



# SAR Evaluation REPORT

*For*

**Applicant :** Dreamax Ltd.

**Address :** UNIT 04 7-F BRIGHT WAY TOWER NO.33 MONG KOK ROAD KL,  
HongKong

**Product Name :** MID

**Model Name :** DMX-ST7A,DMX-ST7A-ST7Z

**Brand Name :** N/A

**FCC ID :** 2AA59DREAMAX01

**Report No. :** STS130914F3

**Date of Issue :** October 30,2013

**Issued by :** Shenzhen Super Test Service Technology Co., Ltd.

**Address :** No.5, Langshan 2nd Rd., North Hi-Tech Industrial park, Nanshan,  
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TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY ..... 2

2. GENERAL INFORMATION ..... 4

2.1 Product Information ..... 4

3. TEST FACILITY ..... 5

3.1 TEST FACILITY ..... 5

4. SAR Evaluation ..... 6

4.1 RF Exposure Compliance Requirement ..... 6

4.1.1 Standard Requirement ..... 6

15.247 b(4) requirement: ..... 6

4.1.2 Limits ..... 6

4.1.3 EUT RF Exposure ..... 6

## 1. VERIFICATION OF CONFORMITY

**Equipment Under Test:** MID  
**Brand Name:** N/A  
**Model Number:** DMX-ST7A  
**Series Model Name:** DMX-ST7A-ST7Z  
**Difference description:** The same PCB, only the model name is different.  
**FCC ID:** **2AA59DREAMAX01**  
**Applicant:** Dreamax Ltd.  
UNIT 04 7-F BRIGHT WAY TOWER NO.33 MONG KOK ROAD KL, HongKong  
**Manufacturer:** Shenzhen John ward technology Co., LTD  
No.201,Building C, Hongshengyuan Industrial Park, No.339  
Bulong Road , Ma An hall community, Bantian Street, Longgang District,  
Shenzhen, Guangdong, China  
**Technical Standards:** 47 CFR Part 1.1307(2011)  
47 CFR Part 2.1093(2011)  
KDB447498D01 General RF Exposure Guidance v05  
**File Number:** STS130914F3  
**Date of test:** September 25,2013~ October 21,2013  
**Deviation:** None  
**Condition of Test Sample:** Normal  
**Test Result:** PASS

The above equipment was tested by STS for compliance with the requirements set forth in FCC rules and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Tested by (+ signature):



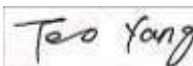
Zhang Ling      October 30,2013

Review by (+ signature):



July Wen      October 30,2013

Approved by (+ signature):



Terry Yang      October 30,2013

## 2. GENERAL INFORMATION

### 2.1 Product Information

EUT- MID	
Description:	MID
Model Name:	DMX-ST7A
Power Supply:	DC 5V by AC/DC adapter 100~240V 50/60Hz DC 3.7V by Lithium-ion Battery
Frequency Range:	IEEE 802.11b/g mode:2412MHz – 2462MHz IEEE 802.11n-20 mode:2412MHz – 2462MHz
Number of Channels:	IEEE 802.11b/g/n mode: 11 Channels
Transmit Power	IEEE 802.11b mode: 9.5+/-2 dBm IEEE 802.11g mode: 9.0+/-2 dBm IEEE 802.11n mode: 9.0+/-2 dBm
Modulation Technique:	IEEE 802.11b mode: DSSS (1, 2, 5.5 and 11 Mbps) IEEE 802.11g mode: OFDM (6, 9, 12, 18, 24, 36, 48 and 54 Mbps) IEEE 802.11n Standard-20 MHz Channel mode: OFDM (6.5, 13, 19.5, 26, 39, 52, 58.5, 65.0Mbps)
Antenna Gain:	0dBi
Antenna Type:	Internal Fixed
Temperature Range:	-20°C ~ +50°C

**NOTE:**

1. For a more detailed features description about the EUT, please refer to User's Manual.

### 3. TEST FACILITY

#### 3.1 TEST FACILITY

Test Site:	Compliance Certification Services Inc. (Kun shan) Laboratory
Location:	No.10 Weiye Rd, Innovation park, Eco&Tec,Development Zone, Kunshan City, Jiangsu, China
Description:	<p>There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4 and CISPR 16 requirements.</p> <p>The FCC Registration Number is <b>238958</b>.</p> <p>The <b>CNAS</b> Registration Number is <b>CNAS L4354</b>.</p>
Site Filing:	The site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4:2009 and CISPR 16 requirements that meet industry regulatory agency and accreditation agency requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna.

## 4. SAR Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Standard Requirement

15.247 b(4) requirement:

The conducted power limit specified in paragraph (b) of this section is based on the use of antenna with directional gains that do not exceed 6dBi, Except as shown in paragraph (c) of this section. If transmitting antennas of directional gains greater than 6dBi are used. The conducted output power from the intentional radiator shall be reduced below the stated values in paragraph b(1),b(2) and b(3) of the section as appropriate by the amount in dB that the directional gain of the antenna exceeds 6dBi.

#### 4.1.2 Limits

According to KDB447498D01 General RF Exposure Guidance v05

The 1-g and 10-g SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances  $\leq 50$  mm are determined by:

$$\left[ \frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$
 for 1-g SAR and 7.5 for 10-g extremity SAR, where

$f(\text{GHz})$  is the RF channel transmit frequency in GHz;

Power and distance are rounded to the nearest mW and mm before calculation

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100MHz and 6GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5mm is applied to determine SAR test exclusion.

#### 4.1.3 EUT RF Exposure

The Max Conducted Output Power is 9.95 dBm in highest channel (2.462GHz);

The best case gain of the antenna is 0.0dBi;

The minimum test separation distance is 5 mm.

$S_0$ , EIRP = 9.95dBm + 0.0dBi = 9.95dBm

9.95dBm logarithmic terms convert to numeric result is nearly 9.89mW.

According to the formula, calculate the EIRP test result:

$$\left[ \frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot [\sqrt{f(\text{GHz})}]$$

General RF Exposure =  $(9.89\text{mW}/5\text{mm}) \cdot \sqrt{2.462\text{GHz}} = 1.26$  ①

SAR requirement:  $S = 3.0$  ②;

①<②,

So RF exposure is PASS and the SAR report is not required.

-----END OF REPORT-----