

# TEST REPORT

## FCC RULES Part 15 Subpart C

Report File No. : STROR-05-047

Date of Issue : Nov. 17, 2005

Kind of Product : FM Transmitter

Model Name : ET-E10

FCC ID : TPKFMTETE10

Manufacturer : URITECH CO., LTD.

Serial No. : \_\_\_\_\_

Test Result : Complied

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## VERIFICATION OF COMPLIANCE

**Applicant :** URITECH Co., Ltd.

**Kind of Product :** FM Transmitter

**Brand Name :** -

**Model Name :** ET-E10

**Model Difference :** -

**Report File No. :** STROR-05-047

**Date of test :** Nov. 01, 2005 ~ Nov. 17, 2005

**Receiver EUT :** -

### APPLICABLE STANDARDS

| STANDARD                           | TEST RESULT |
|------------------------------------|-------------|
| Part 15 Subpart C §15.209& §15.239 | Complied    |

The above equipment was tested by SGS Testing Korea Co., Ltd. for compliance with the requirements set forth in the FCC RULES Part 15 Subpart §15.209& §15.239. The results of testing in this report apply to the product system that was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

**Tested By:**



**Date**

**Nov. 17, 2005**

*Feel Jeong*

**Approved By**



**Date**

**Nov. 17, 2005**

*Albert Lim*

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## INDEX

### CONTENTS

|                                              |    |
|----------------------------------------------|----|
| 1. General Description of EUT -----          | 4  |
| 2. General Information of EUT -----          | 4  |
| 3. Test Procedure -----                      | 5  |
| 4. Test Condition -----                      | 6  |
| <br>Test Results                             |    |
| 5. Field Strength -----                      | 7  |
| 6. Spurious Emission -----                   | 8  |
| 7. Emission Bandwidth -----                  | 10 |
| 8. Summary of Results -----                  | 12 |
| 9. Attachment A ? Photo of Test Set up ----- | 13 |
| 10. Attachment B ? Photos of the EUT -----   | 14 |

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## 1. 1. GENERAL DESCRIPTION OF EUT

The URITECH Co., Ltd.'s Model ET-E10 is a FM transmitter. This device let you listen to any portable music device over any FM tuner and speaker setup, without clumsy or constricting cable hookup. It is the perfect way to simply and efficiently listen to MP3s, CDs, mini-discs, and other formats in the comfort of your car.

## 2. GENERAL INFORMATION OF EUT

### Transmitter

|                       |                    |
|-----------------------|--------------------|
| Power Supply          | *DC 12V or *DC 24V |
| Operating Frequency   | 88.3~88.9 MHz      |
| Modulation Type       | FM                 |
| Operating Temperature | -10? ~+50?         |
| Frequency Generation  | PLL                |
| Communication method  | One-way            |
| Channel Number        | 3 CH               |
| Antenna Type          | Wire Ant           |

**\*DC 12V or DC 24 V is powered from an automobile system.**

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### 3. Test Procedure

The test procedures are performed following the test stands ANSI C.63.4-2003, if applicable.

#### 3.1 Conducted Emission

Testing was performed according ANSI C.63.4-2003 in a shielded room with peripherals placed on a table, 0.8m high over a metal floor.

It was located more than required distance away from the shield room wall.

#### 3.2 Radiated Emission

Testing was performed according ANSI C.63.4-2003 at open field test site. The EUT was placed in a 0.8m high table along with the peripherals.

The turn table was separated from the antenna distance 3 meters. Cables were placed in a position to produce maximum emissions as determined by experimentation and operation mode was selected for maximum. The frequencies and amplitudes of maximum emission were measured at vary azimuths, antenna heights and antenna polarities. Reported are maximized emission levels.

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## 4. Test Condition

### 4.1 Test Configuration

The device was configured for testing in a typical fashion (as a customer would normally use it). During the tests, the EUT and the supported equipments were installed to meet FCC requirement and operated in a manner, which tends to maximize its emission level in a typical application.

#### Conducted Emission Test

It's not applicable, because the EUT is supplied from a DC battery.

#### Radiated Emission Test

Preliminary radiated emission tests were conducted using the procedure in ANSI C63.4-2003 clause 8.3.1.1. to determine the worst operating condition. Final radiated emission tests were measured at 3 meter open field test site. To complete the test configuration required by the FCC, the EUT was tested in all three orthogonal planes.

### 4.2 EUT Operation

EUT was tested according to the following operation modes provided by the specifications given by the manufacturer, and reported the worst emissions.

### 4.3 Peripherals / Support Equipment Used

Following peripheral devices and interface cables were connected during the measurement.

Type of Peripheral Equipment Used:

| Description     | Model Name | Serial NO | Manufacturer  |
|-----------------|------------|-----------|---------------|
| MP3 Player      | DAH-1400   | -         | Hyun Won Inc. |
| DC Power Supply | DAE GIL    | -         | DGD-300       |

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**5. Field Strength****FCC Part 15, Subpart C, Section 15.239**

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Humidity Level : 48%

Temperature: 25?

| Radiated Emissions |                  |             | Ant  | Correction Factors |            | Total           | FCC Limit         |             |
|--------------------|------------------|-------------|------|--------------------|------------|-----------------|-------------------|-------------|
| Frequency (MHz)    | Reading (dBuV/m) | Detect Mode | Pol. | Ant. (dB/m)        | Cable (dB) | Actual (dBuV/m) | AV Limit (dBuV/m) | Margin (dB) |
| 88.3               | 29.3             | Peak        | H    | 8.24               | 0.94       | 38.48           | 48                | 9.52        |
| 88.7               | 28.3             | Peak        | H    | 8.32               | 0.94       | 37.55           | 48                | 10.45       |
| 88.9               | 28.6             | Peak        | H    | 8.35               | 0.94       | 37.89           | 48                | 10.11       |

**Test Equipment Used**

| EQUIPMENT         | MANUFACTURER    | MODEL   | CAL DUE. |
|-------------------|-----------------|---------|----------|
| Spectrum Analyzer | H/P             | 8593E   | Sep.2006 |
| Test Receiver     | Rohde & Schwarz | ESVS 10 | Dec.2005 |
| Biconical Antenna | Schwarzbeck     | VHA9103 | Mar.2006 |
| DC Power Supply   | DAE GIL         | DGD-300 | Jan.2006 |
| Anechoic Chamber  | Seo Young EMC   | -       | -        |

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## 6. Spurious Emission      FCC Part 15, Subpart C, Section 15.209

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Humidity Level : 48%

Temperature: 25?

Low Frequency: 88.3 MHz

| Radiated Emissions |                  |             | Ant  | Correction Factors |            | Total           | FCC Limit         |             |
|--------------------|------------------|-------------|------|--------------------|------------|-----------------|-------------------|-------------|
| Frequency (MHz)    | Reading (dBuV/m) | Detect Mode | Pol. | Ant. (dB/m)        | Cable (dB) | Actual (dBuV/m) | AV Limit (dBuV/m) | Margin (dB) |
| 176.01             | 5.0              | Q.P.        | H    | 15.62              | 1.35       | 21.98           | 43.52             | 21.54       |
| 264.90             | 3.0              | Q.P.        | H    | 16.58              | 1.71       | 21.29           | 46.00             | 24.71       |
| 353.20             | 3.5              | Q.P.        | H    | 16.15              | 1.94       | 21.59           | 46.00             | 24.41       |
| 441.50             | 3.4              | Q.P.        | H    | 17.74              | 2.18       | 23.32           | 46.00             | 22.68       |

Middle Frequency: 88.7 MHz

| Radiated Emissions |                  |             | Ant  | Correction Factors |            | Total           | FCC Limit         |             |
|--------------------|------------------|-------------|------|--------------------|------------|-----------------|-------------------|-------------|
| Frequency (MHz)    | Reading (dBuV/m) | Detect Mode | Pol. | Ant. (dB/m)        | Cable (dB) | Actual (dBuV/m) | AV Limit (dBuV/m) | Margin (dB) |
| 177.41             | 4.2              | Q.P.        | H    | 15.64              | 1.36       | 21.20           | 43.52             | 22.30       |
| 266.11             | 3.0              | Q.P.        | H    | 16.56              | 1.71       | 21.27           | 46.00             | 24.73       |
| 354.80             | 3.2              | Q.P.        | H    | 16.17              | 1.94       | 21.31           | 46.00             | 24.69       |
| 443.50             | 3.4              | Q.P.        | H    | 17.79              | 2.19       | 23.38           | 46.00             | 22.62       |

High Frequency: 88.9 MHz

| Radiated Emissions |                  |             | Ant  | Correction Factors |            | Total           | FCC Limit         |             |
|--------------------|------------------|-------------|------|--------------------|------------|-----------------|-------------------|-------------|
| Frequency (MHz)    | Reading (dBuV/m) | Detect Mode | Pol. | Ant. (dB/m)        | Cable (dB) | Actual (dBuV/m) | AV Limit (dBuV/m) | Margin (dB) |
| 117.80             | 5.0              | Q.P.        | H    | 15.65              | 1.36       | 22.01           | 43.52             | 21.49       |
| 266.70             | 4.0              | Q.P.        | H    | 16.54              | 1.71       | 22.26           | 46.00             | 23.74       |
| 355.60             | 3.1              | Q.P.        | H    | 16.18              | 1.94       | 21.22           | 46.00             | 24.78       |
| 444.50             | 4.0              | Q.P.        | H    | 17.82              | 2.19       | 24.01           | 46.00             | 21.99       |

Remark: Other spurious frequencies were not found up to 2000 MHz

Notes : 1. H: Horizontal polarization, V: Vertical polarization

2. Emission Level =Reading +Antenna Factor + Cable Loss

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### Test Equipment Used

| EQUIPMENT            | MANUFACTURER    | MODEL           | CAL DUE. |
|----------------------|-----------------|-----------------|----------|
| Spectrum Analyzer    | H/P             | 8593E           | Sep.2006 |
| Test Receiver        | Rohde & Schwarz | ESVS 10         | Dec.2005 |
| Log-periodic Antenna | Rohde & Schwarz | UHALP9107       | May 2006 |
| Horn Antenna         | Schwarzbeck     | BBHA9120D(0600) | Jul.2006 |
| Biconical Antenna    | Schwarzbeck     | VHA9103         | Mar.2006 |
| Anechoic Chamber     | Seo Young EMC   | -               | -        |

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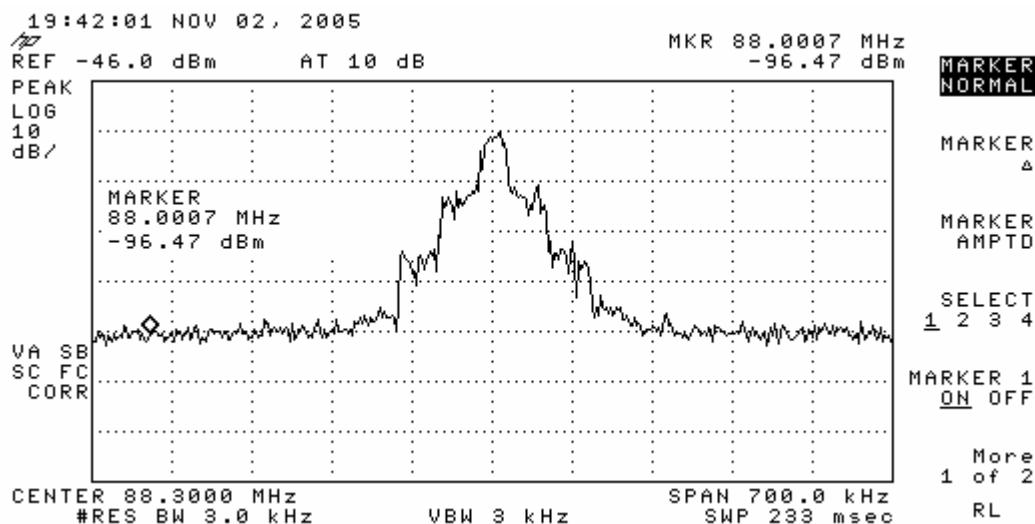
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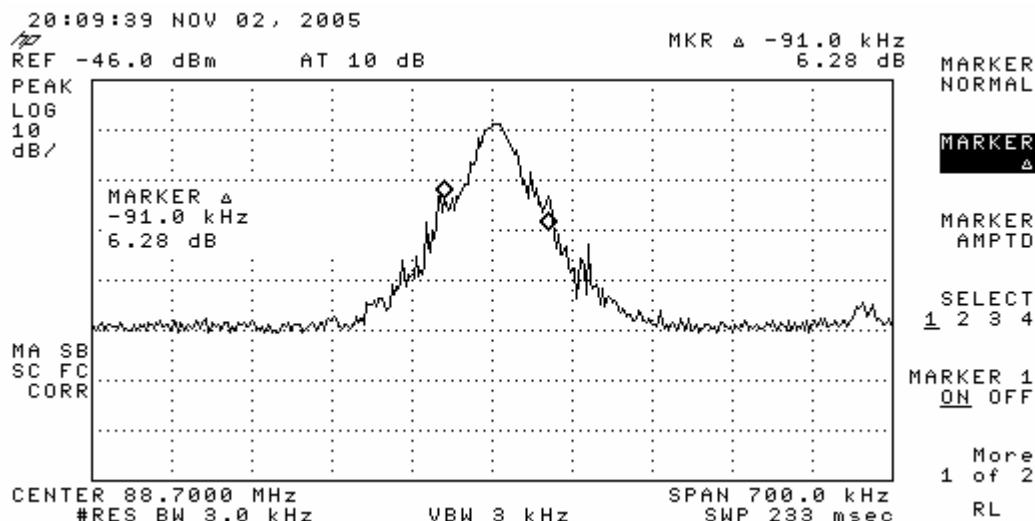
## 7. Emission Bandwidth      FCC Part 15, Subpart C, Section 15.239

Emission from the intentional radiator is confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band lies wholly within the frequency range of 88-108 MHz.

Ch1=88.3 MHz



CH2=88.7 MHz



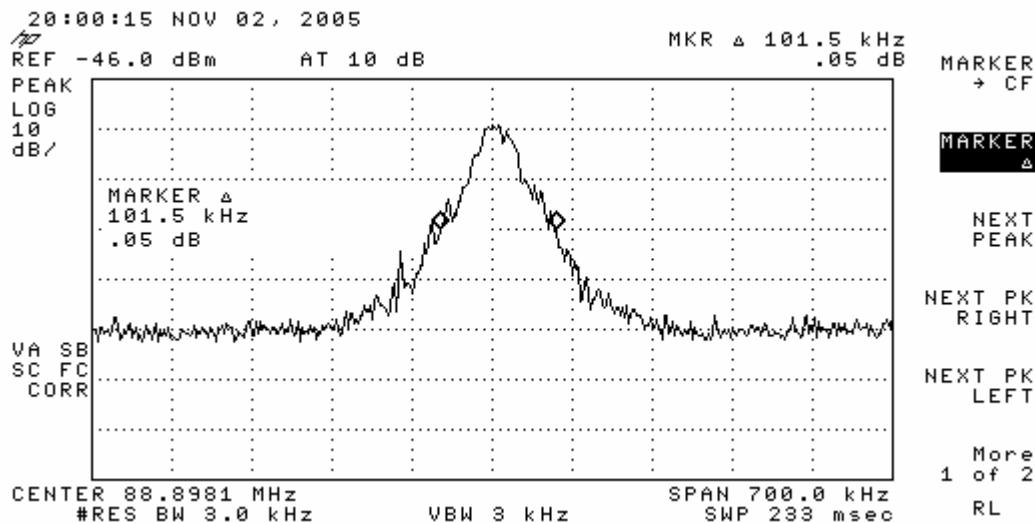
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CH3=88.9 MHz



### Test Equipment Used

| EQUIPMENT         | MANUFACTURER      | MODEL   | CAL DUE. |
|-------------------|-------------------|---------|----------|
| Spectrum Analyzer | H/P               | 8593E   | Sep.2006 |
| Test Receiver     | Rohde & Schwarz   | ESVS 10 | Dec.2005 |
| Biconical Antenna | Schwarzbeck       | VHA9103 | Mar.2006 |
| DC Power Supply   | DAE GIL           | DGD-300 | Jan.2006 |
| Amplifier         | SONOMA INSTRUMENT | 305     | Jul.2006 |
| Anechoic Chamber  | Seo Young EMC     | -       | -        |

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## 8. Summary of Results

The data collected shows that Model ET-E10 complies Part 15.209 and 15.239 of FCC Technical Rules. Emission from the intentional radiator is confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band lies wholly within the frequency range of 88-108 MHz.

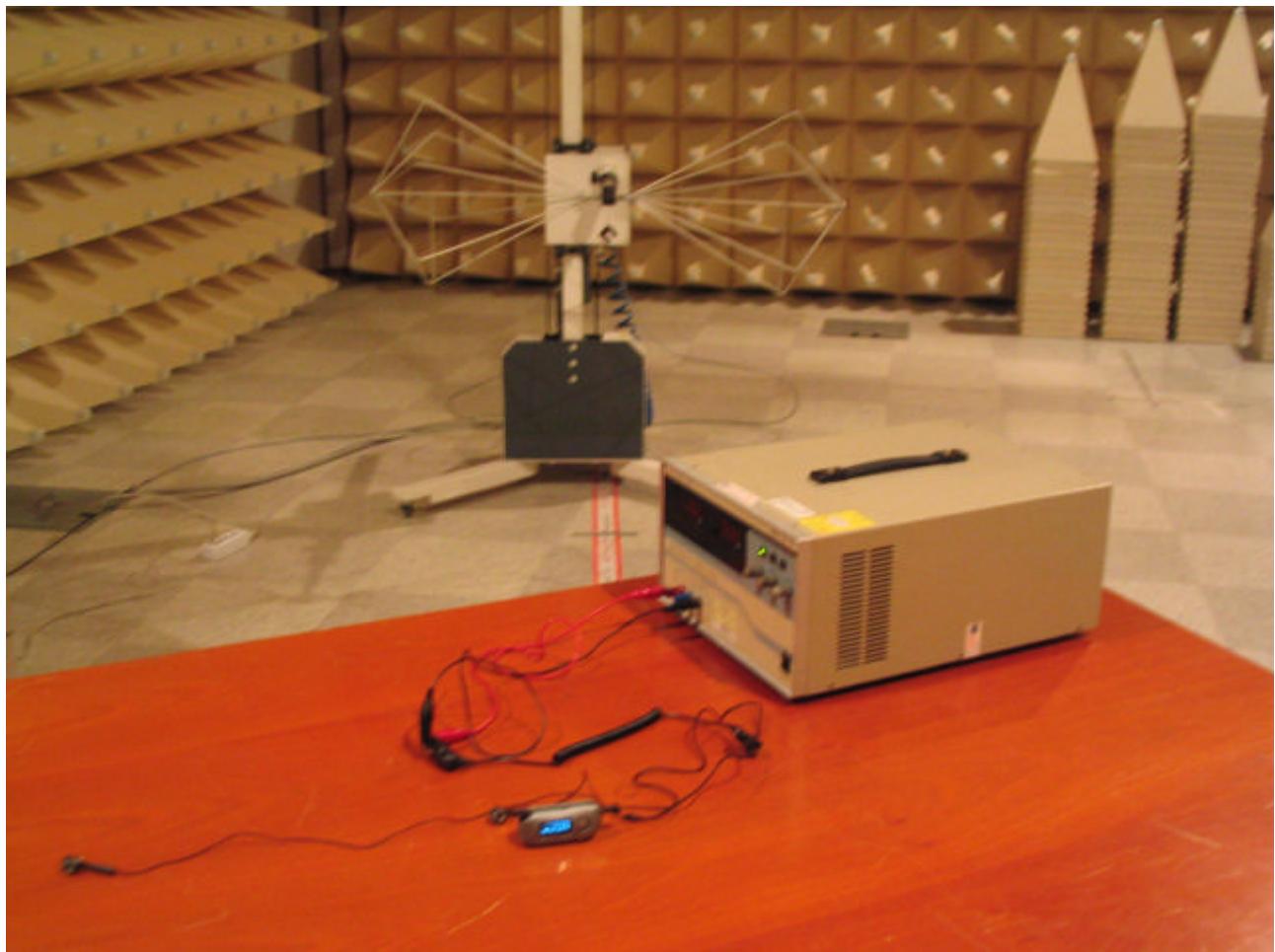
The field strength of any emission within the permitted 200 kHz band is not exceed 200 uV/m(48dBuV/m) at 3 meters The device was tested with DC 24V input power because field strength with DC 24V was more than field strength with DC 12V

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**9. Attachment A – Photo of test set up**

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