



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test report file number : E043R-076

Applicant : InsideTNC Co., Ltd.

Address : #899-6, Hogue-Dong, Dongan-Gu, Anyang-City, Kyungki-Do, Korea

Manufacturer : InsideTNC Co., Ltd.

Address : #899-6, Hogue-Dong, Dongan-Gu, Anyang-City, Kyungki-Do, Korea

Type of Equipment : MAGIC PRESENTER

FCC ID : PMUMP100RX

Model Name : MP-R100

Serial number : N/A

Total page of Report : 12 pages (including this page)


Date of Incoming : March 04, 2004


Date of Issuing : March 24, 2004

SUMMARY

The equipment complies with the requirements of FCC CFR 47 PART 15 SUBPART B, SECTION 15.101.

This test report contains only the results of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

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**1. VERIFICATION OF COMPLIANCE**

- APPLICANT : InsideTNC Co., Ltd.
- ADDRESS : #899-6, Hogye-Dong, Dongan-Gu, Anyang-City, Kyungki-Do, Korea
- CONTACT PERSON : Mr. Kyung-Sik, Jeon / Manager
- TELEPHONE NO : +82-31-424-1900
- FCC ID : PMUMP100RX
- MODEL NO/NAME : MP-R100
- SERIAL NUMBER : N/A
- DATE : March 24, 2004

| | |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------|
| DEVICE TYPE | Peripheral Device for Class B Computing device and Receiver - Unintentional Radiator |
| E.U.T. DESCRIPTION | Remote Control & Laser Pointer for Presentation |
| THIS REPORT CONCERNS | ORIGINAL GRANT |
| MEASUREMENT PROCEDURES | ANSI C63.4: 2001 |
| TYPE OF EQUIPMENT TESTED | PRE-PRODUCTION |
| KIND OF EQUIPMENT AUTHORIZATION REQUESTED | CERTIFICATION |
| EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S) | FCC PART 15, SECTION 15.101 |
| MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE | No |
| FINAL TEST WAS CONDUCTED ON | 3 METER OPEN AREA TEST SITE |

The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.



2. GENERAL INFORMATION

2.1 Product Description

The InsideTNC Co., Ltd., Model MP-R100 (referred to as the EUT in this report) is a receiver that is fixed USB port of PC and receives the signal from the transmitter, Model: MP-T100, FCC ID: PMUMP100TX, which was manufactured by above applicant. The product specification described herein was obtained from product data sheet or user's manual.

| | | |
|--------------------------------------------------|----------------------------|---------------------------------------|
| CHASSIS TYPE | | Non-Metal |
| RECEIVING FREQUENCY | | 311.0625 MHz |
| RF RECEIVER MODULE | TYPE | PLL Type |
| | LOCAL CLOCK FREQ. | 309MHz |
| | FREQUENCY GENERATION | L/C Generation |
| | MODULATION SCHEME | ASK |
| | CARRIER DETECT SENSITIVITY | More than 100dBm |
| LIST OF EACH OSC. OR CRY. FREQ. (FREQ.>=1MHz) | | 4.83584 MHz on Main Board |
| NUMBER OF LAYERS | | 2 Layers |
| OPERATING VOLTAGE/CURRENT | | DC 5V from the USB hub standard of PC |

2.2 Model Differences:

The difference(s) compared to the EUT is as follows: None

2.3 Related Submittal(s) / Grant(s)

Original submittal only



2.4 Test System Details

The EUT was tested with the following all equipment used in the tested systems are:

| Model | Manufacturer | FCC ID | Description | Connected to |
|----------|---------------------|------------|-------------|--------------|
| MP-R100 | InsideTNC Co., Ltd. | PMUMP100RX | RECEIVER | Notebook PC |
| PP01L | DELL Computer Corp. | DoC | Notebook PC | - |
| 2225C | HP | DSI6XU2225 | Printer | Notebook PC |
| 020-0470 | Cardinal | GDE0196 | Modem | Notebook PC |

2.5 Test Methodology

Radiated testing was performed according to the procedures in ANSI C63.4: 2001. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-080 Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)



3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

| DEVICE TYPE | MANUFACTURER | MODEL/PART NUMBER | FCC ID |
|-------------|---------------------|-------------------|--------|
| Main Board | InsideTNC Co., Ltd. | IVCOM | N/A |

3.2 EUT exercise Software

After connecting the EUT to the USB port of PC, the signal from the transmitter was continuously received.

3.3 Equipment Modifications

-. None

3.4 Configuration of Test System

Line Conducted Test: The EUT was inserted to USB port of PC and the power line of PC was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4: 2001 7.2.3 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emissions test were conducted using the procedure in ANSI C63.4: 2001 8.3.1.1 and 13.1.4.1 to determine the worse operating conditions. Final radiated emission tests were conducted at 3meter open area test site.

**4. PRELIMINARY TEST****4.1 AC Power line Conducted Emissions Tests**

During Preliminary Tests, the following operating mode was investigated

| Operation Mode | The Worse operating condition (Please check one only) |
|----------------|-------------------------------------------------------|
| RX mode | X |

4.2 Radiated Emissions Tests

During Preliminary Tests, the following operating modes were investigated

| Operation Mode | The Worse operating condition (Please check one only) |
|----------------|-------------------------------------------------------|
| RX mode | X |

**5. FINAL RESULT OF MEASUREMENT**

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level

5.1 Conducted Emission TestHumidity Level : 42 %Temperature: 21 °CLimits apply to : FCC CFR 47, PART 15, SUBPART BType of Test : ReceiverResult : PASSED BY -8.57 dB at 0.17 MHz with peak mode.

EUT : MAGIC PRESENTER

Date: March 03, 2004

Operating Condition : RX mode.

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

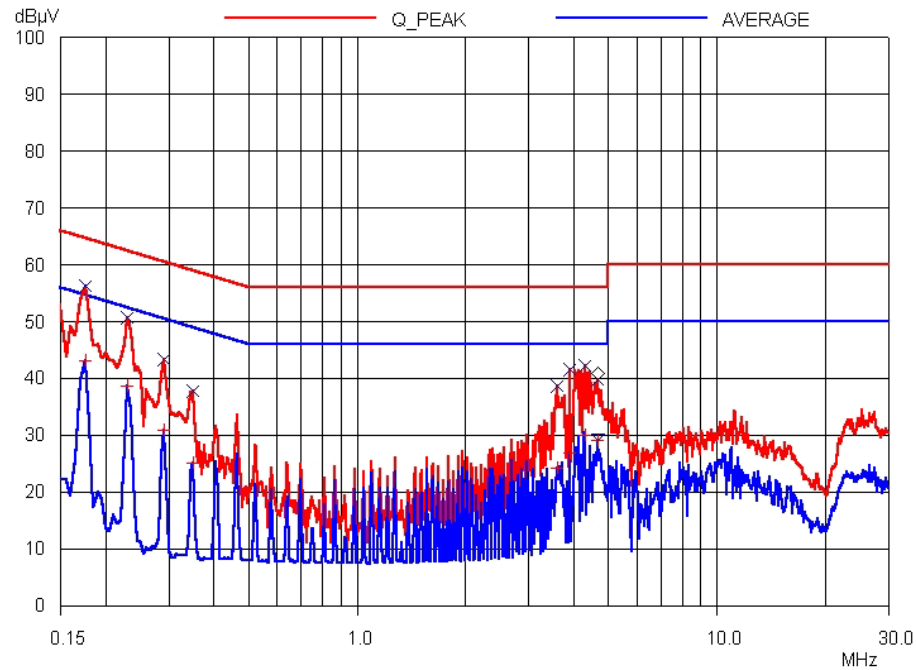
| Frequency (MHz) | Line | Peak (dBuV) | | Margin (dB) |
|-----------------|------|----------------|------------|-------------|
| | | Emission level | Q.P Limits | |
| 0.17 | H | 56.15 | 64.72 | -8.57 |
| 0.23 | H | 50.76 | 62.45 | -11.69 |
| 3.88 | H | 41.49 | 56.00 | -14.51 |
| 4.28 | H | 42.14 | 56.00 | -13.86 |
| 4.53 | N | 41.03 | 56.00 | -14.97 |
| 4.59 | N | 41.22 | 56.00 | -14.78 |
| Frequency (MHz) | Line | Average (dBuV) | | Margin (dB) |
| | | Emission level | Limits | |
| 0.17 | H | 43.20 | 54.72 | -11.52 |
| 0.23 | H | 38.56 | 52.45 | -13.89 |
| 4.28 | H | 29.91 | 46.00 | -16.09 |
| 4.59 | N | 30.64 | 46.00 | -15.36 |

Line Conducted Emission Tabulated Data

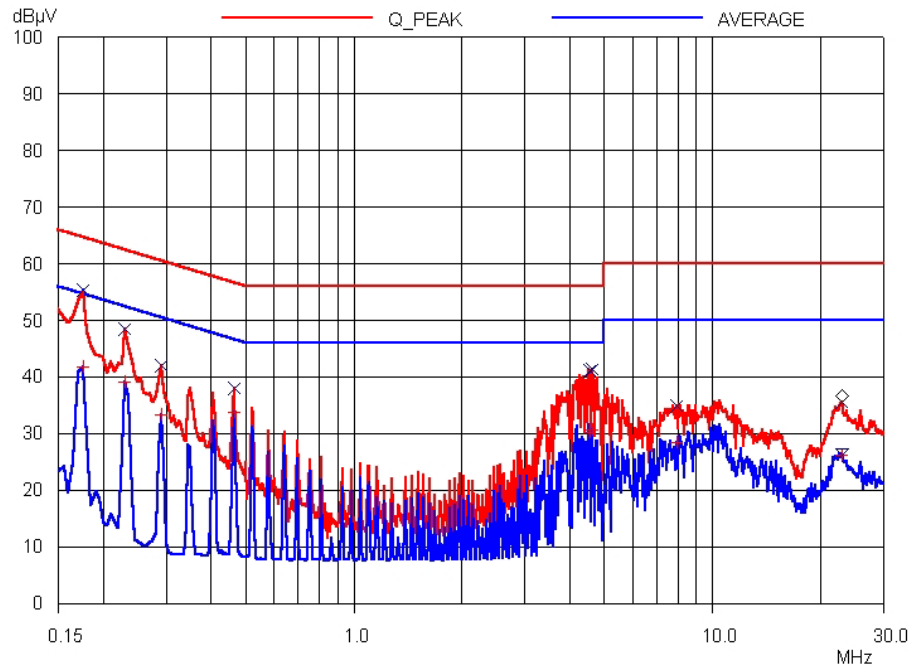
Remark : "H": Hot Line, "N": Neutral line

See next page for an overview sweep performed with peak and average detector.

Tested by: Dan-Gi, Lee / Project Engineer



HOT LINE



NEUTRAL LINE

**5.1 Radiated Emission Test**

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

Humidity Level : 39 % Temperature : 19 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B
 Type of Test : Receiver
 Result : PASSED BY -7.18 dB at 709.28 MHz

EUT : MAGIC PRESENTER Date: March 13, 2004

Operating Condition : RX mode.

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

Frequency Range : 30 MHz ~ 2 GHz

Distance : 3 Meter

| Radiated Emission | | Ant | Correction Factors | | Total | FCC LIMIT | |
|-------------------|----------------|------|--------------------|---------------|------------------|-------------------|----------------|
| Freq. (MHz) | Amp. (dBuV) | Pol. | Ant. (dBuV/m) | Cable (dB) | Amp. (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
| 155.94 | 12.80 | H | 14.73 | 1.37 | 28.90 | 43.50 | -14.60 |
| 324.58 | 14.60 | H | 14.18 | 2.15 | 30.93 | 46.00 | -15.07 |
| 539.71 | 15.60 | H | 18.12 | 2.75 | 36.47 | 46.00 | -9.53 |
| 584.28 | 12.80 | H | 18.65 | 2.88 | 34.33 | 46.00 | -11.67 |
| 709.28 | 14.30 | H | 21.16 | 3.36 | 38.82 | 46.00 | -7.18 |
| 976.73 | 10.90 | H | 23.96 | 4.15 | 39.01 | 54.00 | -14.99 |

Radiated Emission Tabulated Data

Tested by: Dan-Gi, Lee / Project Engineer



6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+ Meter reading (dBuV)

+ Cable Loss (dB)

+ Antenna Factor (Loss) (dB/meter)

= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)

**7. LIST OF TEST EQUIPMENT**

| No. | EQUIPMENTS | MFR. | MODEL | SER. NO. | LAST CAL | DUE CAL | USE |
|-----|--------------------------|-------------|-------------|--------------|----------|---------|-----|
| 1. | Test receiver | R/S | ESVS 10 | 827864/005 | DEC/03 | 12MONTH | ■ |
| 2. | Test receiver | R/S | ESHS 10 | 834467/007 | APR/03 | 12MONTH | ■ |
| 3. | Spectrum analyzer | HP | 8566B | 3407A08547 | MAY/03 | 12MONTH | ■ |
| 4. | Spectrum analyzer | HP | 8568B | 3109A05456 | MAY/03 | 12MONTH | ■ |
| 5. | RF preselector | HP | 85685A | 3107A01264 | MAY/03 | 12MONTH | ■ |
| 6. | Quasi-Peak Adapter | HP | 85650A | 3107A01542 | MAY/03 | 12MONTH | ■ |
| 7. | TRILOG Broadband Antenna | Schwarzbeck | VULB9163 | VULB9163 166 | FEB/03 | 12MONTH | ■ |
| 8. | Biconical antenna | EMCO | 3104C | 9109-4443 | MAY/03 | 12MONTH | ■ |
| | | | | 9109-4444 | JUL/03 | | |
| | | Schwarzbeck | VHA9103 | 91031852 | JAN/04 | | |
| 9. | Log Periodic antenna | EMCO | 3146 | 9109-3213 | FEB/04 | 12MONTH | |
| | | | | 9109-3214 | JUL/03 | | ■ |
| | | | | 9109-3217 | MAY/03 | | |
| | | Schwarzbeck | 9108-A(494) | 62281001 | JAN/04 | | |
| 10. | LISN | EMCO | 3825/2 | 9109-1867 | AUG/03 | 12MONTH | ■ |
| | | | | 9109-1869 | OCT/03 | | ■ |
| 11. | Position Controller | EMCO | 1090 | 9107-1038 | N/A | N/A | ■ |
| 12. | Turn Table | EMCO | 1080-1.21 | 9109-1576 | N/A | N/A | ■ |
| 13. | Antenna Master | EMCO | 1070-1 | 9109-1624 | N/A | N/A | ■ |