



卓時檢測  
TIMEWAY TESTING LABORATORY



ISO/IEC17025Accredited Lab.

Report No:

FCC 1001176

File reference No:

2010-02-08

Applicant: Jiaxing Shengteng R/C Model Plane Co., Ltd.

Product: Model Control (Radio Set)

Model No: ST6DF

Trademark: ST Model

Test Standards: FCC Part 15 Subpart C, Paragraph 15.247

Test result:

It is herewith confirmed and found to comply with the requirements set up by ANSI C63.4&FCC Part 15 Subpart C, Paragraph 15.247 regulations for the evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: Feb 08,2010

**Results appearing herein relate only to the sample tested**

**The technical reports is issued errors and omissions exempt and is subject to withdrawal at**

**SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD**

5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District, Shenzhen,CHINA.

Tel (755) 83448688

Fax (755) 83442996



## Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

### **CNAL-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of testing Laboratories.

### **FCC-Registration No.: 899988**

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

### **IC- Registration No.: IC5205A-01**

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-01.

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Test Report Conclusion

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## 1.0 General Details

### 1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD  
Address: 5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District, Shenzhen,CHINA.  
Telephone: (755) 83448688  
Fax: (755) 83442996  
Site on File with the Federal Communications Commission – United States  
Registration Number: 899988  
For 3m & 10 m OATS  
Site Listed with Industry Canada of Ottawa, Canada  
Registration Number: IC: 5205A-01  
For 3m & 10 m OATS

### 1.2 Applicant Details

Applicant: Jiaxing Shengteng R/C Model Plane Co., Ltd.  
Address: 237 Qinjian Road, Jiaxing, Zhejiang, 314000, China  
Telephone: +86-753-82032127  
Fax: +86-753-82089745

### 1.3 Description of EUT

|                       |   |
|-----------------------|---|
| Product:              | Model Control (Radio Set)                   |
| Manufacturer:         | Jiaxing Shengteng R/C Model Plane Co., Ltd. |
| Brand Name:           | ST Model                                    |
| Model Number:         | ST6DF                                       |
| Additional Model Name | N/A   |
| Additional Trade Name | N/A   |
| Rating:               | DC12V (8 pcs AA Batteries)                  |
| Type of Modulation    | FSK   |
| Frequency range       | 2407.5-2473.5MHz                            |
| Antenna type          | Dipole antenna with antenna gain 2.0dBi     |

### 1.4 Submitted Sample: 2 Sample

### 1.5 Test Duration

2010-01-21 to 2010-02-05

### 1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions Uncertainty =4.7dB

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1.7 Test Engineer & verify Engineer

Test Engineer

The sample(s) tested by \_\_\_\_\_

Print Name: Henry Ding/ Engineer

Verify Engineer

The report verified by \_\_\_\_\_

Print Name: Terry Tang/ EMC Manager

| 2.0 Test Equipments |               |            |             |              |            |
|---------------------|---------------|------------|-------------|--------------|------------|
| Instrument Type     | Manufacturer  | Model      | Serial No.  | Date of Cal. | Due Date   |
| ESPI Test Receiver  | ROHDE&SCHWARZ | ESPI 3     | 100379      | 2009-12-05   | 2010-12-04 |
| TWO Line-V-NETW     | ROHDE&SCHWARZ | EZH3-Z5    | 100294      | 2009-12-05   | 2010-12-04 |
| TWO Line-V-NETW     | ROHDE&SCHWARZ | EZH3-Z5    | 100253      | 2009-12-05   | 2010-12-04 |
| Ultra Broadband ANT | Schwarebeck   | VULB9163   | 9163/340    | 2009-2-22    | 2010-02-21 |
| ESDV Test Receiver  | ROHDE&SCHWARZ | ESDV       | 100008      | 2009-03-30   | 2010-03-29 |
| Impuls-Begrenzer    | ROHDE&SCHWARZ | ESH3-Z2    | 100281      | 2009-02-18   | 2010-02-17 |
| Power meter         | Anritsu       | ML2487A    | 6K00003613  | 2009-02-18   | 2010-02-17 |
| Power sensor        | Anritsu       | MA2491A    | 32263       | 2009-02-18   | 2010-02-17 |
| ESPI Test Receiver  | ROHDE&SCHWARZ | ESI26      | 838786/013  | 2009-02-18   | 2010-02-17 |
| Horn Antenna        | SCHWARZBECK   | BBHA 9170  | BBHA9170265 | 2009-08-15   | 2010-08-14 |
| Horn Antenna        | SCHWARZBECK   | BBHA 9120D | 9120D-631   | 2009-07-02   | 2010-07-01 |
| Loop Antenna        | EMCO          | 6507       | 102615      | 2009-04-26   | 2010-04-25 |

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### 3.0 Technical Details

#### 3.1 Summary of test results

The EUT has been tested according to the following specifications:

| Standard  | Test Type   | Result | Notes    |
|---|---|--------|----------|
| <b>FCC Part 15, Paragraph 15.107 &amp; 15.207</b>         | Conducted Emission Test   | N/A    | Complies |
| <b>FCC Part 15 Subpart C Paragraph 15.247(a)(2) Limit</b> | <b>Spectrum bandwidth of a Orthogonal Frequency Division Multiplex System Limit: 6dB bandwidth&gt;500kHz</b>  | PASS   | Complies |
| <b>FCC Part 15, Paragraph 15.247(b)</b>                   | <b>Maximum peak output power Limit: max. 30dBm</b>  | PASS   | Complies |
| <b>FCC Part 15, Paragraph 15.109,15.205 &amp; 15.209</b>  | <b>Transmitter Radiated Emission Limit: Table 15.209</b>  | PASS   | Complies |
| <b>FCC Part 15, Paragraph 15.247(d)</b>                   | <b>Power Spectral Density Limit: max. 8dBm</b>  | PASS   | Complies |
| <b>FCC Part 15, Paragraph 15.247(c)</b>                   | <b>Out of Band Emission and Restricted Band Radiation Limit: 20dB less than peak value of fundamental frequency Restricted band limit: Table 15.209</b> | PASS   | Complies |

#### 3.2 Test Standards

**FCC Part 15 Subpart & Subpart C, Paragraph 15.247**

#### 4.0 EUT Modification

**No modification by Shenzhen Timeway Technology Consulting Co.,Ltd**

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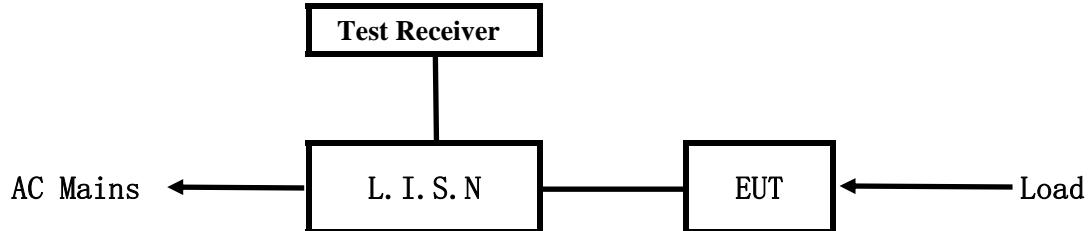
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## 5. Power Line Conducted Emission Test

### 5.1 Schematics of the test

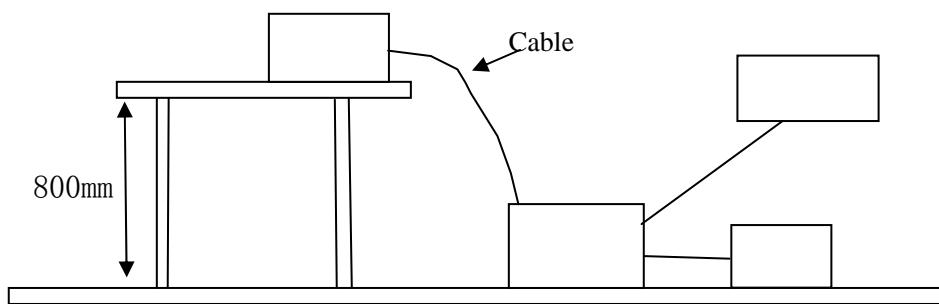


EUT: Equipment Under Test

### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2003.

Block diagram of Test setup



### 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

#### A. EUT

| Device                       | Manufacturer                                   | Model | FCC ID        |
|------------------------------|--|-------|---------------|
| Model Control<br>(Radio Set) | Jiaxing Shengteng R/C Model Plane Co.,<br>Ltd. | ST6DF | UZ6--ST10018A |

#### B. Internal Device

| Device | Manufacturer | Model | FCC ID/DOC |
|--------|--------------|-------|------------|
| N/A    |              |       |            |

#### C. Peripherals

| Device | Manufacturer | Model | FCC ID/DOC | Cable |
|--------|--------------|-------|------------|-------|
|        |              |       |            |       |

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|     |  |  |  |  |
|-----|--|--|--|--|
| N/A |  |  |  |  |
|-----|--|--|--|--|

#### 5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2003.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

#### 5.5 Power line conducted Emission Limit according to Paragraph 15.207

| Frequency<br>(MHz) | Class A Limits (dB $\mu$ V) |               | Class B Limits (dB $\mu$ V) |               |
|--------------------|-----------------------------|---------------|-----------------------------|---------------|
|                    | Quasi-peak Level            | Average Level | Quasi-peak Level            | Average Level |
| 0.15 ~ 0.50        | 79.0                        | 66.0          | 66.0~56.0*                  | 56.0~46.0*    |
| 0.50 ~ 5.00        | 73.0                        | 60.0          | 56.0                        | 46.0          |
| 5.00 ~ 30.00       | 73.0                        | 60.0          | 60.0                        | 50.0          |

Notes: 1. \*Decreasing linearly with logarithm of frequency.  
2. The tighter limit shall apply at the transition frequencies

#### 5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

**Note: Due to DC Operation, this test item not applicable.**

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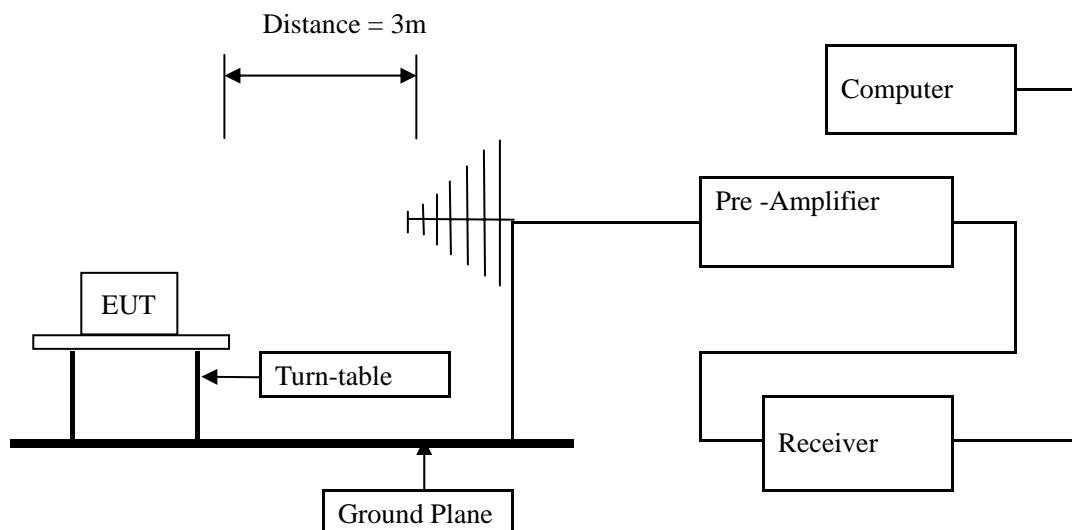


## 6 Radiated Emission Test

### 6.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.4 -2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
- (3) The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz . Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization : Vertical polarization and Horizontal polarization.

### Block diagram of Test setup



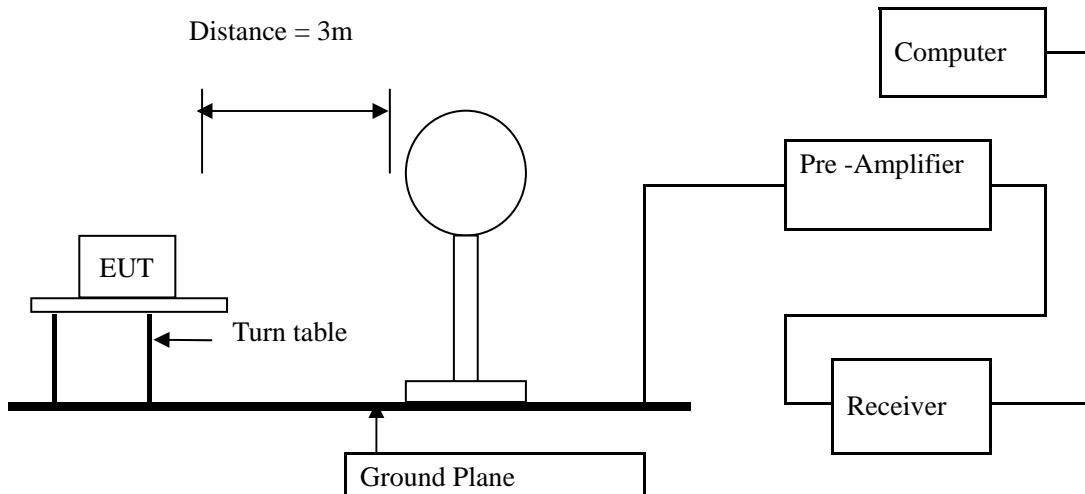
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Block diagram of Test setup for frequency below 30MHz



#### 6.2 Configuration of The EUT

Same as section 5.3 of this report

#### 6.3 EUT Operating Condition

Same as section 5.4 of this report.

#### 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

#### **Frequencies in restricted band are complied to limit on Paragraph 15.209 and RSS-210**

| Frequency Range (MHz) | Distance (m) | Field strength (dB $\mu$ V/m) |
|-----------------------|--------------|-------------------------------|
| 30-88                 | 3            | 40.0                          |
| 88-216                | 3            | 43.5                          |
| 216-960               | 3            | 46.0                          |
| Above 960             | 3            | 54.0                          |

Note: 1. RF Voltage (dBuV) =  $20 \log_{10}$  RF Voltage (uV)  
2. In the Above Table, the higher limit applies at the band edges.  
3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

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**Test result**

**General Radiated Emission Data and Harmonics Radiated Emission Data**

**Radiated Emission In Horizontal (30MHz----1000MHz)**

EUT set Condition: Tx under transmitting mode

**Results:** **Pass**

Model:

| Frequency (MHz) | Level@3m (dB $\mu$ V/m) | Antenna Polarity | Limit@3m (dB $\mu$ V/m) |
|-----------------|-------------------------|------------------|-------------------------|
| 112.00          | 31.66                   | H                | 43.50                   |
| 288.00          | 31.33                   | H                | 46.00                   |
| 256.00          | 28.64                   | H                | 46.00                   |
|                 |                         |                  |                         |
| 96.00           | 27.51                   | V                | 43.50                   |
| 112.00          | 34.41                   | V                | 43.50                   |
| 288.00          | 33.92                   | V                | 46.00                   |
| 320.00          | 34.60                   | V                | 46.00                   |

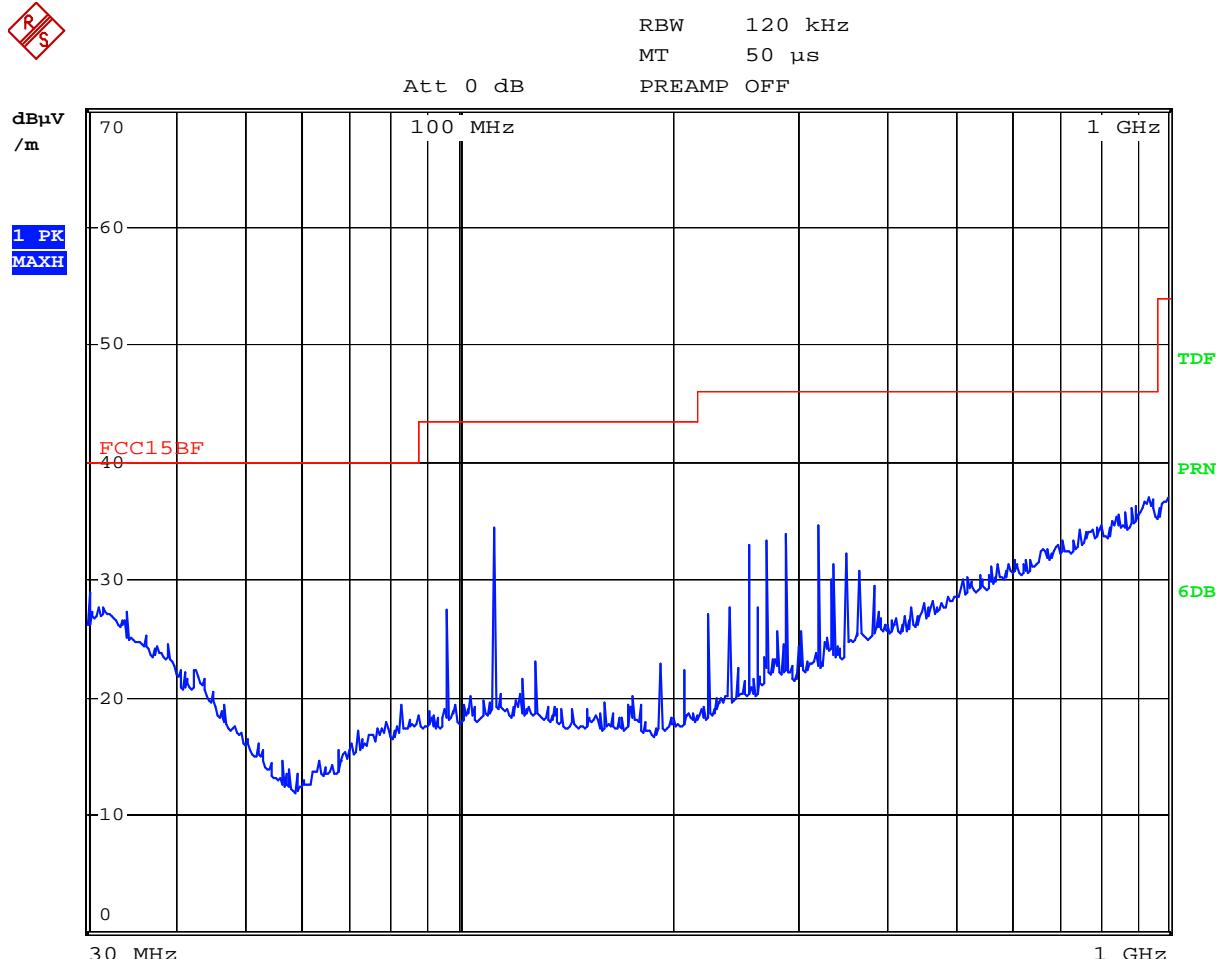
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**Test Figure: transmitting mode**



Date: 3.FEB.2010 13:16:51

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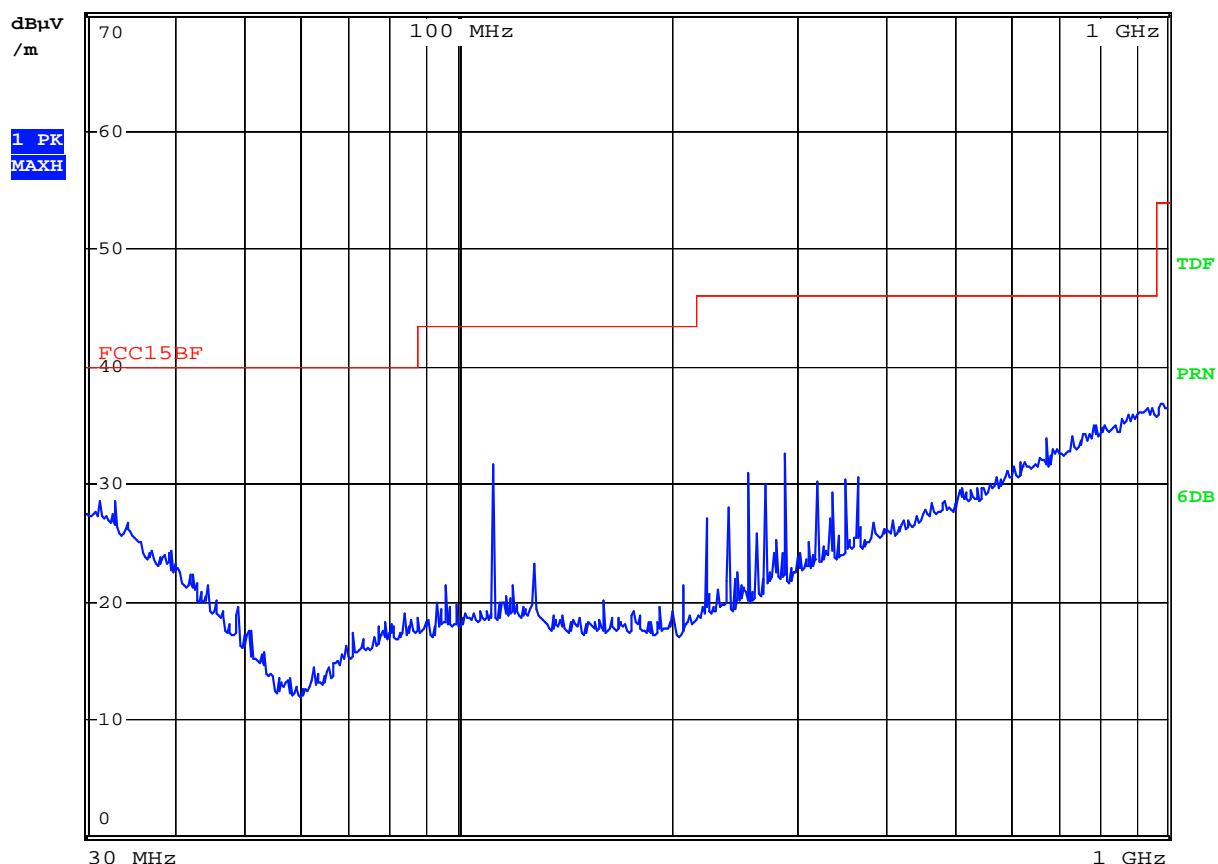
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Horizontal

RS

RBW 120 kHz  
MT 50  $\mu$ s  
Att 0 dB  
PREAMP OFF



Date: 3.FEB.2010 13:13:03

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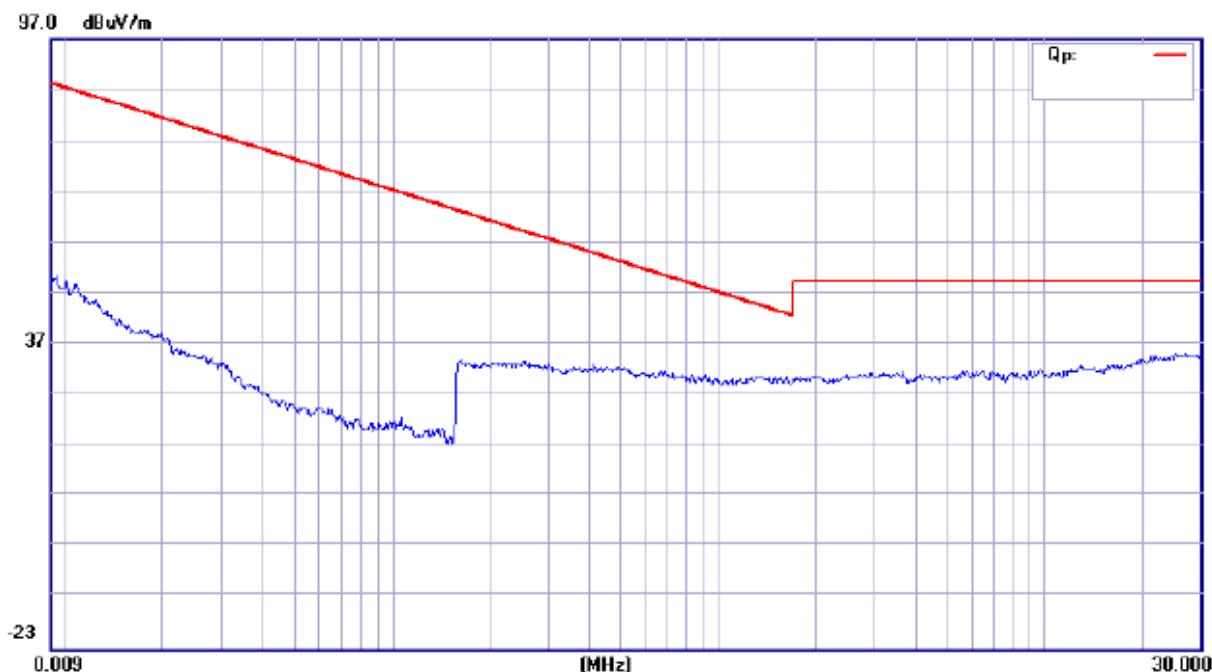
**Radiated Emission from 0.009MHz-30MHz**

EUT set Condition: Keep transmitting

Mode: Low Channel

**Results: Pass**

Please refer to following diagram for individual



| Frequency (MHz) | Level@3m (dB $\mu$ V/m) | Antenna Polarity | Limit@3m (dB $\mu$ V/m) |
|-----------------|-------------------------|------------------|-------------------------|
| --              | --                      | --               | --                      |

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**Operation Mode: Transmitting under Low Channel**

| Frequency (MHz) | Level@3m (dB $\mu$ V/m) | Antenna Polarity | Limit@3m (dB $\mu$ V/m) |
|-----------------|-------------------------|------------------|-------------------------|
| 2407.50         | 82.06 (PK)              | V                | Fundamental Frequency   |
| 2407.50         | 71.73 (PK)              | H                |                         |
| 4815.00         | 52.89 (PK)/ 39.17 (AV)  | V                | 74(Peak)/ 54(AV)        |
| 4815.00         | 50.69 (PK)/ 36.78(AV)   | H                | 74(Peak)/ 54(AV)        |
| 7222.50         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 9630.00         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 12037.5         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 14445           | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 16852.5         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 19260           | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 21667.5         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 24075           | --                      | H/V              | 74(Peak)/ 54(AV)        |

**Operation Mode: Transmitting under CH Mid**

| Frequency (MHz) | Level@3m (dB $\mu$ V/m) | Antenna Polarity | Limit@3m (dB $\mu$ V/m) |
|-----------------|-------------------------|------------------|-------------------------|
| 2440.50         | 71.62 (PK)/             | H                | Fundamental Frequency   |
| 2440.50         | 82.49(PK)/              | V                |                         |
| 4881.00         | 54.80(PK)/40.21(AV)     | H                | 74(Peak)/ 54(AV)        |
| 4881.00         | 58.11(PK)/43.94(AV)     | V                | 74(Peak)/ 54(AV)        |
| 7321.50         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 9762.00         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 12202.5         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 14643           | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 17083.5         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 19524           | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 21964.5         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 24405           | --                      | H/V              | 74(Peak)/ 54(AV)        |

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**Operation Mode: Transmitting under CH High**

| Frequency (MHz) | Level@3m (dB $\mu$ V/m) | Antenna Polarity | Limit@3m (dB $\mu$ V/m) |
|-----------------|-------------------------|------------------|-------------------------|
| 2473.5.00       | 82.08 (PK)              | H                | Fundamental Frequency   |
| 2473.5.00       | 74.30 (PK)              | V                |                         |
| 4947            | 44.31 (PK)              | V                | 74(Peak)/ 54(AV)        |
| 4947            | --                      | H                | 74(Peak)/ 54(AV)        |
| 7420.5          | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 9894            | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 12367.5         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 14841           | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 17314.5         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 19788           | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 22261.5         | --                      | H/V              | 74(Peak)/ 54(AV)        |
| 24735           | --                      | H/V              | 74(Peak)/ 54(AV)        |

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit  
2. Remark “---” means that the emissions level is too low to be measured  
3. Margin=Emission-Limits  
4. According to section 15.35(b), the peak limit is 20dB higher than the average limit  
5. The whole hole frequency band is scanned. The measurement frequency range is up to 10<sup>th</sup> harmonic

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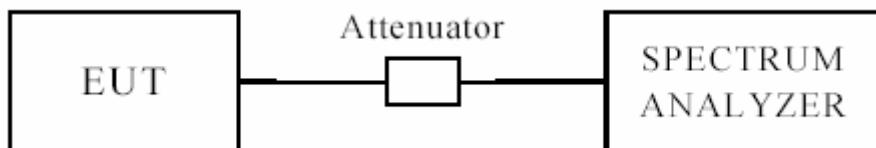
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## 7.0 6dB Bandwidth Measurement

### 7.1 Test Setup



### 7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500KHz

### 7.3 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 100 KHz RBW and 100 KHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

### 7.4 Test Result

| EUT         |                         | Model Control (Radio Set) | Model               | ST6DF      |
|-------------|-------------------------|---------------------------|---------------------|------------|
| Mode        |                         | Keep Transmitting         | Input Voltage       | DC 12V     |
| Temperature |                         | 24 deg. C,                | Humidity            | 56% RH     |
| Channel     | Channel Frequency (MHz) | 6 dB Bandwidth (MHz)      | Minimum Limit (MHz) | Pass/ Fail |
| Low         | 2407.5                  | 0.581                     | 0.5                 | Pass       |
| Mid         | 2440.5                  | 0.571                     | 0.5                 | Pass       |
| High        | 2473.5                  | 0.591                     | 0.5                 | Pass       |

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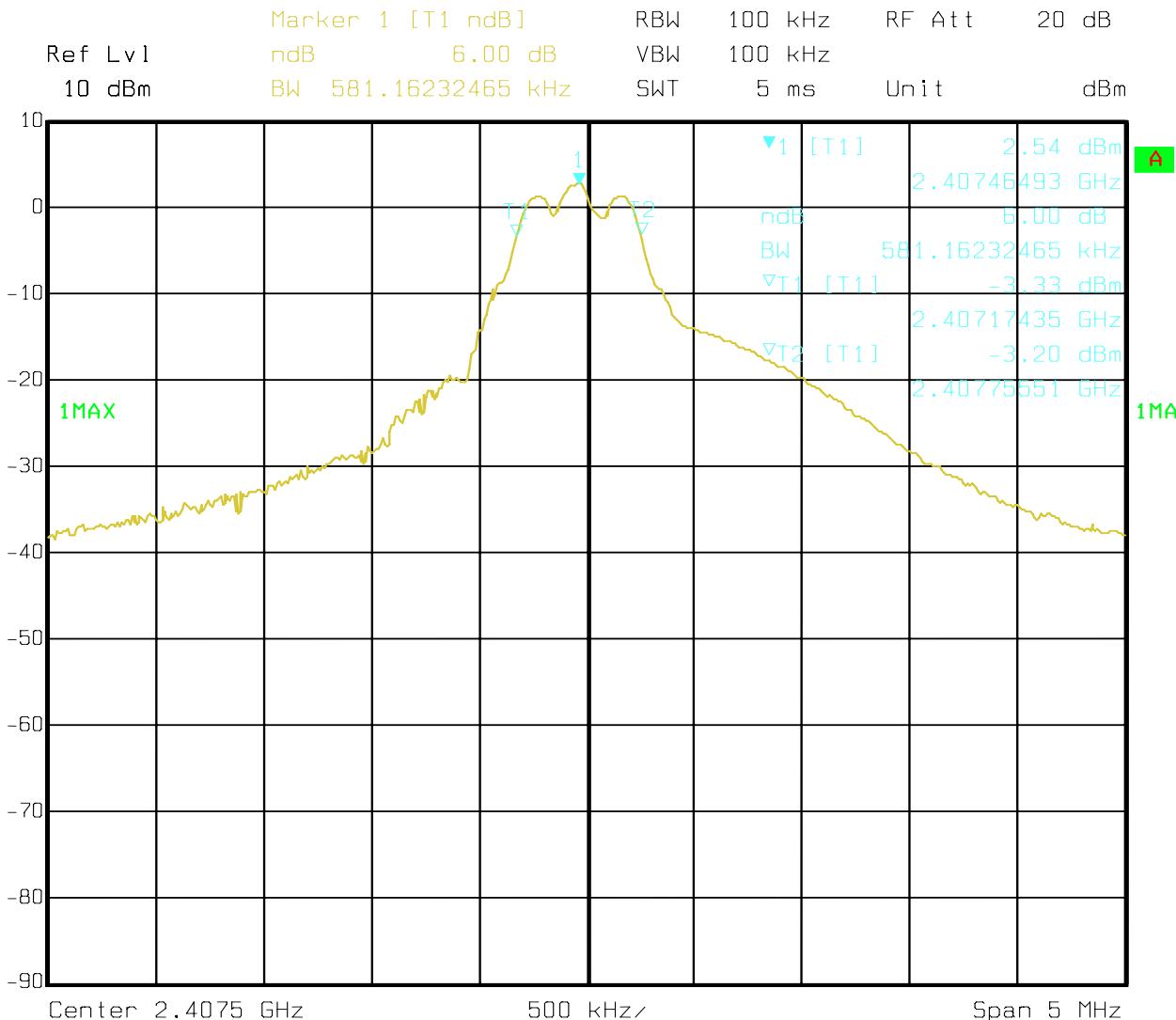
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**Test Plots:**

**1. CH Low**



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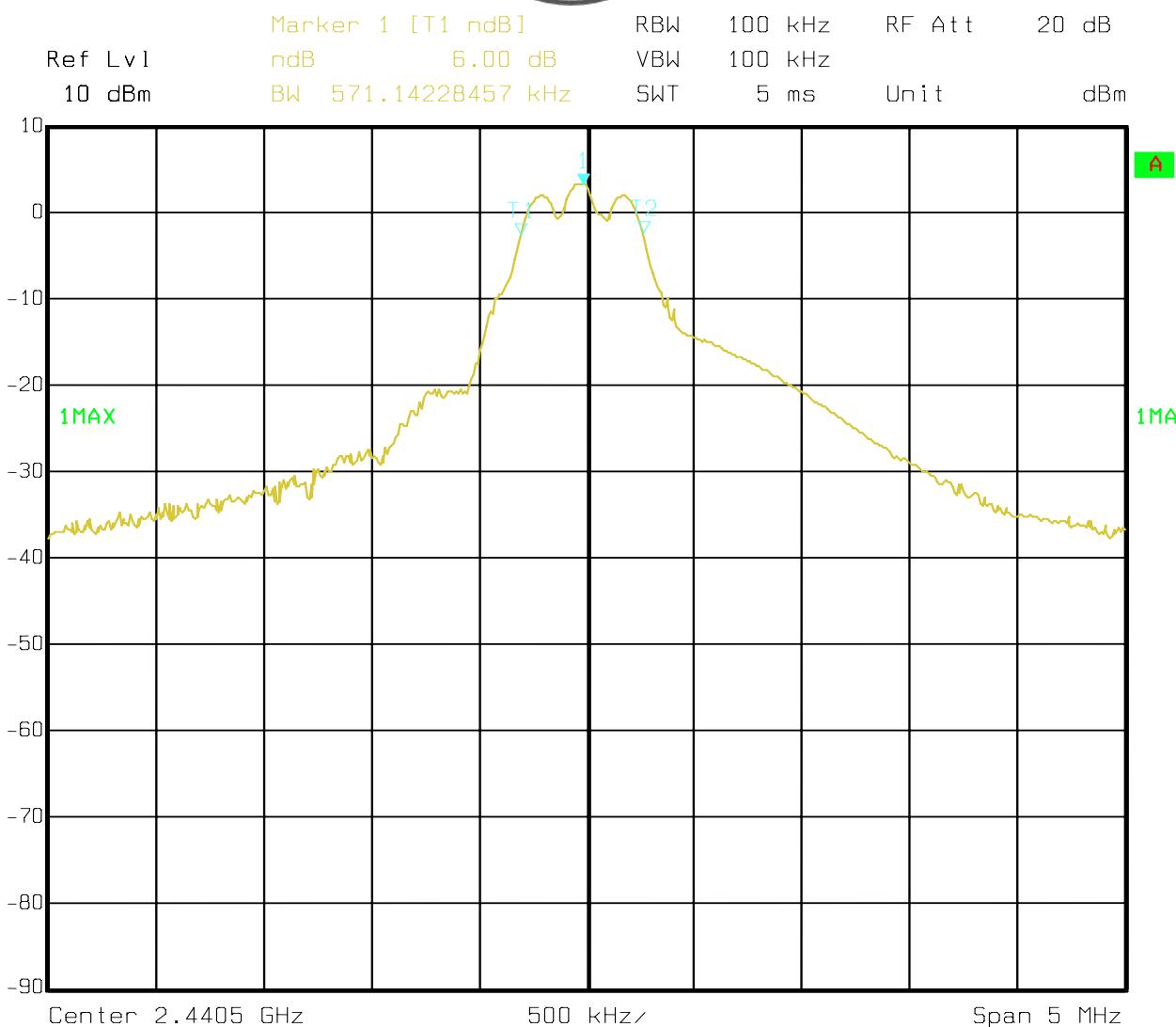
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## 2. CH Mid



Date: 21.JAN.2010 20:08:12

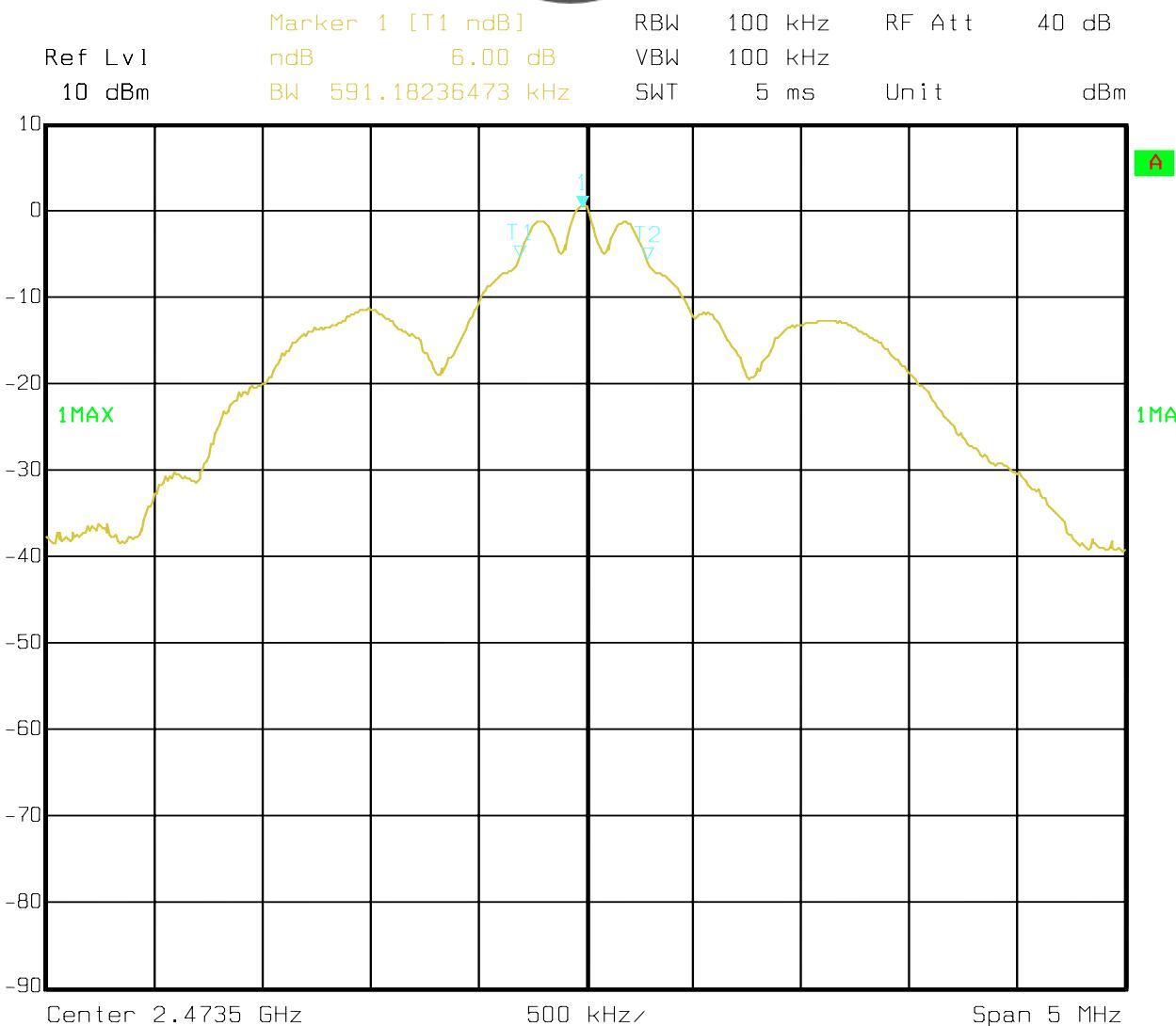
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### 3. CH High



Date: 21.JAN.2010 19:21:51

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## 8. Maximum Peak Output Power

### 8.1 Test Setup



### 8.2 Limits of Maximum Peak Output Power

The Maximum Peak Output Power Measurement is 30dBm.

### 8.3 Test Procedure

The RF power output was measured with a Power meter connected to the RF Antenna connector ( conducted measurement ) while EUT was operating in transmit mode at the appropriate centre frequency.

### 8.4 Test Results

| EUT         |                         | Model Control (Radio Set) | Model                  | ST6DF      |
|-------------|-------------------------|---------------------------|------------------------|------------|
| Mode        |                         | Keep Transmitting         | Input Voltage          | DC 12V     |
| Temperature |                         | 24 deg. C,                | Humidity               | 56% RH     |
| Channel     | Channel Frequency (MHz) | Peak Power Output (dBm)   | Peak Power Limit (dBm) | Pass/ Fail |
| Low         | 2407.5                  | 3.61                      | 30                     | Pass       |
| Mid         | 2440.5                  | 4.41                      | 30                     | Pass       |
| High        | 2473.5                  | 1.44                      | 30                     | Pass       |

Note: 1. At final test to get the worst-case emission for CH Low, CH Mid and CH High

2. The result basic equation calculation as follow:

$$\text{Peak Power Output} = \text{Peak Power Reading} + \text{Cable loss} + \text{Attenuator}$$

The report refers only to the sample tested and does not apply to the bulk.

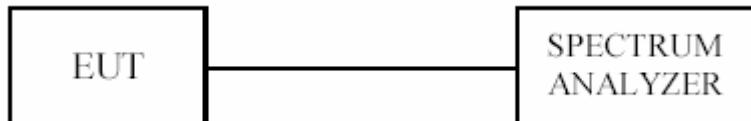
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## 9. Power Spectral Density Measurement

### 9.1 Test Setup



### 9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm.

### 9.3 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 10kHz VBW, set sweep time=500s

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.

### 9.4 Test Result

| EUT         |                         | Model Control (Radio Set)             | Model               | ST6DF      |
|-------------|-------------------------|---------------------------------------|---------------------|------------|
| Mode        |                         | Keep Transmitting                     | Input Voltage       | DC 12V     |
| Temperature |                         | 24 deg. C,                            | Humidity            | 56% RH     |
| Channel     | Channel Frequency (MHz) | Final RF Power Level in 3kHz BW (dBm) | Maximum Limit (dBm) | Pass/ Fail |
| Low         | 2407.5                  | -4.19                                 | 8                   | Pass       |
| Mid         | 2440.5                  | -3.65                                 | 8                   | Pass       |
| High        | 2473.5                  | -9.70                                 | 8                   | Pass       |

Note: At final test to get the worst-case emission for CH Low, CH Mid and CH High

The report refers only to the sample tested and does not apply to the bulk.

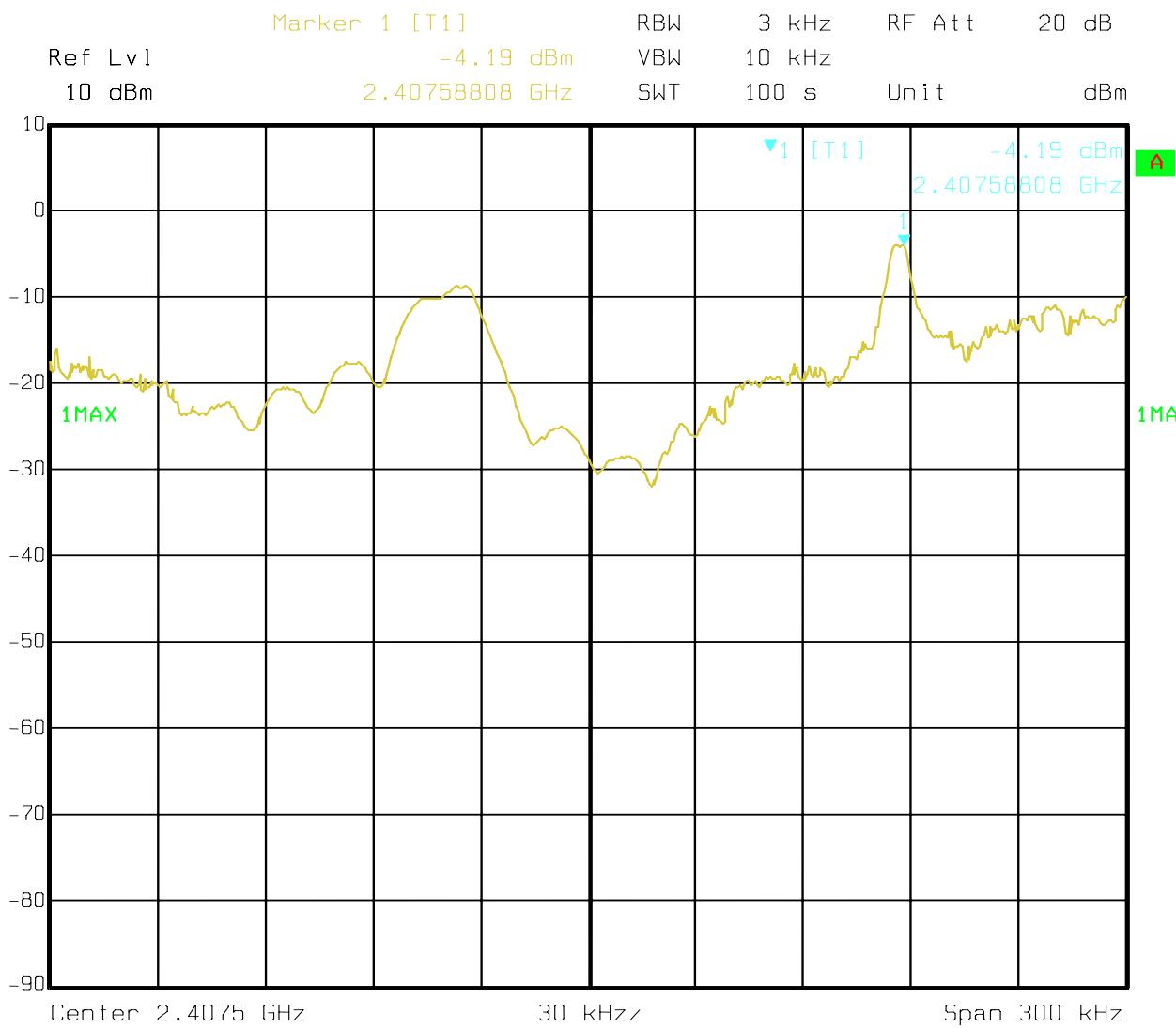
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### 9.5 Photo of Power Spectral Density Measurement

#### 1.CH Low



Date: 21.JAN.2010 19:46:19

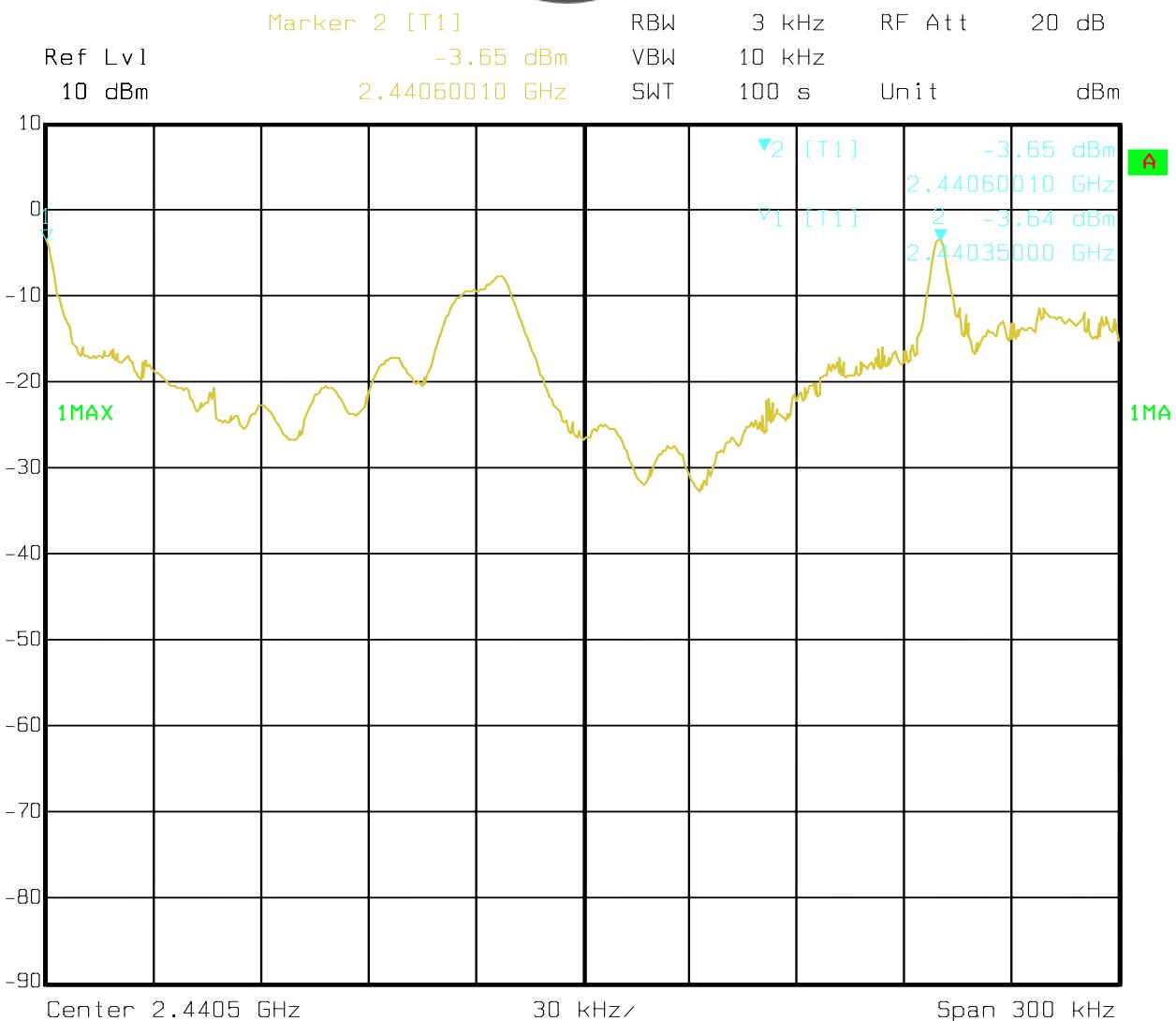
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## 2. CH Mid



Date: 21.JAN.2010 20:06:20

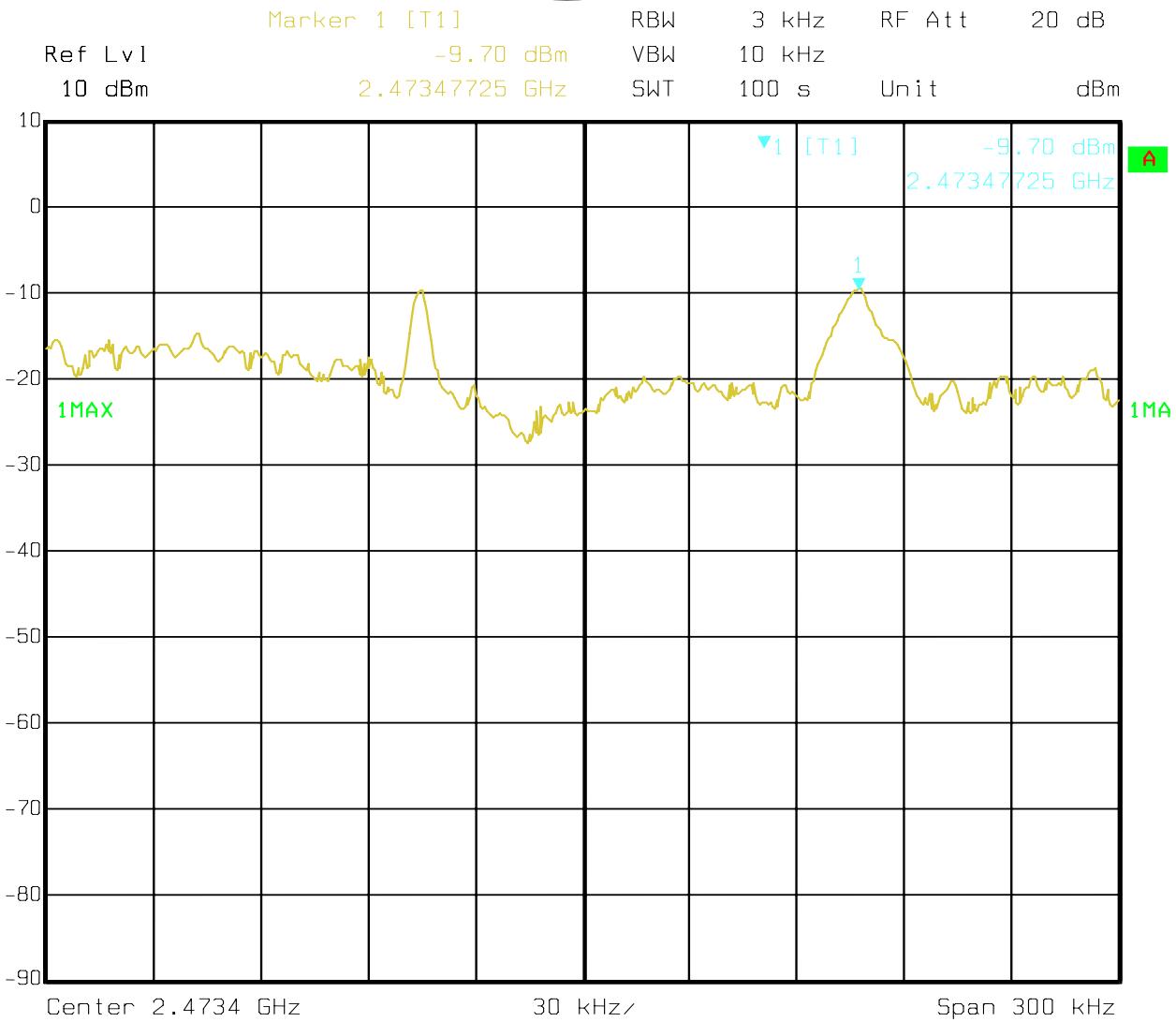
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### 3. CH High



Date: 21.JAN.2010 19:37:29

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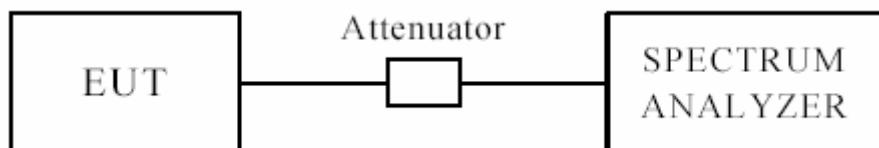
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## 10 Out of Band Measurement and Band Edge Measurement

### 10.1 Test Setup for band edge



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

### 10.2 Limits of Out of Band Emissions Measurement

1. Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

### 10.3 Test Procedure

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test. RBW=VBW=1MHz

For bandage test, the spectrum set as follows: RBW=VBW=100 kHz. A conducted measurement used

### 10.4 Test Result

Please see next pages

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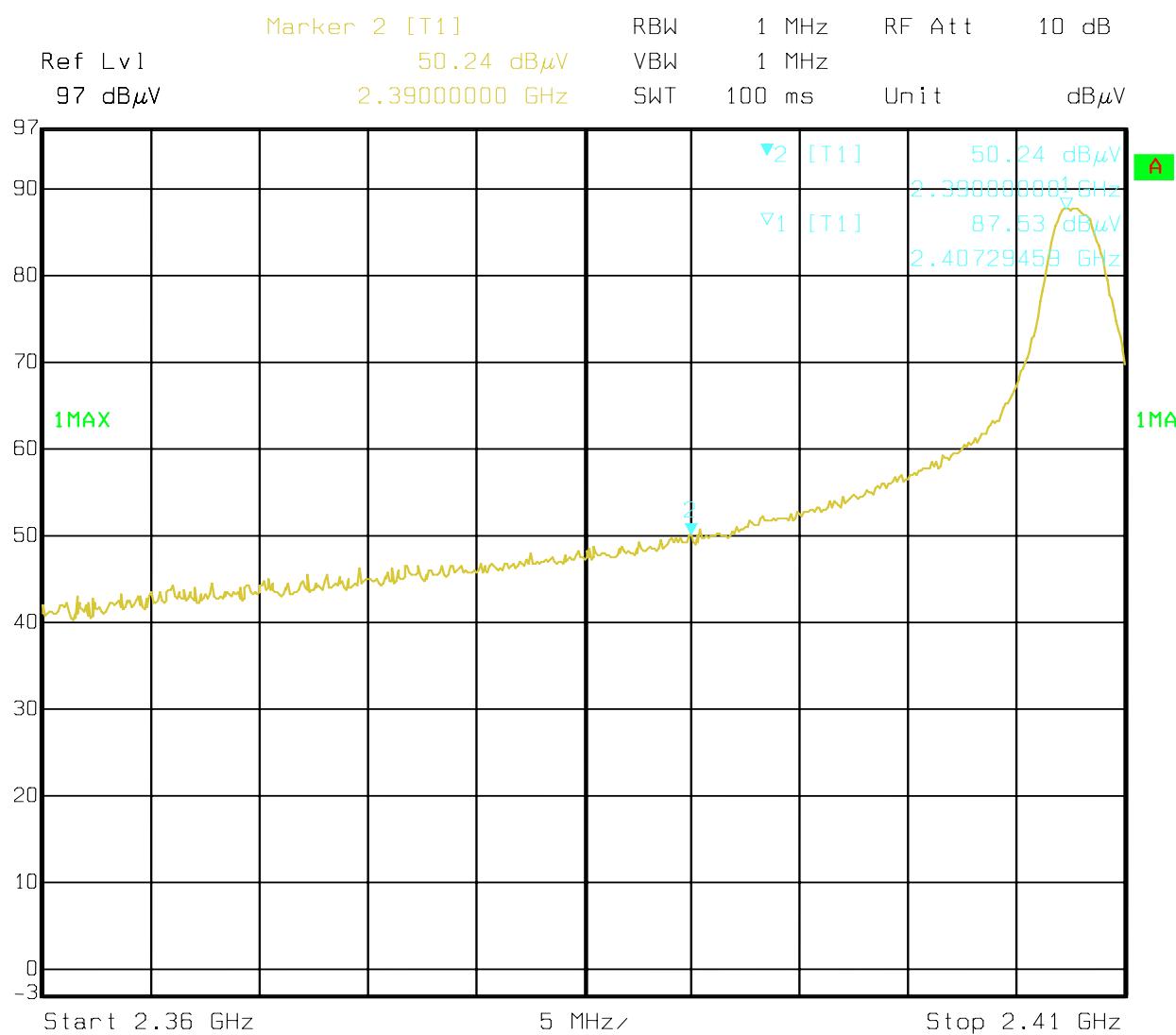
#### 10.4 Test Result for restricted bands

CH Low

#### 10.4 Out of Band Test Result

|                                 |                           |           |               |                  |
|---------------------------------|---------------------------|-----------|---------------|------------------|
| Product:                        | Model Control (Radio Set) |           | Test Mode:    | CH Low           |
| Mode                            | Keep Transmitting         |           | Input Voltage | DC 12V           |
| Temperature                     | 24 deg. C,                |           | Humidity      | 56% RH           |
| Test Result:                    | Pass                      |           | Detector      | PK               |
| The Max. FS in<br>Restrict Band | PK (dB $\mu$ V/m)         | 43.76(PK) | Limit         | 74(dB $\mu$ V/m) |
|                                 | AV(dB $\mu$ V/m)          | Vertical  |               | 54(dB $\mu$ V/m) |

#### Test Figure:



Date: 23.JAN.2010 15:12:22

**Note: The Max. FS in Restrict Band are measured in conventional method.**

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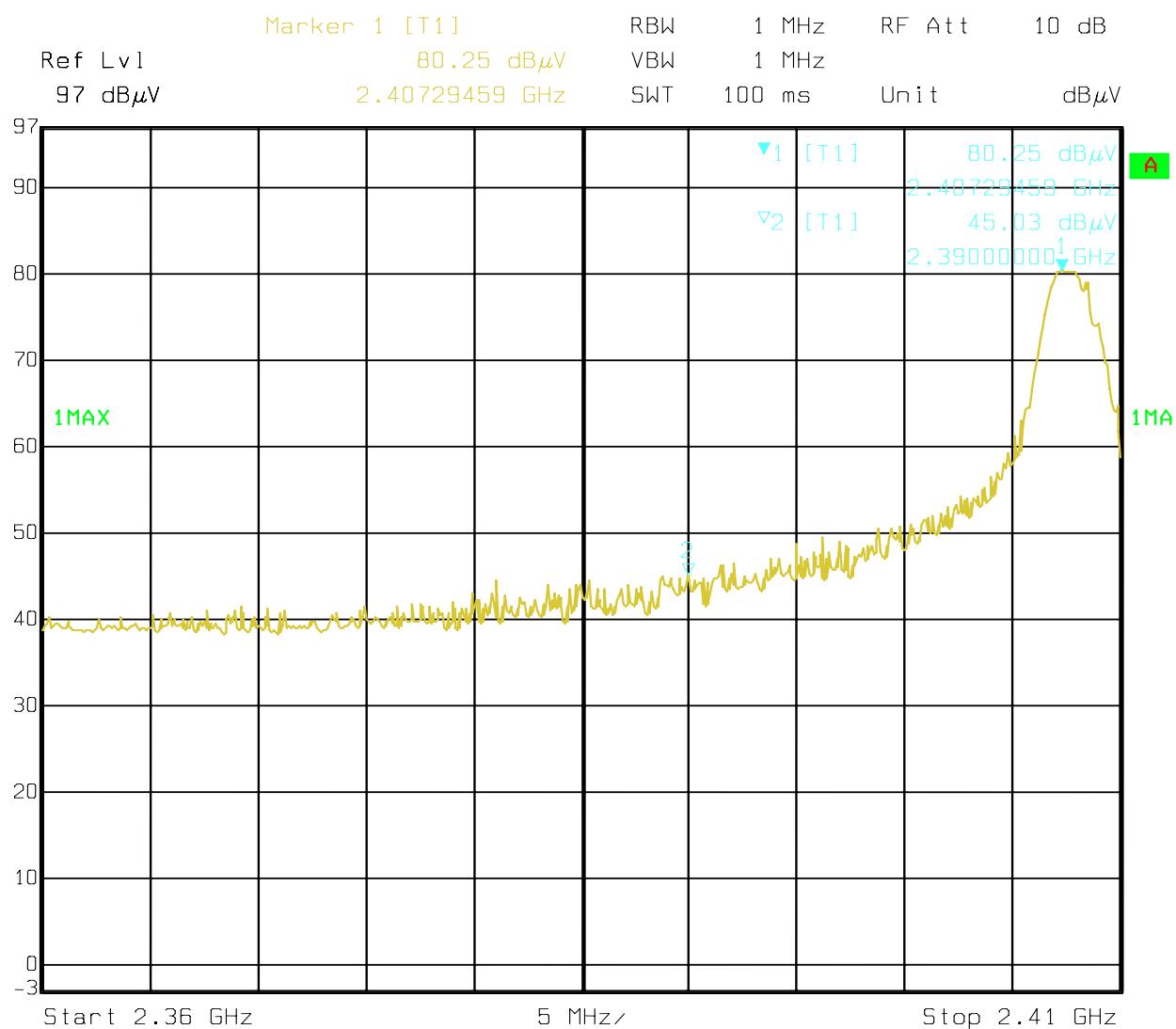


CH Low

#### 10.4 Out of Band Test Result

|                                 |                           |            |               |                  |
|---------------------------------|---------------------------|------------|---------------|------------------|
| Product:                        | Model Control (Radio Set) |            | Test Mode:    | CH Low           |
| Mode                            | Keep Transmitting         |            | Input Voltage | DC 12V           |
| Temperature                     | 24 deg. C,                |            | Humidity      | 56% RH           |
| Test Result:                    | Pass                      |            | Detector      | PK               |
| The Max. FS in<br>Restrict Band | PK (dB $\mu$ V/m)         | 38.55(PK)  | Limit         | 74(dB $\mu$ V/m) |
|                                 | AV(dB $\mu$ V/m)          | Horizontal |               | 54(dB $\mu$ V/m) |

#### Test Figure:



Date: 23.JAN.2010 15:18:04

**Note: The Max. FS in Restrict Band are measured in conventional method.**

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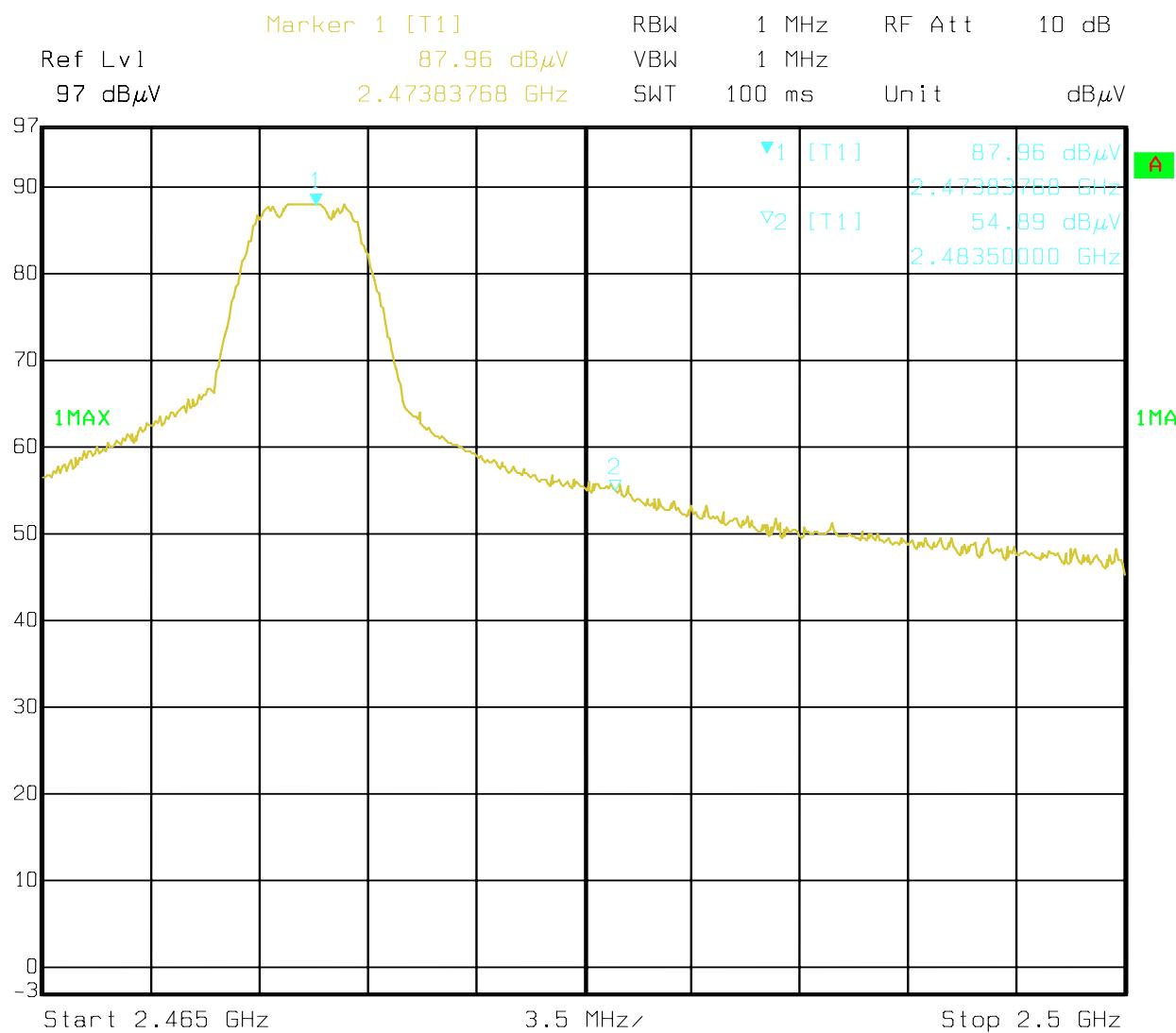


CH High

## 10.4 Out of Band Test Result

|                                 |                           |               |                  |
|---------------------------------|---------------------------|---------------|------------------|
| Product:                        | Model Control (Radio Set) | Test Mode:    | CH High          |
| Mode                            | Keep Transmitting         | Input Voltage | DC 12V           |
| Temperature                     | 24 deg. C,                | Humidity      | 56% RH           |
| Test Result:                    | Pass                      | Detector      | PK               |
| The Max. FS in<br>Restrict Band | PK (dB $\mu$ V/m)         | 48.41(PK)     | 74(dB $\mu$ V/m) |
|                                 | AV(dB $\mu$ V/m)          | Vertical      | 54(dB $\mu$ V/m) |

## Test Figure:



Date: 23.JAN.2010 15:25:26

**Note: The Max. FS in Restrict Band are measured in conventional method.**

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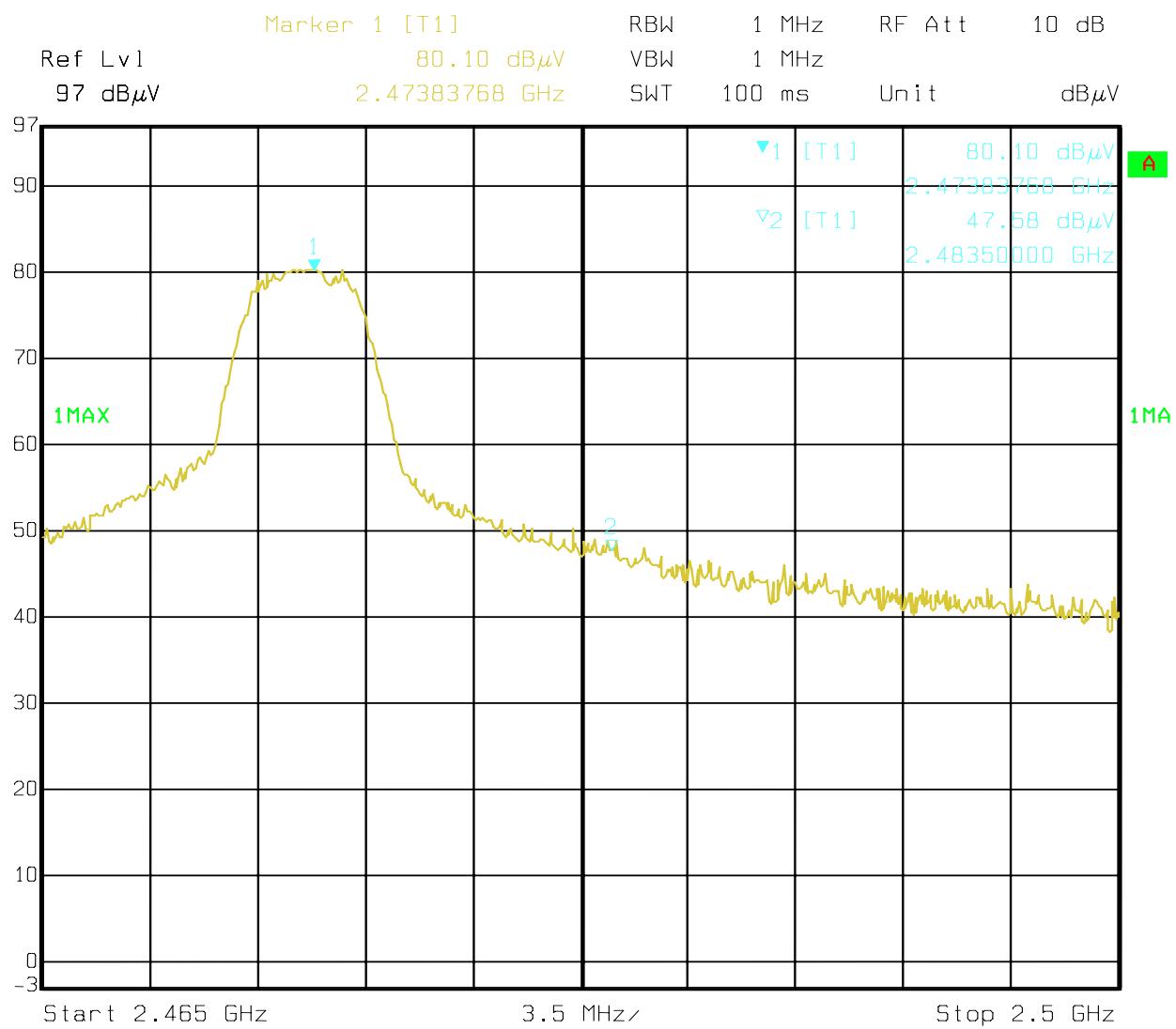


CH High

#### 10.4 Out of Band Test Result

|                                 |                           |            |               |                  |
|---------------------------------|---------------------------|------------|---------------|------------------|
| Product:                        | Model Control (Radio Set) |            | Test Mode:    | CH High          |
| Mode                            | Keep Transmitting         |            | Input Voltage | DC 12V           |
| Temperature                     | 24 deg. C,                |            | Humidity      | 56% RH           |
| Test Result:                    | Pass                      |            | Detector      | PK               |
| The Max. FS in<br>Restrict Band | PK (dB $\mu$ V/m)         | 41.10(PK)  | Limit         | 74(dB $\mu$ V/m) |
|                                 | AV(dB $\mu$ V/m)          | Horizontal |               | 54(dB $\mu$ V/m) |

#### Test Figure:



Date: 23.JAN.2010 15:24:07

**Note: The Max. FS in Restrict Band are measured in conventional method.**

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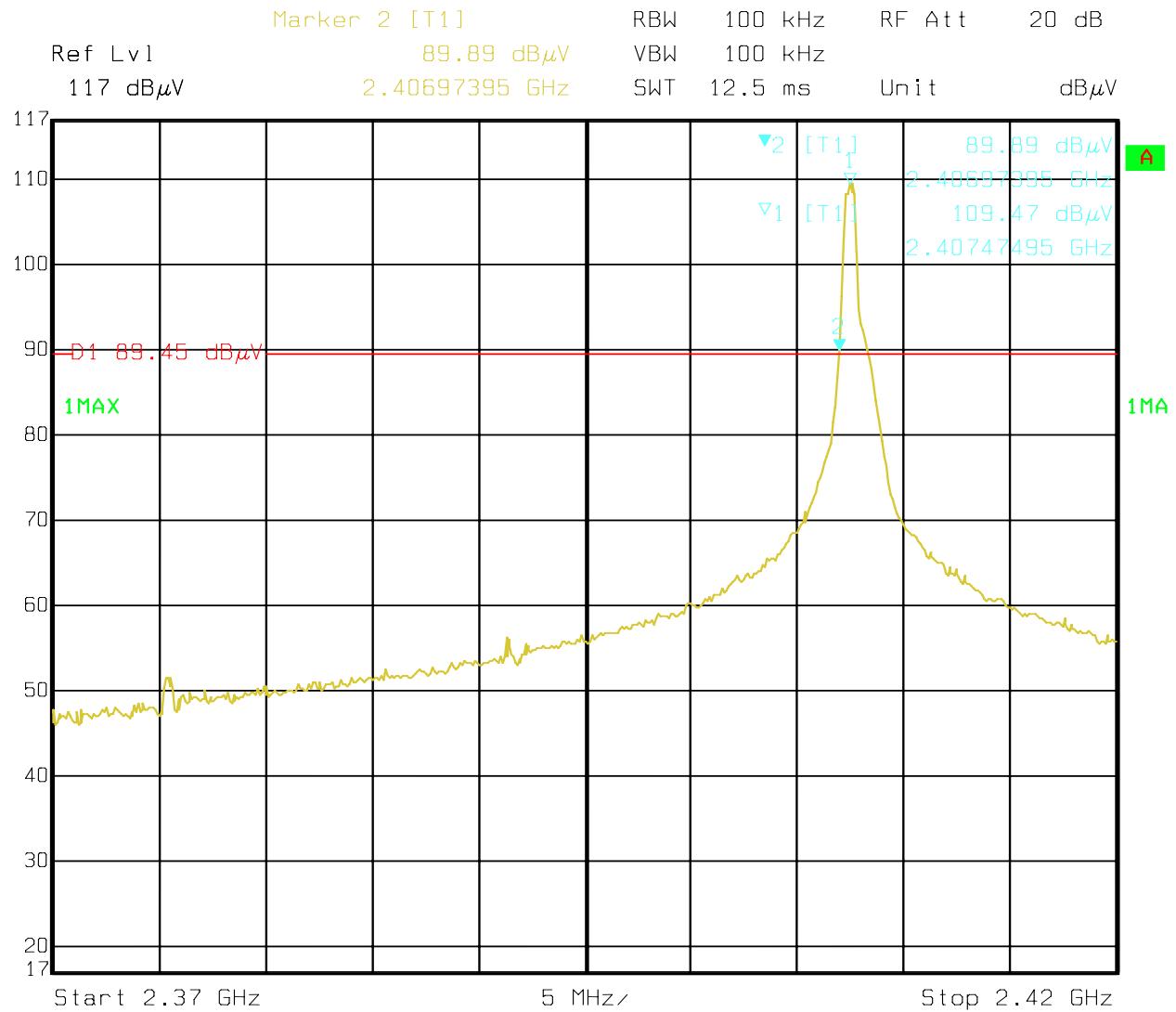
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### 10.5 Band edge test result

|              |                           |               |        |
|--------------|---------------------------|---------------|--------|
| Product:     | Model Control (Radio Set) | Test Mode:    | CH Low |
| Mode         | Keep Transmitting         | Input Voltage | DC 12V |
| Temperature  | 24 deg. C,                | Humidity      | 56% RH |
| Test Result: | Pass                      | Detector      | PK     |

#### Test Figure:



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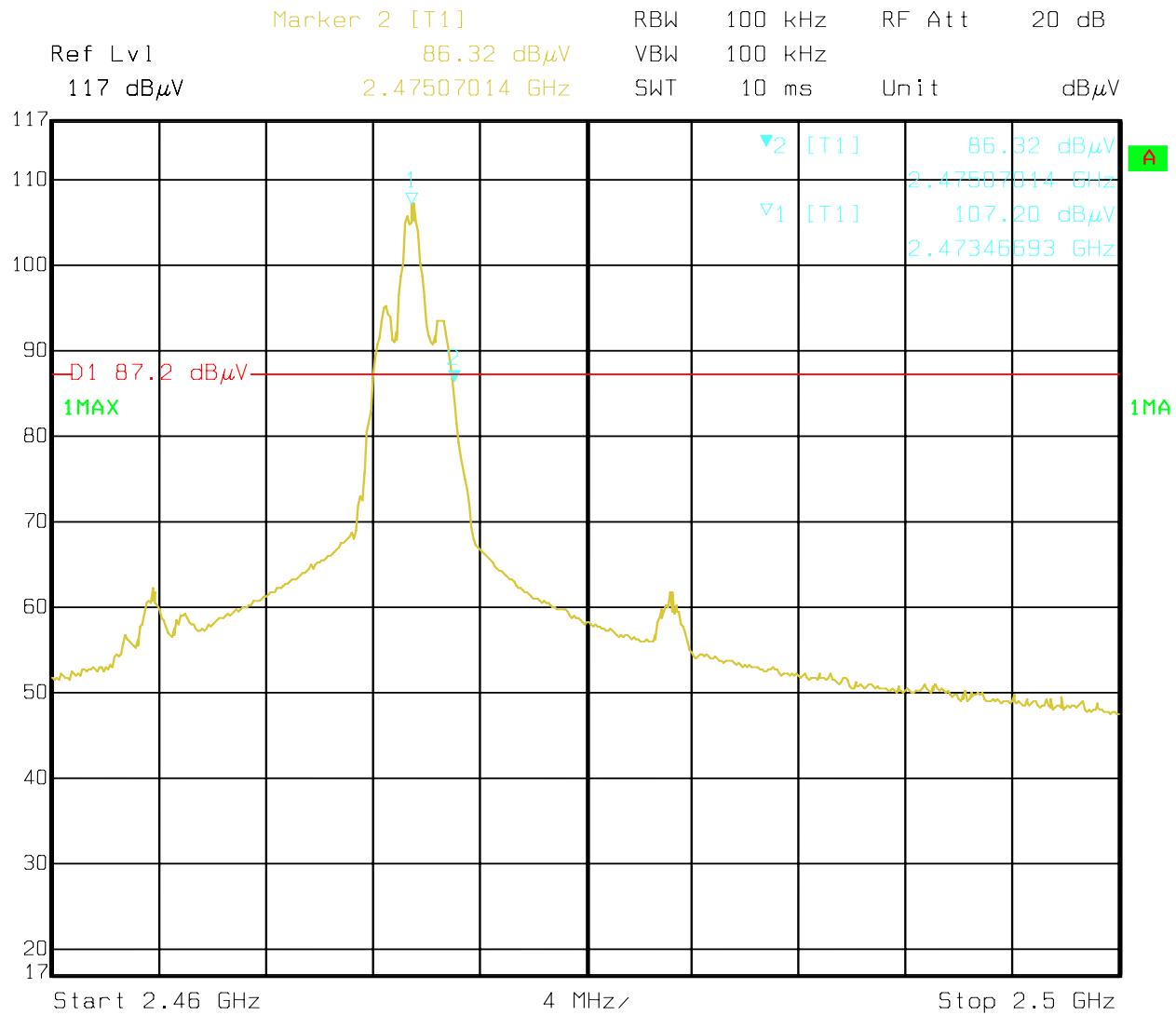
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### 10.5 Band edge test result

|              |                           |               |         |
|--------------|---------------------------|---------------|---------|
| Product:     | Model Control (Radio Set) | Test Mode:    | CH High |
| Mode         | Keep Transmitting         | Input Voltage | DC 12V  |
| Temperature  | 24 deg. C,                | Humidity      | 56% RH  |
| Test Result: | Pass                      | Detector      | PK      |

#### Test Figure:



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## 11.0 Antenna Requirement

### 11.1 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 transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

### 11.2 Antenna Connected construction

The antenna is Dipole antenna. The maximum Gain of this antenna is 2.0dBi

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## 12.0 Maximum Permissible Exposure

### Applicable Standard

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

#### (a) Limits for Occupational / Controlled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm <sup>2</sup> ) | Averaging Times   E   <sup>2</sup> ,   H   <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|---|--|
| 0.3-3.0               | 614                               | 1.63                              | (100)*                                  | 6  |
| 3.0-30                | 1842/f                            | 4.89/f                            | (900/f)*                                | 6  |
| 30-300                | 61.4                              | 0.163                             | 1.0                                     | 6  |
| 300-1500              |                                   |                                   | F/300                                   | 6  |
| 1500-100000           |                                   |                                   | 5                                       | 6  |

#### (b) Limits for General Population / Uncontrolled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm <sup>2</sup> ) | Averaging Times   E   <sup>2</sup> ,   H   <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|---|--|
| 0.3-1.34              | 614                               | 1.63                              | (100)*                                  | 30   |
| 1.34-30               | 824/f                             | 2.19/f                            | (180/f)*                                | 30   |
| 30-300                | 27.5                              | 0.073                             | 0.2                                     | 30   |
| 300-1500              |                                   |                                   | F/1500                                  | 30   |
| 1500-100000           |                                   |                                   | 1.0                                     | 30   |

Note: f=frequency in MHz; \*Plane-wave equivalent power density

### MPE Calculation Method

$$E \text{ (V/m)} = (30*P*G)^{0.5}/d \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = E^2/377$$

**E** = Electric Field (V/m)

**P** = Peak RF output Power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = (30*P*G) / (377*d^2)$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

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### Calculated Result and Limit

| Antenna Gain (Numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm <sup>2</sup> ) | Limit of Power Density (S) (mW/cm <sup>2</sup> ) | Test Result |
|------------------------|-------------------------|------------------------|---|--|-------------|
| 1.585                  | 4.41                    | 2.7606                 | 0.00087                                 | 1  | Compiles    |

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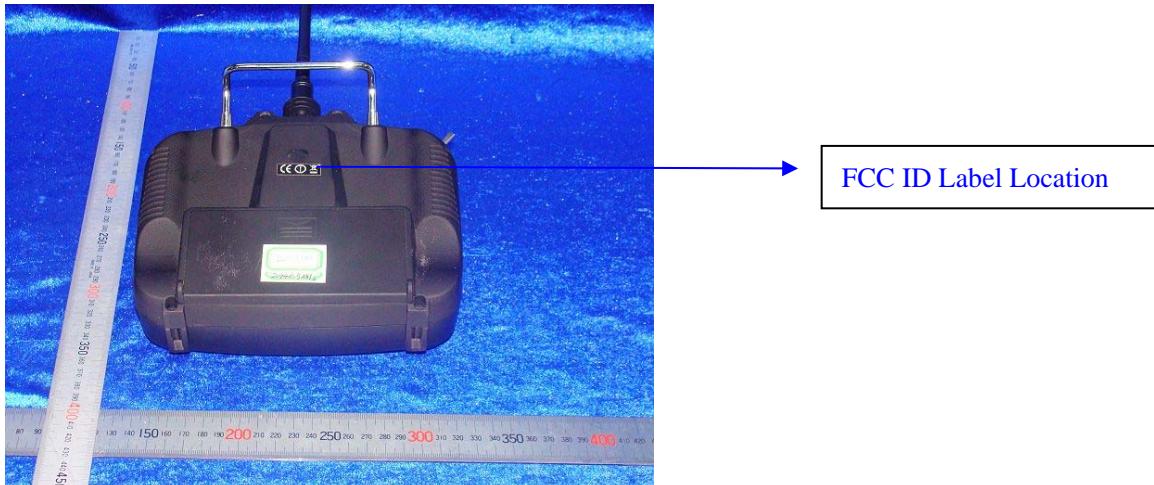
### 13.0 FCC ID Label

**FCC ID: UZ6-ST10018A**

**This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.**

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

**Mark Location:**



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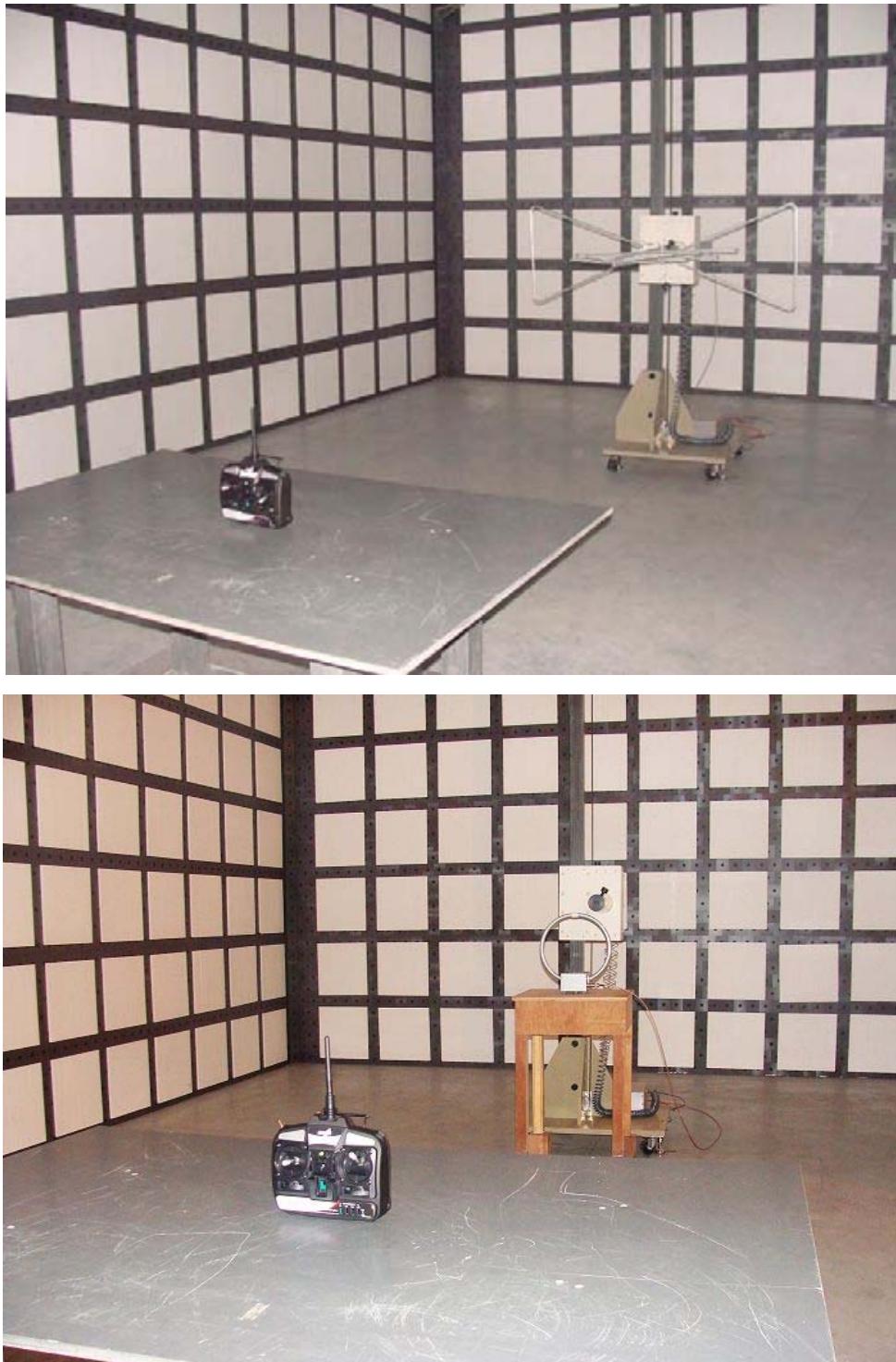
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#### 14.0 Photo of testing

##### 14.1 Emission Radiated test View--



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14.2 Photo for the EUT

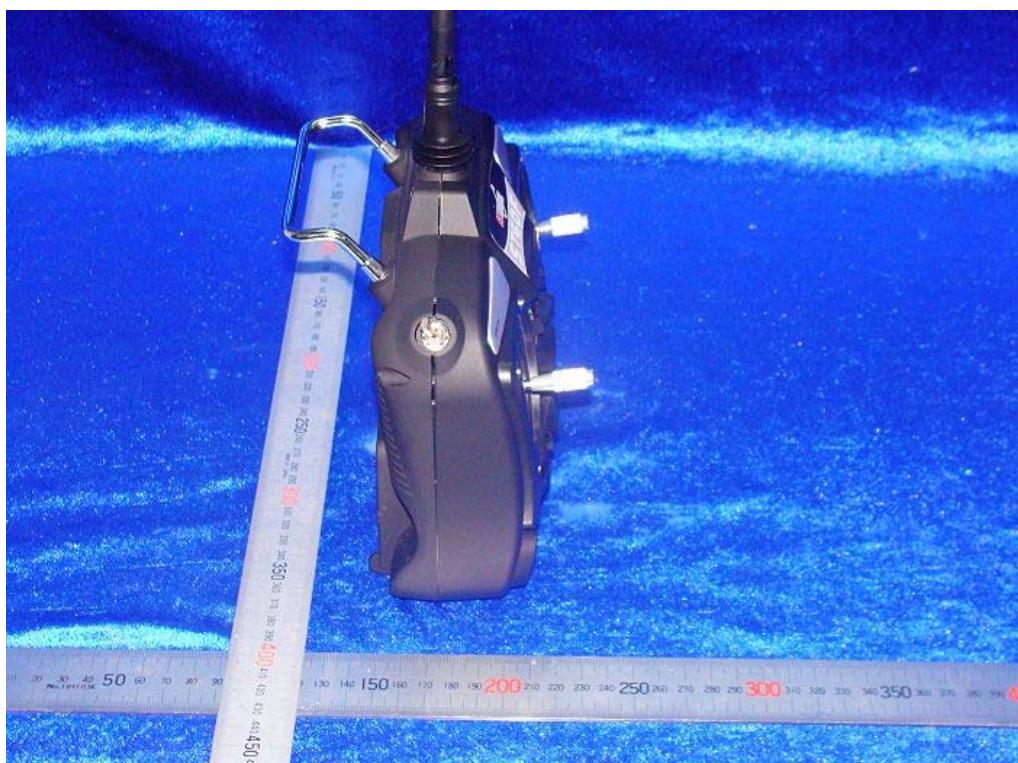
Outside View



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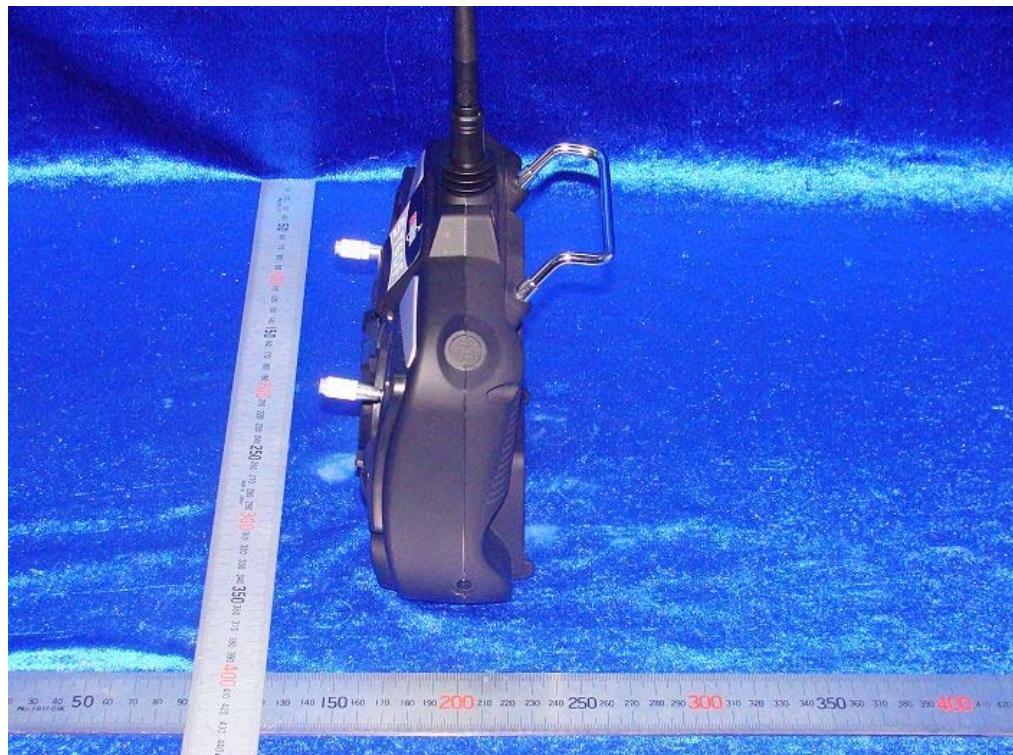
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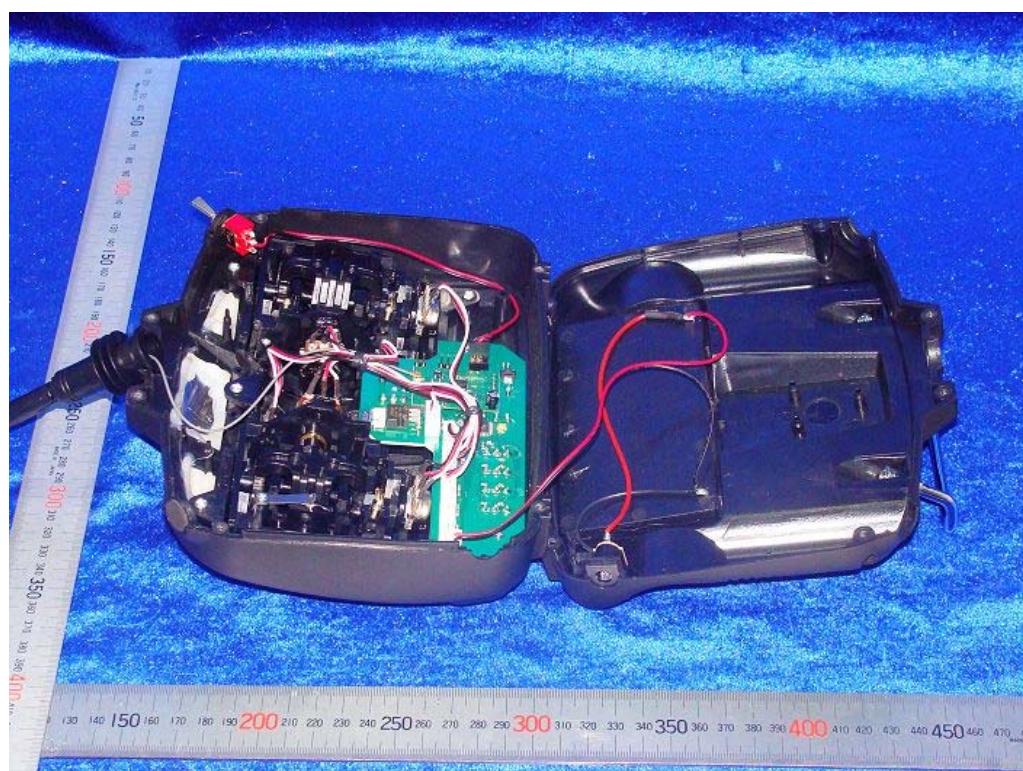
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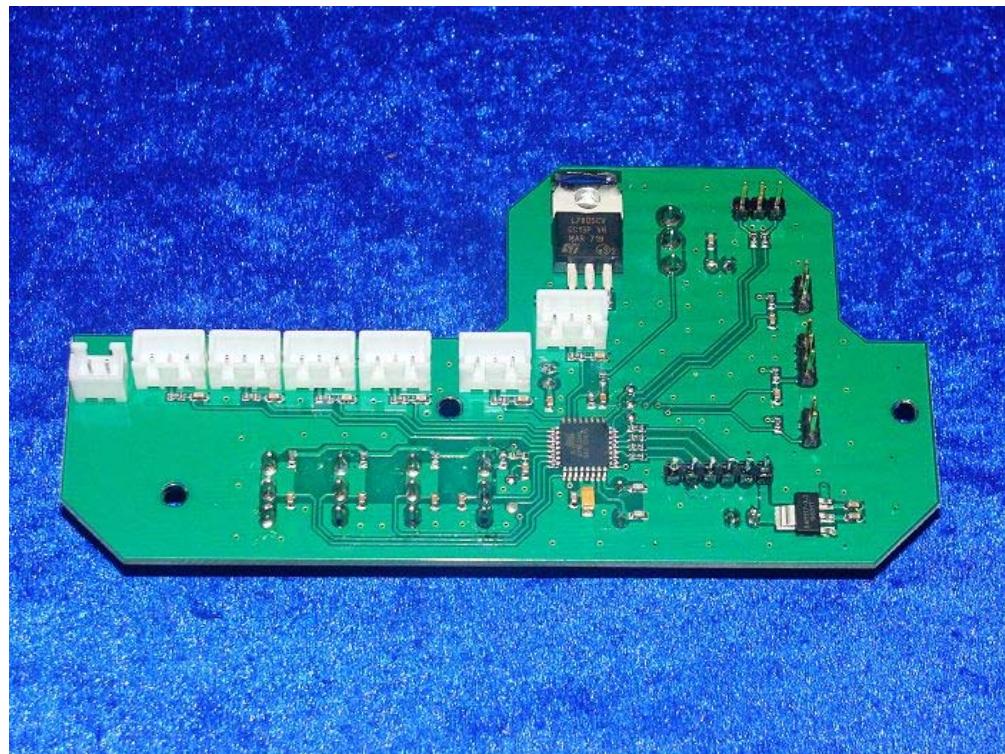
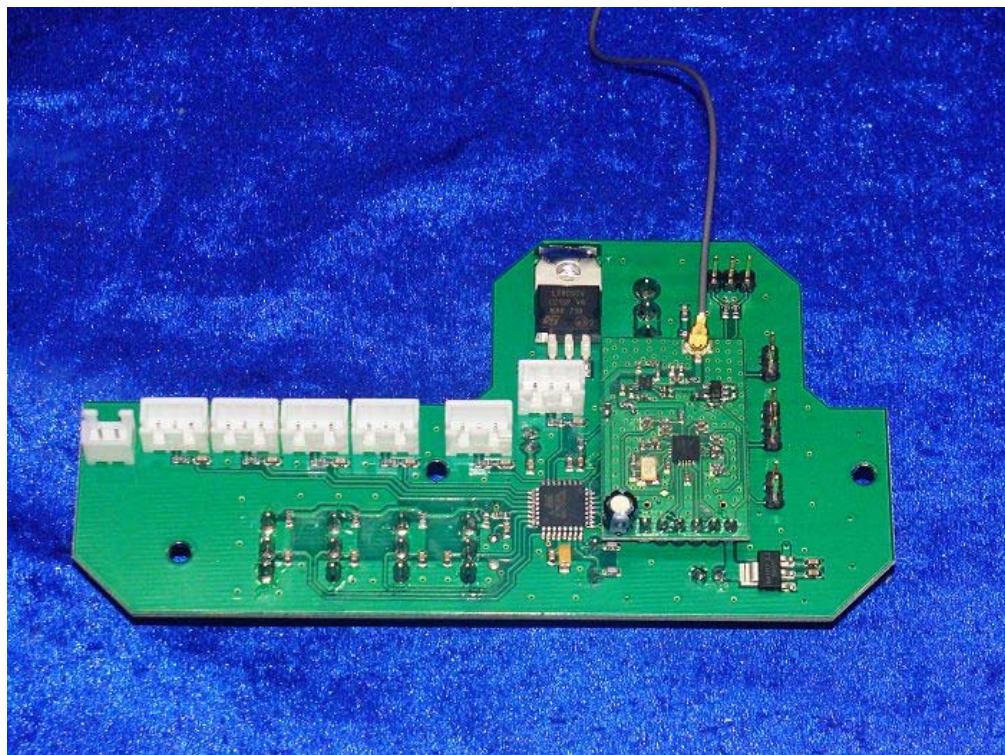
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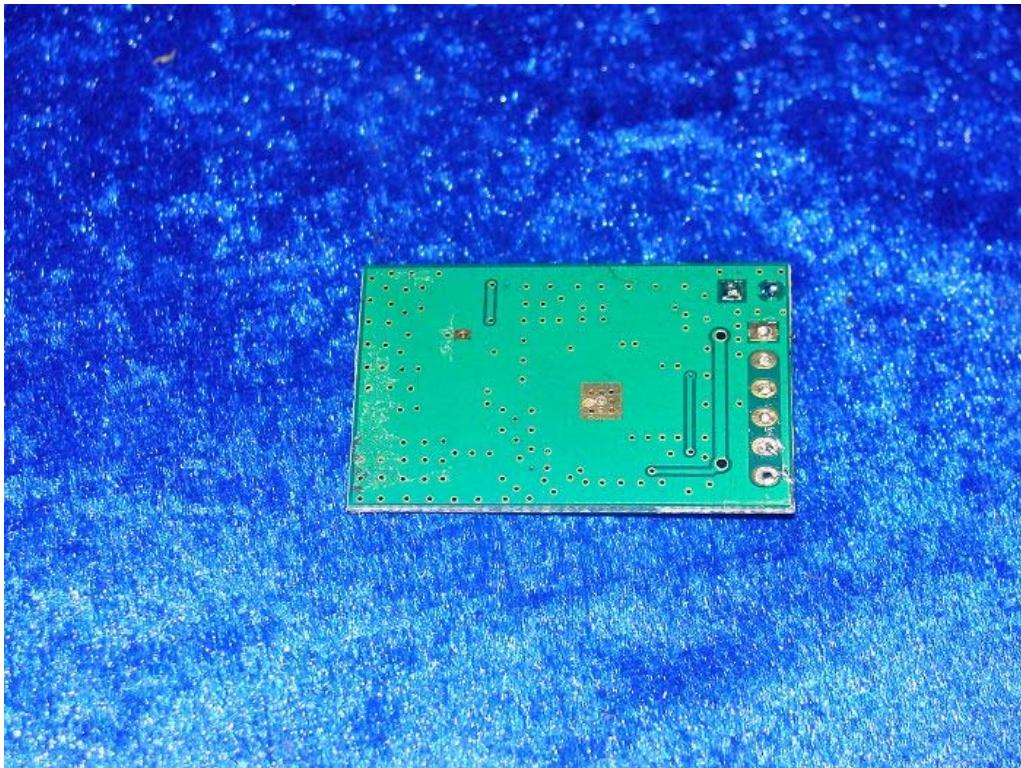
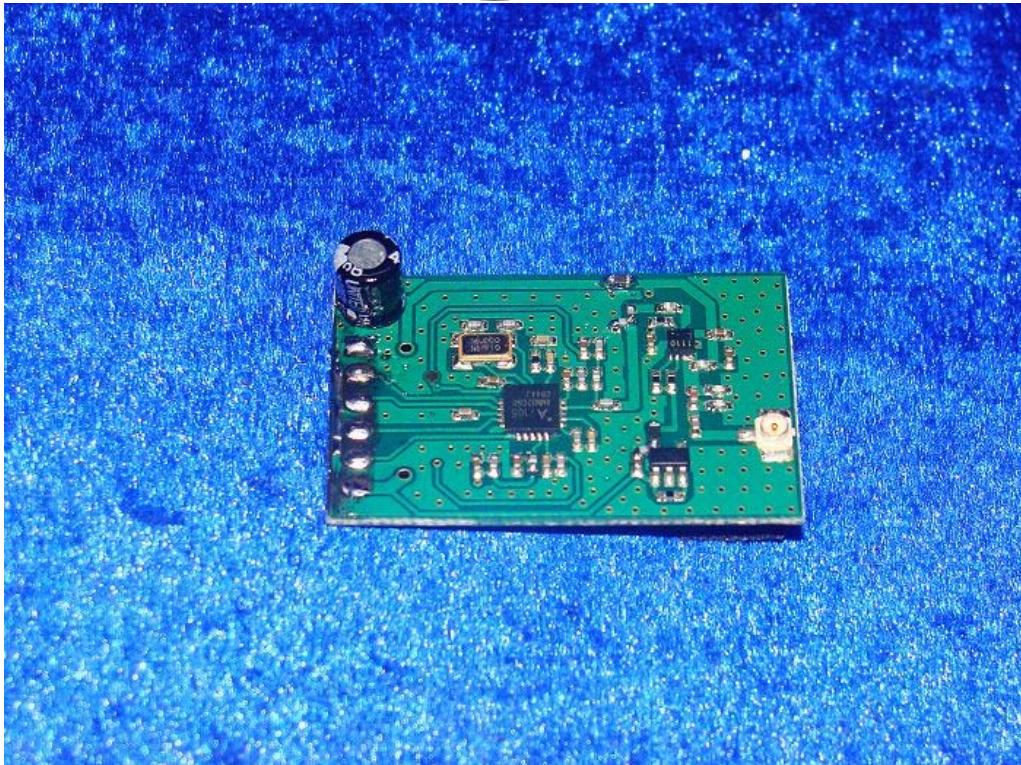
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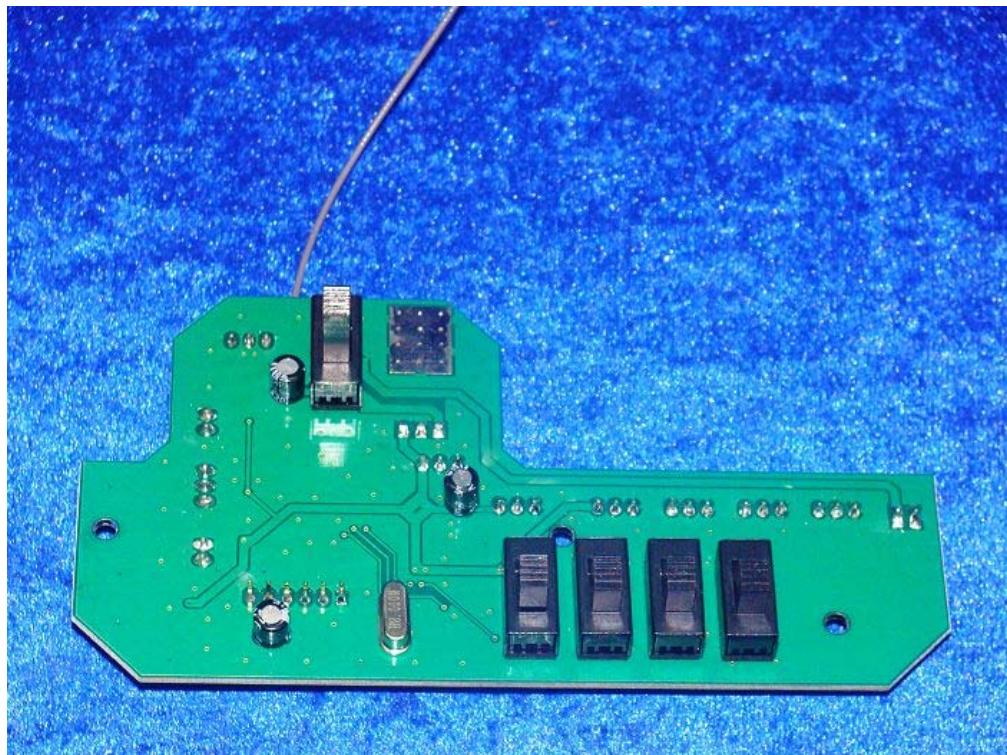
Interior View



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