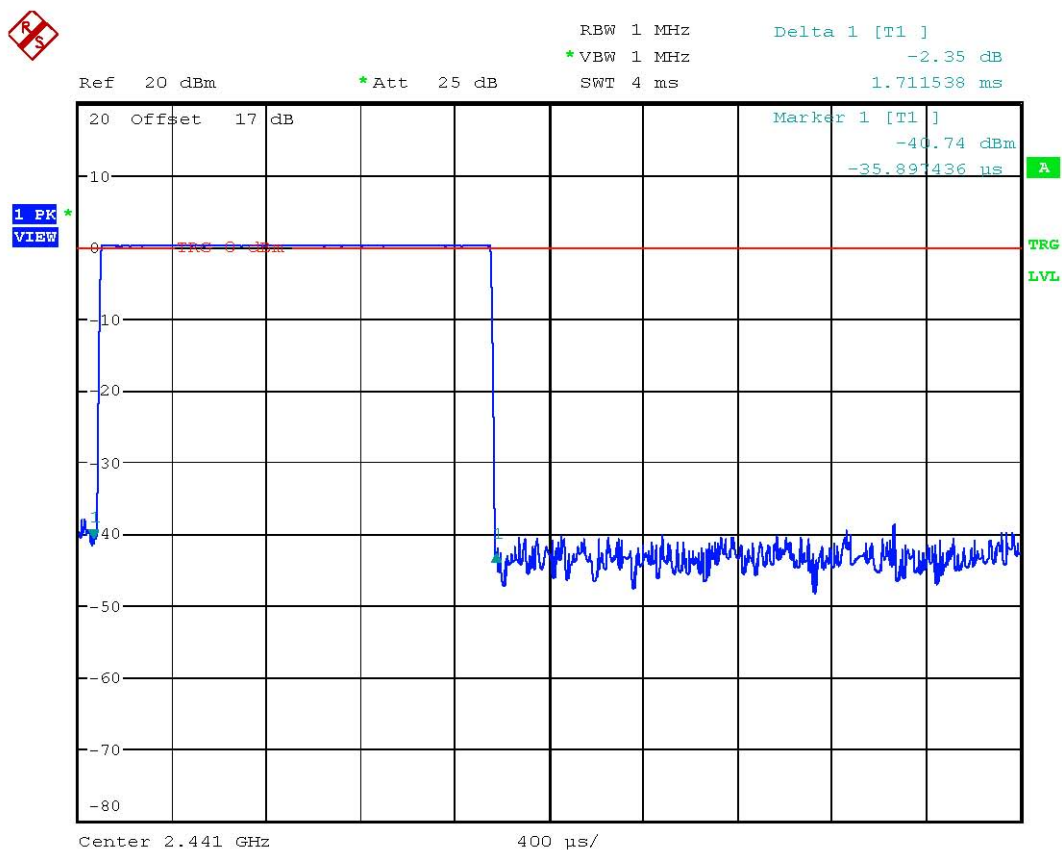
DWELL TIME CH0 DH5 ( 2.961ms \* 90event = 266.49ms )  
Date: 11.SEP.2007 13:41:10

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



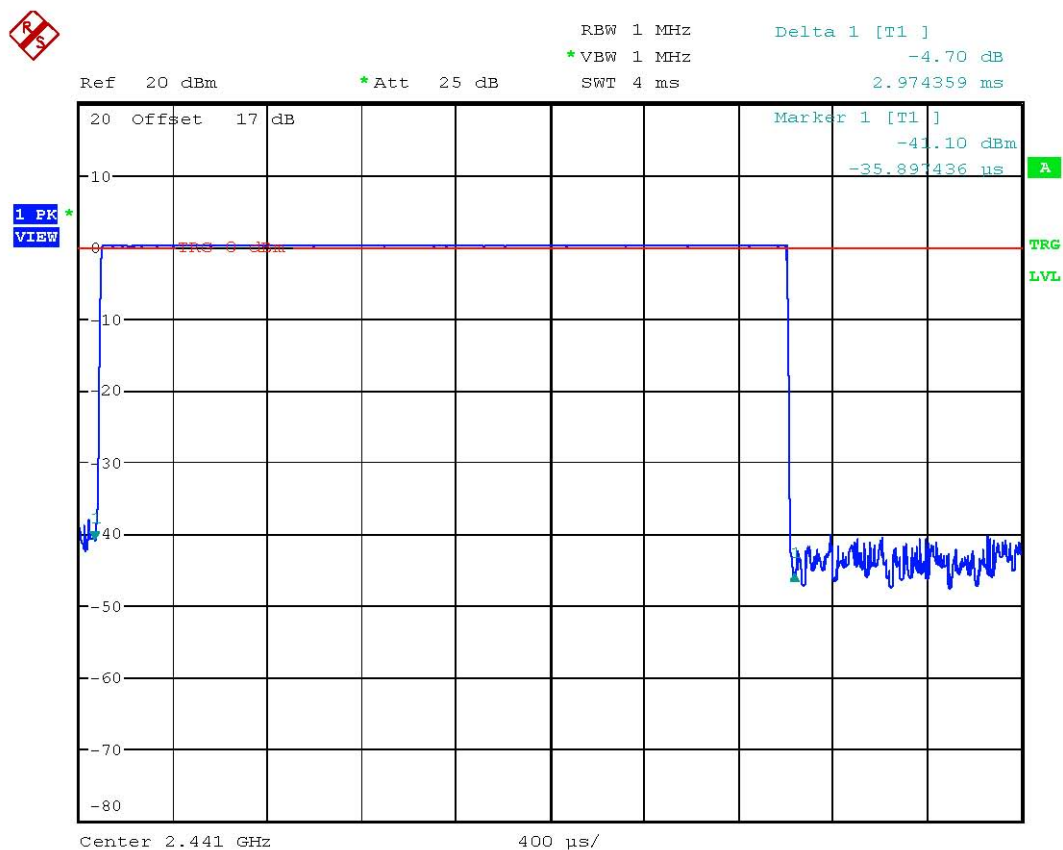
DWELL TIME CH39 DH1 ( 0.448ms \* 330event = 147.84ms )  
Date: 11.SEP.2007 13:45:21

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



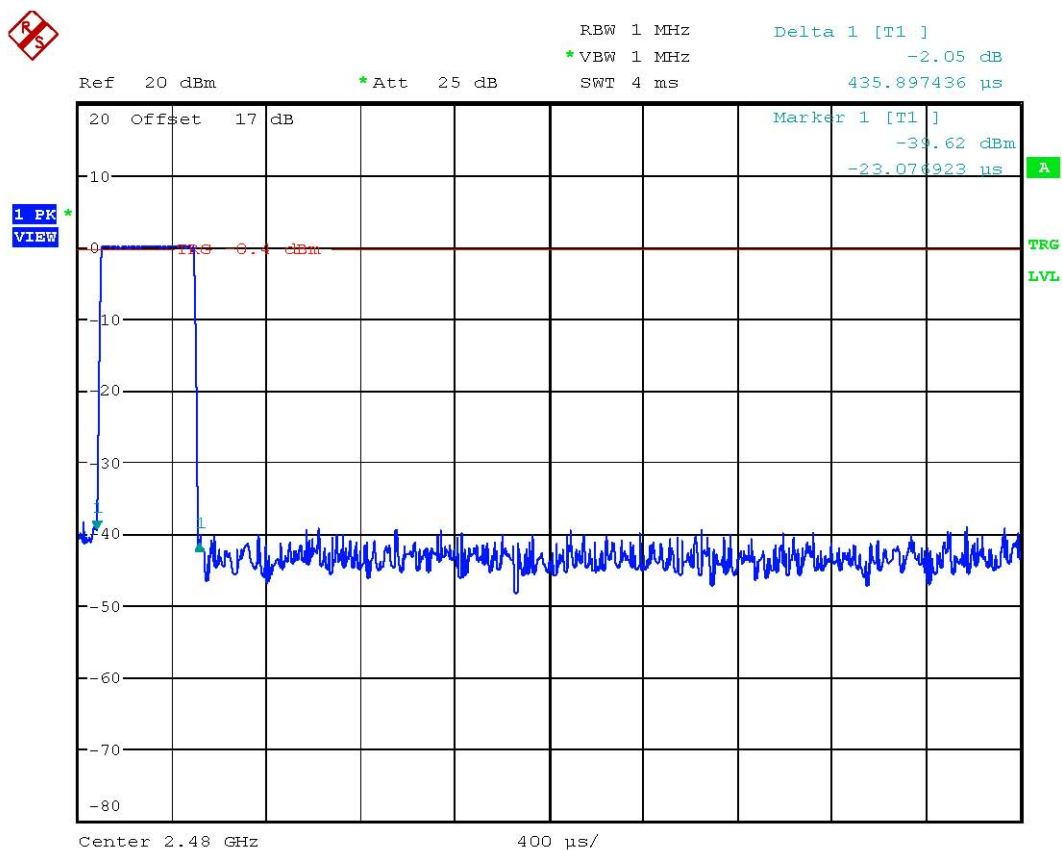
DWELL TIME CH39 DH3 ( 1.711ms \* 130event = 222.43ms )  
Date: 11.SEP.2007 13:47:54

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



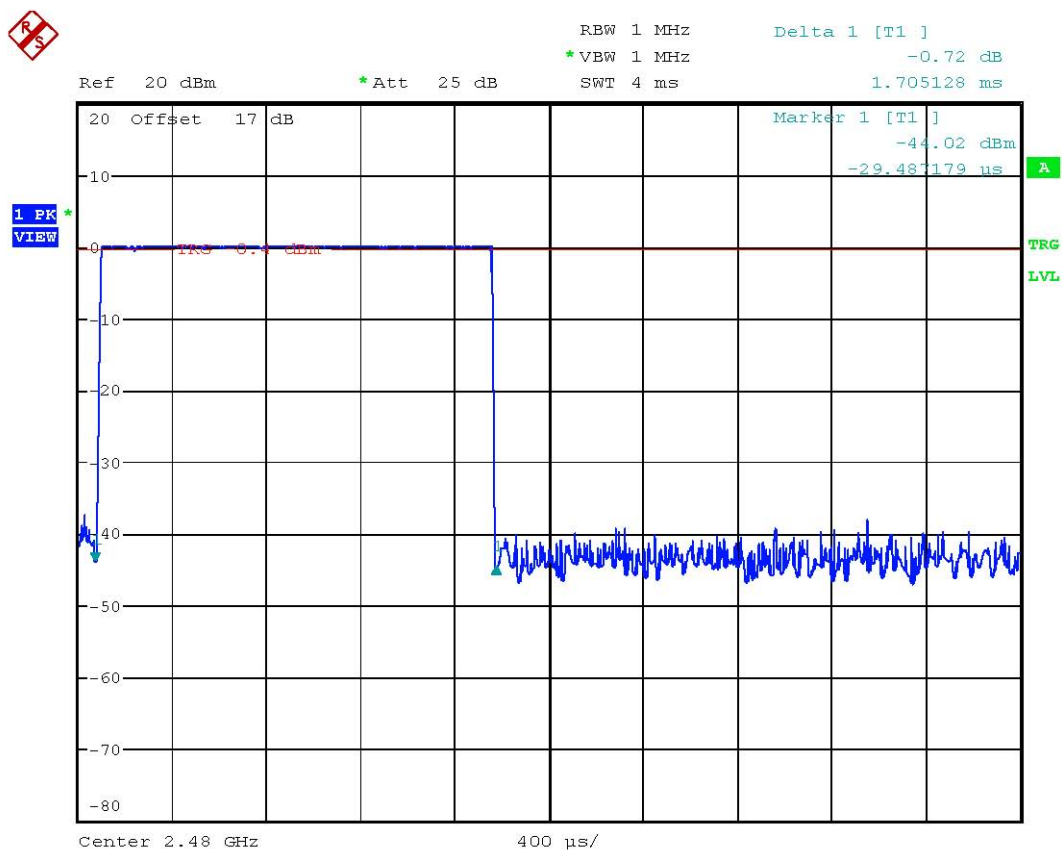
DWELL TIME CH39 DH5 ( 2.974ms \* 100event = 297.4ms )  
Date: 11.SEP.2007 13:46:58

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



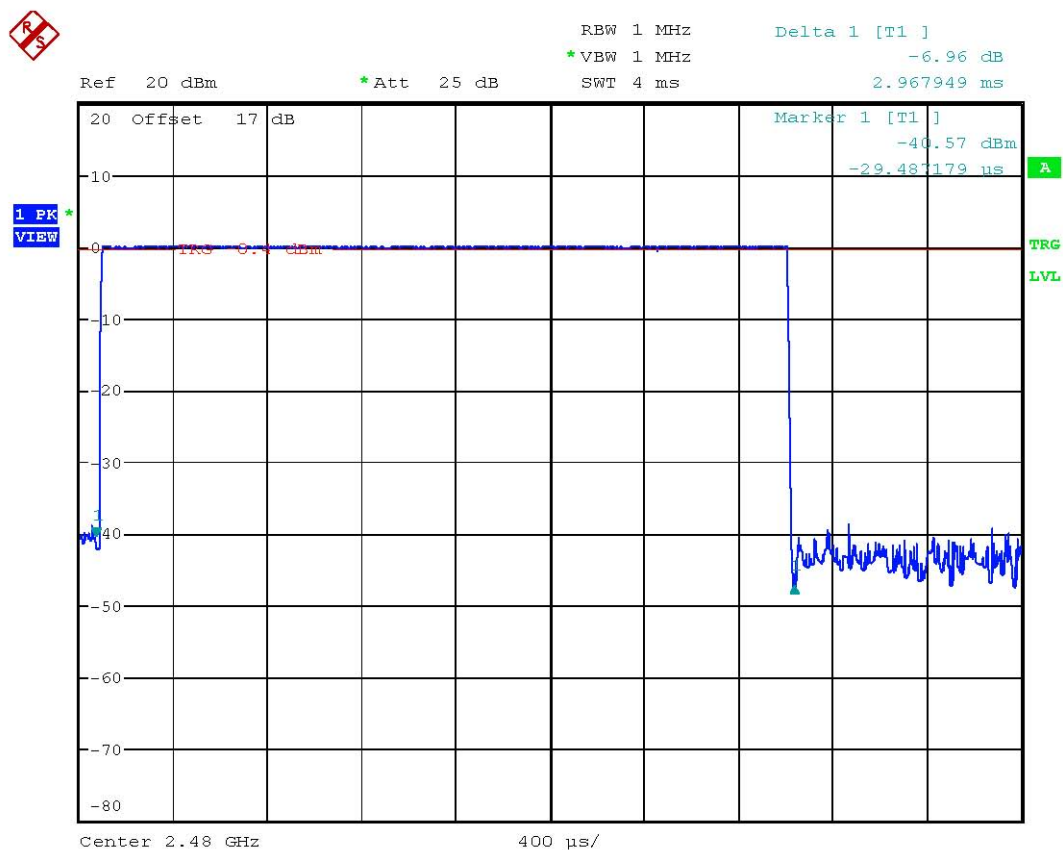
DWELL TIME CH78 DH1 ( 0.435ms \* 310event = 134.85ms )  
Date: 11.SEP.2007 13:49:36

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



DWELL TIME CH78 DH3 ( 1.705ms \* 110event = 187.55ms )  
Date: 11.SEP.2007 13:50:37

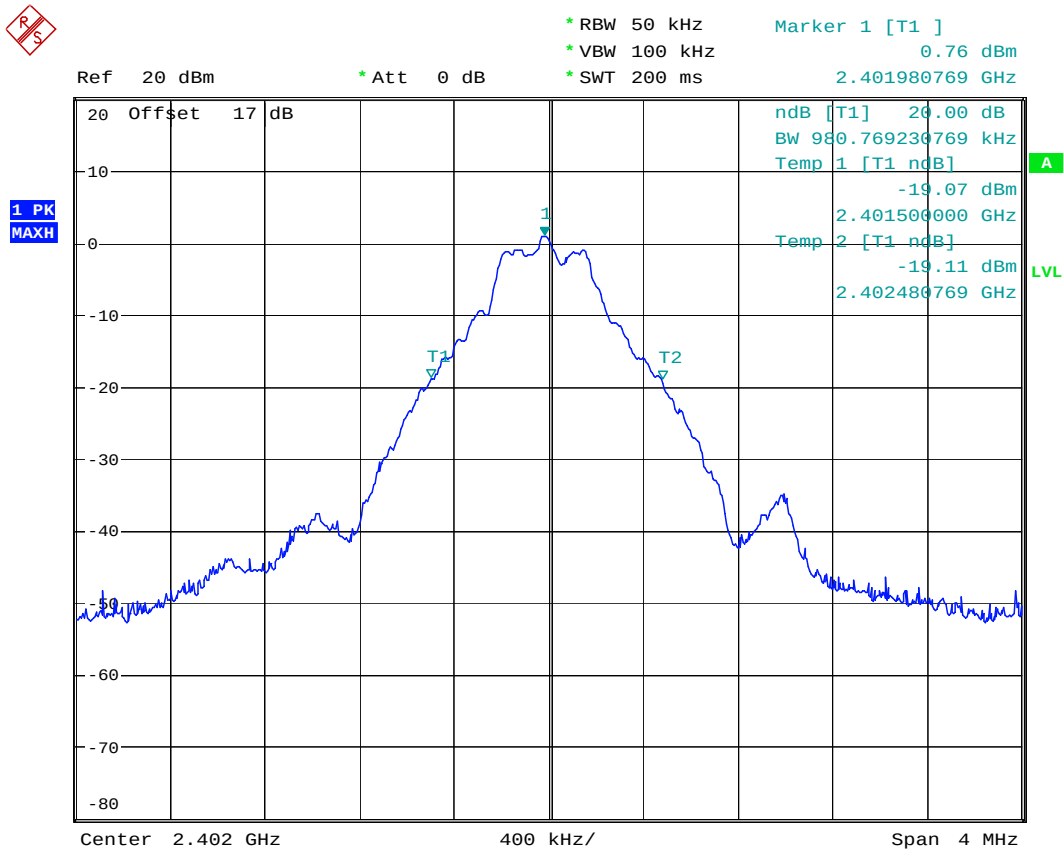
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



DWELL TIME CH78 DH5 ( 2.967ms \* 100event = 296.7ms )  
Date: 11.SEP.2007 13:51:06

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

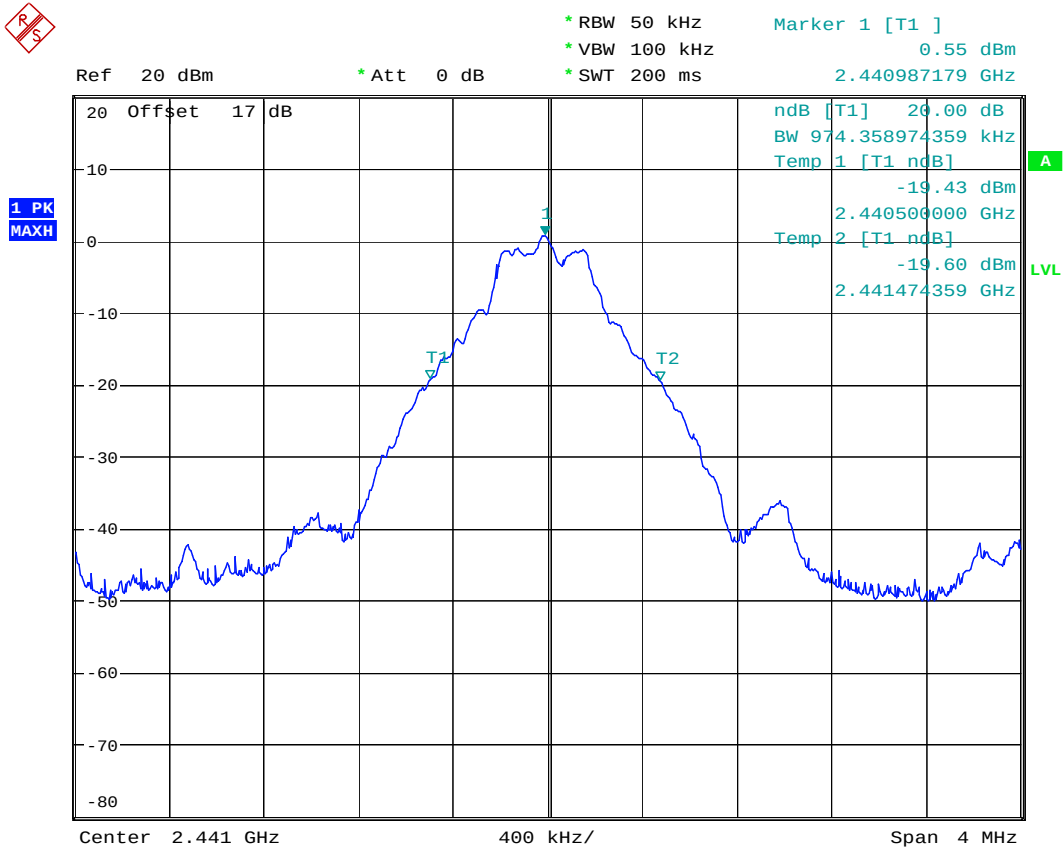
20dB Bandwidth



20dB BANDWIDTH CH0  
Date: 11.SEP.2007 12:48:25

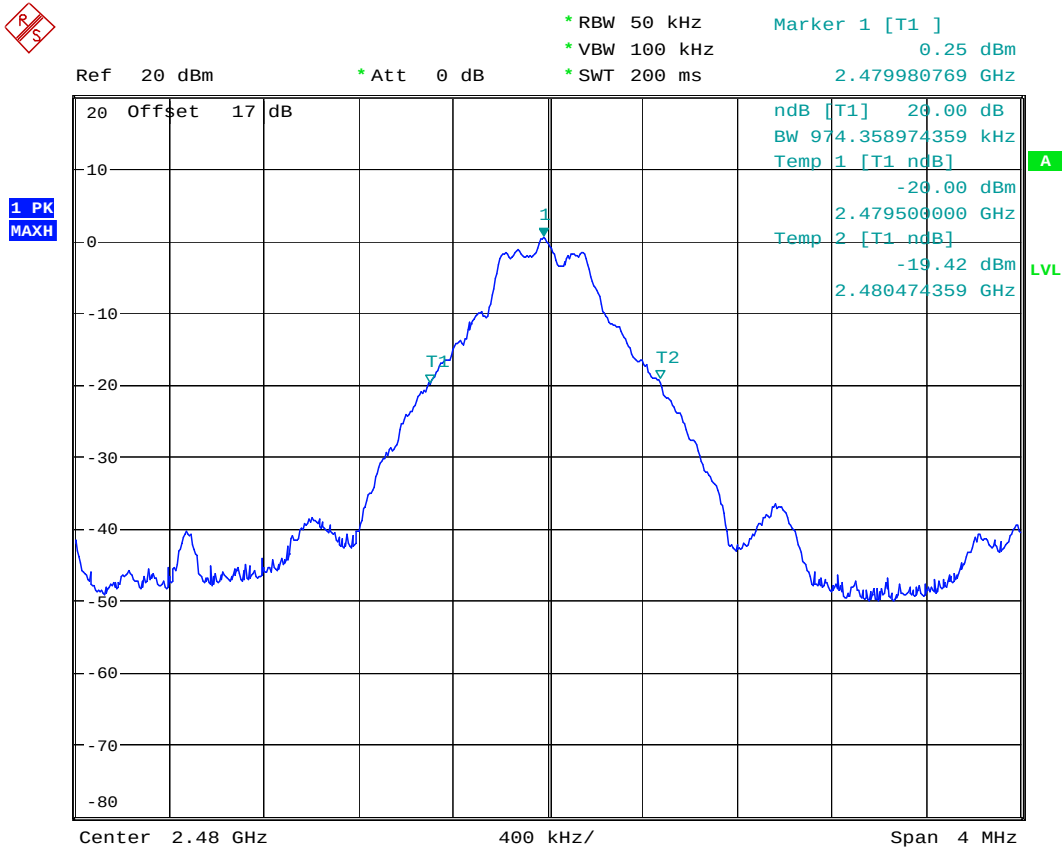


Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



20dB BANDWIDTH CH39  
Date: 11.SEP.2007 12:48:59

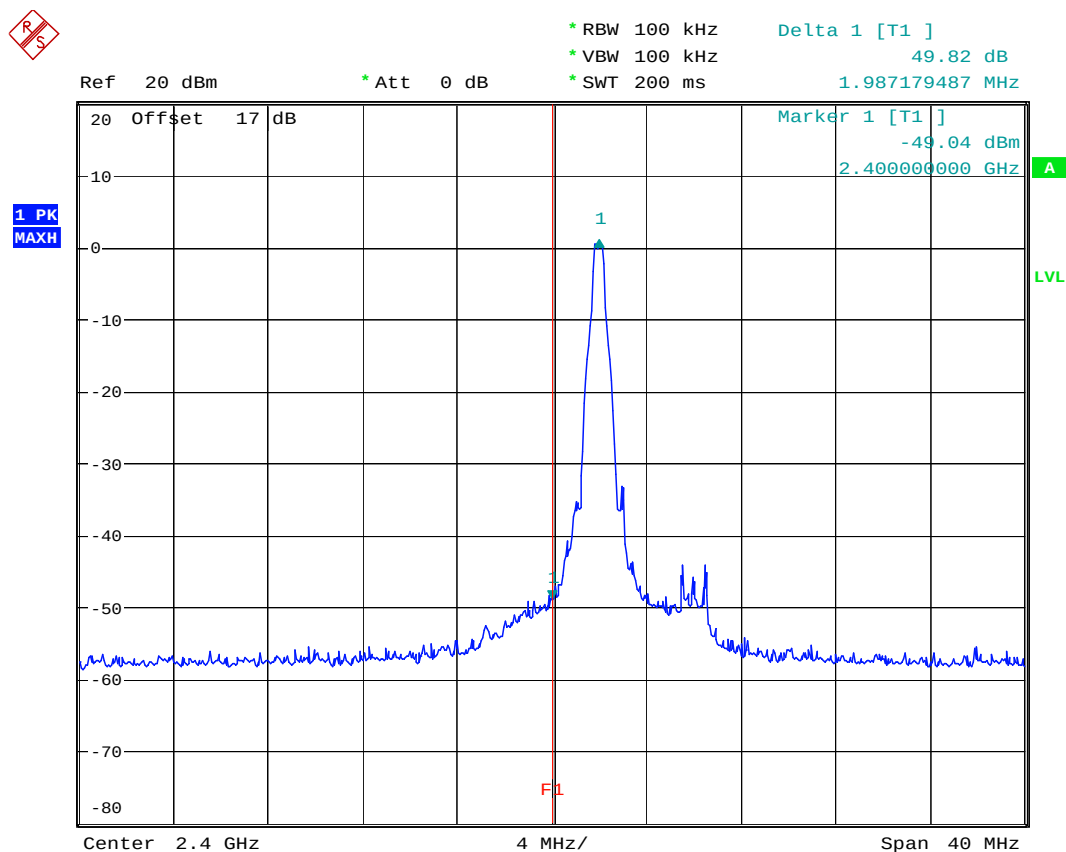
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



20dB BANDWIDTH CH78  
Date: 11.SEP.2007 12:47:54

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

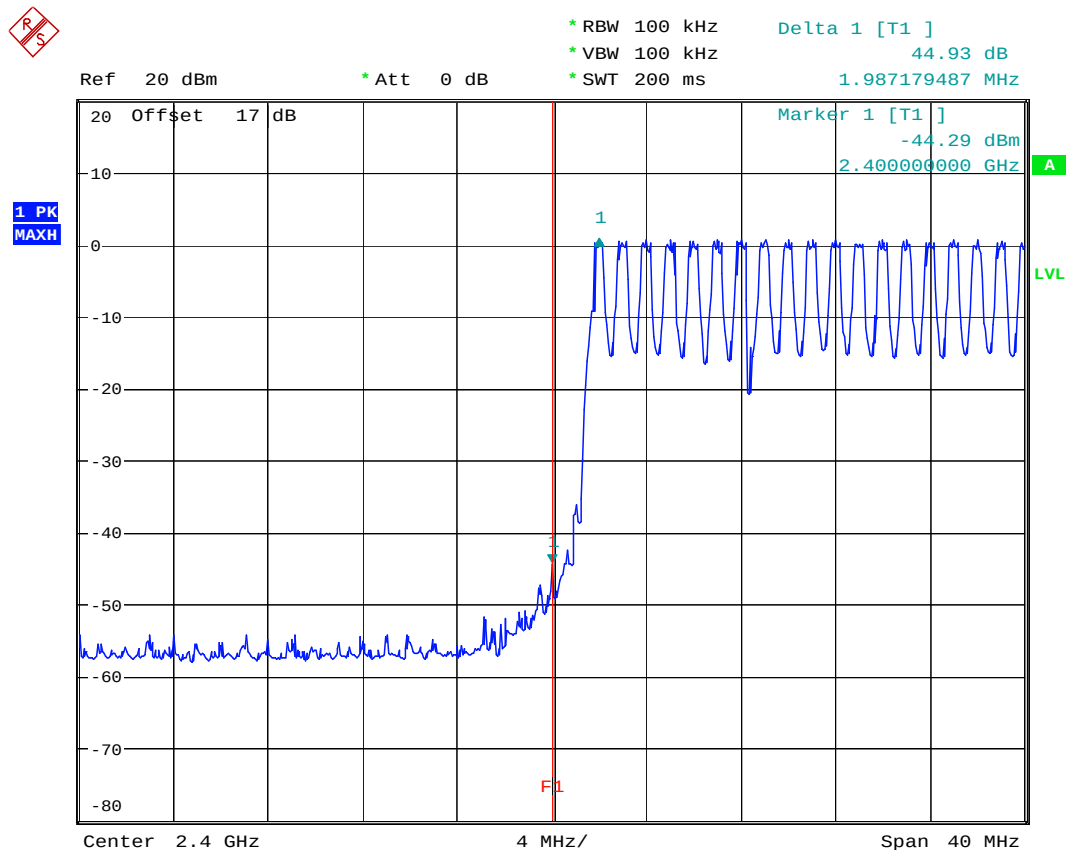
## Band-edge Compliance of RF Conducted Emissions



BANDEDGE CH0

Date: 11.SEP.2007 12:44:25

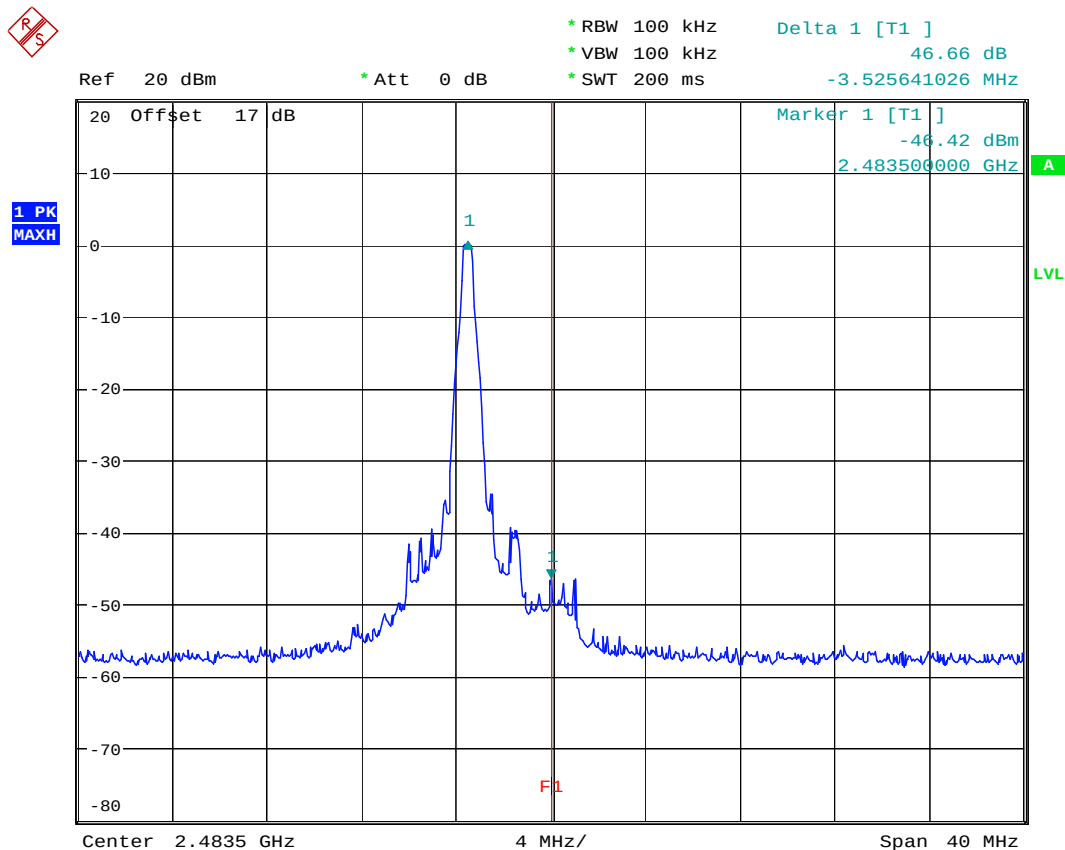
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



BANDEDGE CH0 HOPPING MODE

Date: 11.SEP.2007 13:25:06

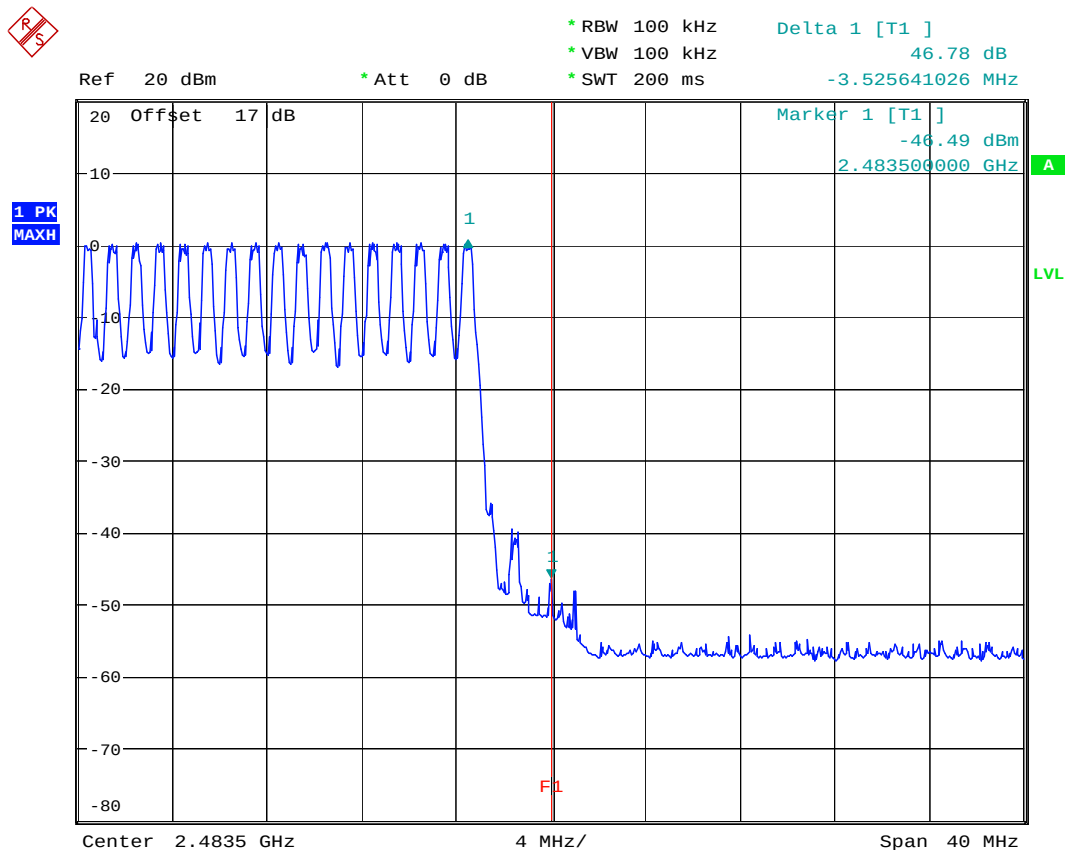
Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



BANDEDGE CH78

Date: 11.SEP.2007 12:43:28

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000



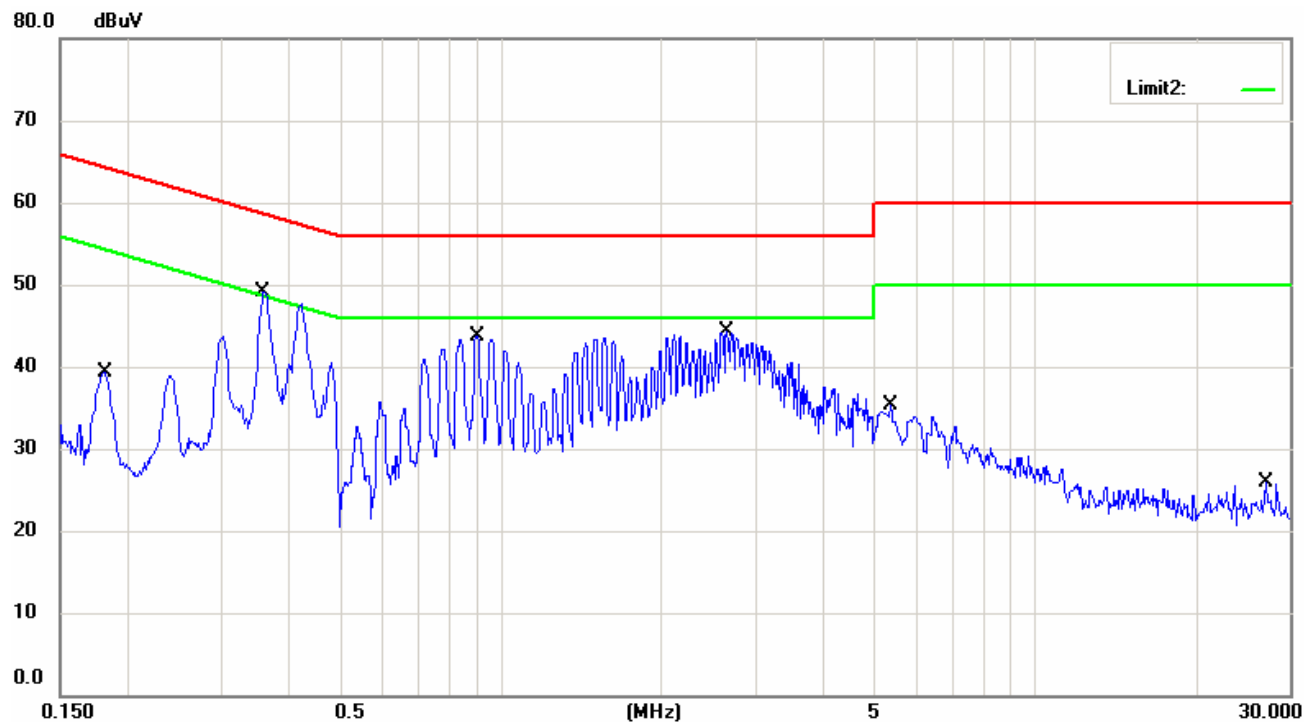
BANDEDGE CH78 HOPPING MODE

Date: 11.SEP.2007 13:21:03

Registration number: W6M20708-8410-P-15  
FCC ID: QQGBT-6000

## Power Line Conducted Emission

### LISN N



### LISN L1

