



MPE TEST REPORT

FCC Per 47 CFR 2.1091(b)

FCC ID: **DI2CTL3082**

Compiled by

(position+printed name+signature)...: File administrators Wenliang Li

Supervised by

(position+printed name+signature)...: Test Engineer Eric Zhang

Approved by

(position+printed name+signature)...: Manager Jimmy Li

Date of issue.....: Nov 11, 2010

Testing Laboratory Name: **Shenzhen Huatongwei International Inspection Co., Ltd**

Address.....: Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

Applicant's name: **COMPUTIME LTD.**

Address.....: 17/F, Great Eagle Centre, 23 Harbour Road, Wanchai, Hong Kong

Test specification:

Standard: **FCC Per 47 CFR 2.1091(b)**

TRF Originator.....: Shenzhen Huatongwei International Inspection CO., Ltd

Master TRF.....: Dated 2006-06

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Test item description : In Home Display

Trade Mark: /

Model/Type reference.....: CTL3082

Listed Models: /

Result.....: **Positive**

M P E T E S T R E P O R T

| | | |
|-----------------|-------------------|---------------|
| FCC ID : | DI2CTL3082 | Nov 11, 2010 |
| | | Date of issue |

Equipment under Test : In Home Display

Model /Type : CTL3082

Listed Models : /

Applicant : **Computime Ltd.**

Address : 17/F, Great Eagle Centre, 23 Harbour Road, Wanchai,
Hong Kong

Manufacturer : **Computime Ltd.**

Address : Computime Technology Park. Dan Zhu Tou Cun,BuJi
Longgang Region ShenZhen,GuangDong

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. SUMMARY

1.1. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- - supplied by the lab
- Power Cable
 - Length (m) : /
 - Shield : /
 - Detachable : /
- Multimeter
 - Manufacturer : /
 - Model No. : /
- AC Adapter
 - MODEL:SSW-2158
 - INPUT:100-240V~50/60Hz 0.1A
 - OUTPUT:5.0V DC 350mA
 - Power Cable:150cm
 - ◇ Shield ◆ Unshield

1.2. NOTE

1. The EUT is a an IEEE 802.15 ZigBee Standard type device,The functions of the EUT listed as below:

| | Test Standards | Reference Report |
|--------|--|------------------|
| Zigbee | FCC Part 15 Subpart C (Section15.247) | WE10100017 |
| Zigbee | FCC Part 15 Subpart B | TRE10100044 |

2. The frequency bands used in this EUT are listed as follows:

| Frequency Band(MHz) | 2400-2483.5 | 5150-5350 | 5470-5725 | 5725-5850 |
|---------------------|-------------|-----------|-----------|-----------|
| Zigbee | √ | — | — | — |

3. The EUT provides one completed transmitter and receiver.

| Modulation Mode | TX Function |
|-----------------|-------------|
| Zigbee | 1TX |

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

2.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

| Test | Range | Measurement Uncertainty | Notes |
|-----------------------|--------------|--------------------------------|--------------|
| Radiated Emission | 30~1000MHz | 4.24 dB | (1) |
| Radiated Emission | 1~18GHz | 5.16 dB | (1) |
| Radiated Emission | 18-40GHz | 5.54 dB | (1) |
| Conducted Disturbance | 0.15~30MHz | 3.39 dB | (1) |

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. Method of measurement

3.1. Applicable Standard

According to §1.1307(b)(1), 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 of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

3.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

| Frequency Range(MHz) | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm ²) | Averaging Time (minute) |
|---|------------------------------|------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure | | | | |
| 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 – 100,000 | / | / | 5 | 6 |

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

| Frequency Range(MHz) | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm ²) | Averaging Time (minute) |
|---|------------------------------|------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure | | | | |
| 0.3 – 3.0 | 614 | 1.63 | (100) * | 30 |
| 3.0 – 30 | 824/f | 2.19/f | (180/f)* | 30 |
| 30 – 300 | 27.5 | 0.073 | 0.2 | 30 |
| 300 – 1500 | / | / | f/1500 | 30 |
| 1500 – 100,000 | / | / | 1.0 | 30 |

F=frequency in MHz

*=Plane-wave equivalent power density

3.3. MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG / 4\pi R^2$$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna is -0.32 dBi, the RF power density can be obtained.

TEST RESULTS

| Mode | Minimum Separation Distance (20cm) | Output Power (dBm) | Output Power (mW) | Antenna Gain (Nemeric) | Power Density Limit (mW/cm ²) | Power Density At 20 cm (mW/cm ²) | Test Results |
|------|------------------------------------|--------------------|-------------------|------------------------|---|--|--------------|
| 2405 | 20.00 | 14.69 | 29.44 | 0.929 | 1.000 | 0.0054 | Pass |
| 2440 | 20.00 | 18.79 | 75.68 | 0.929 | 1.000 | 0.0140 | Pass |
| 2480 | 20.00 | 6.97 | 4.98 | 0.929 | 1.000 | 0.0009 | Pass |

4. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 (b) for the controlled RF Exposure.

.....**End of Report**.....