CONSUMER PRODUCTS SERVICES DIVISION

**Technical Report:** **(5205)333-0526(A)** December 19, 2005
Date Received: November 29, 2005 

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PLANET TOYS (HK) LTD
RM 1210, 12/F, CHINACHEM GOLDEN PLAZA
77 MODY ROAD
TSIMSHATSUI EAST
KOWLOON
HONG KONG

| | | | |
|---|---|---|---|
| Sample Description: | 3267 MALIBU R/C 1. ) 49MHZ | | |
| Vendor: | N/A | Sample Size: | 2 |
| Manufacturer: | N/A | Style No(s): | N/A |
| Buyer: | N/A | SKN/SKU No.: | N/A |
| Labeled Age Grade: | NOT PRESENT | PO No.: | N/A |
| Appropriate Age Grade: | N/A | Ref #: | N/A |
| Client Specified Age Grade: | NOT SPECIFY | Country of Origin: | CHINA |
| Tested Age Grade: | N/A | Assortment No.: | N/A |
| UPC Code: | N/A | | |
| Test Finished Date: | December 19, 2005 | | |
| Terminal voltage: | 9Vdc (6 x AA) | | |

**EXECUTIVE SUMMARY:**

The sample(s) MEET the following requirement(s):

- The tested requirements of the applicable sections of the Rules and Regulation detailed in 47 CFR Part 15 of the Federal Communication Commission (FCC) as per client's request.

BUREAU VERITAS HONG KONG LIMITED

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NK/mm

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## SUMMARY OF TEST RESULTS

FCC ID: SZ23267R49

The sample of vehicle submitted COMPLIES with the tested requirements of the applicable sections of the Rules and Regulations detailed in 47 C.F.R., Part 15 of the Federal Communication Commission (FCC) of United States of America.

The Equipment-under-test (EUT) is a RF remote control receiver.

**Tests Required For Unintentional Radiator:**

| Test Executed | Test Requirement | Test Method | Limit | Status |
|---|---|---|---|---|
| Measurement of Radiated Emissions | Section, 15.109 CFR47, FCC Part 15 | Section 15.31, 47 CFR, FCC Part 15 ANSI C63.4-2003 | See Section 15.109 CLASS B | Meet |
| Measurement of Conducted Emissions on AC Mains | Section 15.107 CFR47, FCC Part 15 | Section 15.31, 47 CFR, FCC Part 15 ANSI C63.4-2003 | See Section 15.107 CLASS B | N. A. |

N. A. = Not Applicable

**Test Results:**

**Measurement of Radiated Emissions:**

**Requirements:** FCC PART 15, SECTION 15.109

**Limit:** Section 15.109 Class B

**Port under test:** Enclosure

**Test equipment:**

| Description | Equipment No. | Brand Name | Model No. |
|---|---|---|---|
| EMI Test Receiver | M 054 001 L | Rohde & Schwarz | ESCS 30 |
| Biconical Antenna | T 025 001 L | Rohde & Schwarz | HK 116 |
| Log-Periodic Antenna | T 025 002 L | Rohde & Schwarz | HL 223 |
| Open Area Test Site (range = 3m) | T 027 001 L | None | None |
| Full Anechoic Chamber (7m x 3m x 3m) | M 053 001 L | Albatross Projects | M-CDC |
| Automatic Antenna Mast | T 025 003 L | Rainer Schäfer | RSM 010 |
| Automatic Turntable | T 028 001 L | Rainer Schäfer | RST 020 |
| Antenna Mast / Turntable Controller | T 026 001 L | Rainer Schäfer | RSC |
| Coaxial Cable No. 2 | T 029 002 L | Uniradio | None |
| Coaxial Cable No. 6 | T 029 006 L | Unknown | None |
| Coaxial Cable No. 3 | T 029 003 L | Suhner | None |
| Coaxial Cable No. 4 | T 029 004 L | Suhner | None |
| LOOP Antenna | M 056 001L | Schaffner | HLA 6120 |

**Test method:**

Location of test facilities:

The EMC laboratory is located at the following address:

No. 911, 9/F., Po Hing Centre, 18 Wang Chiu Road, Kowloon Bay, Kowloon, Hong Kong

The test facility has been found in compliance with the requirement of Section 2.948 of the FCC rules. The information has been placed on file and listed by FCC with Registration No. 507882.

The operational mode(s) under test:

The operational modes under test are determined according to the typical use of the Equipment-Under-Test (EUT) with respect to the expected highest level of emission. During the test, various parts of the EUT system are exercised in a manner permitting detection of all system disturbances.

The frequency range of radiated measurements:

The frequency range of radiated measurements is determined pursuant to Section 15.33.

For an intentional radiator the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower, if the intentional radiator operates below 10 GHz.

For an unintentional radiator, unless otherwise specified, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below 9 kHz, up to the frequency list in the following table:

| **Highest frequency generated or used in the device or on which the device operates or tunes (MHz)** | **Upper frequency of measurement range (MHz)** |
|---|---|
| Below 1.705 | 30 |
| 1.707 – 108 | 1000 |
| 108 –500 | 2000 |
| 500 – 1000 | 5000 |
| Above 1000 | 5th harmonic of the highest frequency or 40 GHz, which ever is lower. |

Limits of radiated Emissions:

The limits of radiated emissions are specified in the appropriate Sections of the FCC rules that the EUT is subject to, and the provisions in Section 15.35.

Unless otherwise specified in the Rules, on any frequency or frequencies below or equal to 1000 MHz, the limits are based on measuring equipment employing a CISPR quasi-peak detector. For frequencies above 1000 MHz the radiated limits are based upon the use of measurement instrument employing an average detector, with a minimum resolution bandwidth of 1MHz.

When average radiated emission measurements are specified in Part 15, including emission measurements below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit, unless a different peak emission limit is otherwise specified.

Measurement method of radiated emissions:

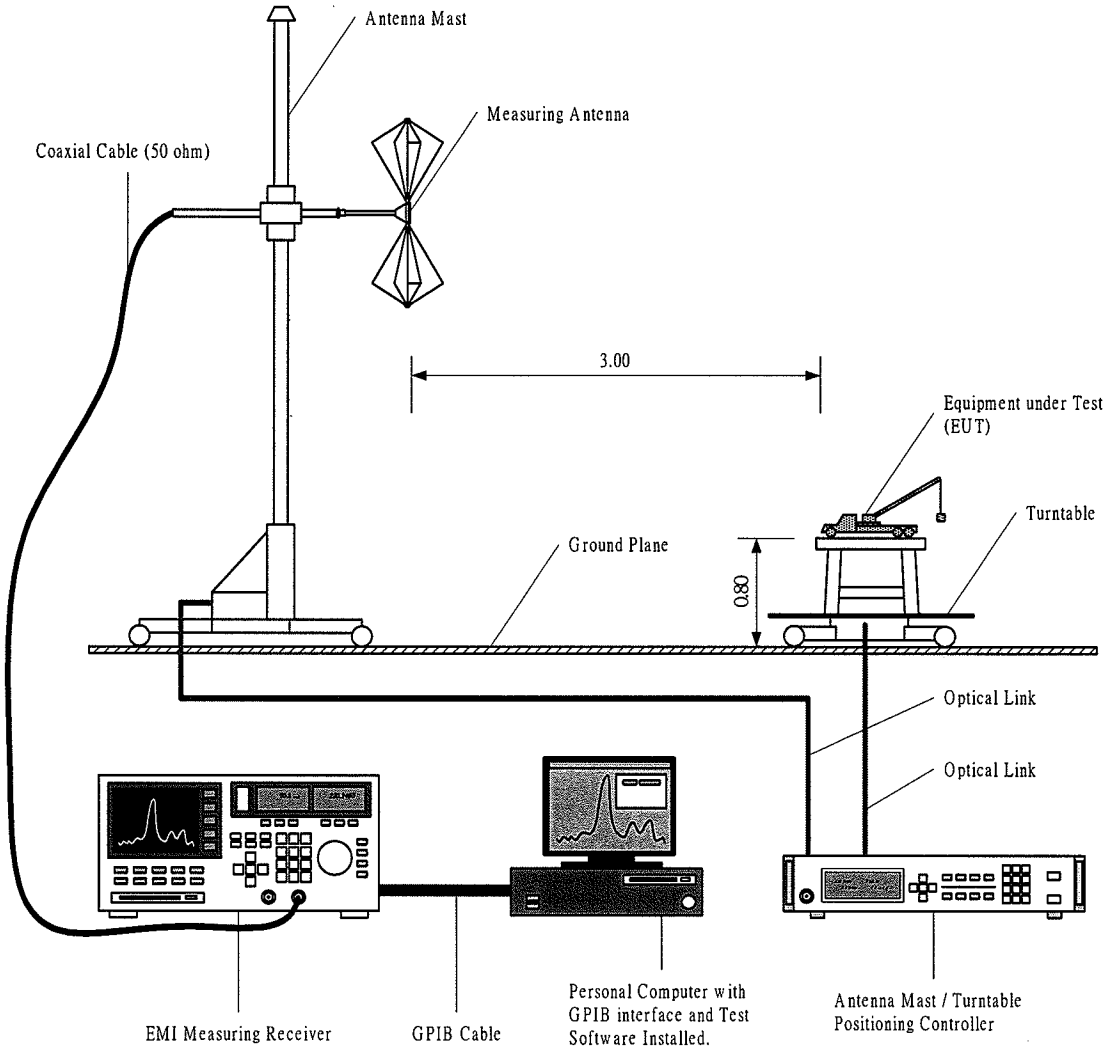
Pursuant to Section 15.31(e), for intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

Measurements are carried out on the open area test site (OATS) located on the roof of the EMC laboratory, in accordance with CISPR 22 as a basic standard at a measurement range of 3 meters. The test site has, by verification measurements, satisfied the normalized site attenuation (NSA) requirements specified in the standard CISPR 22. For measurement at each test frequency, the antenna-to-EUT azimuth is varied through 360°. The antenna is also scanned between 1 m to 4 m in height above the ground plane to maximize the level of radiated disturbances. The reading on the measuring receiver is observed for about 15 s for each final measurement; the highest readings shall be recorded with the exception of any isolated spike which shall be ignored.

For measurements of undesired spurious emissions, if the measurement results are 20 dB lower than the corresponding permissible limit levels, they can be confidently regarded as having satisfied the limit requirement applied. No records of these measurement results are required (see Section 15.31(o) of FCC Part 15).

For the measurements at frequencies with high ambient disturbance signals existing, verification tests may be carried out in the Fully Anechoic Chamber (FAC) as an auxiliary method to confirm whether there is any emission of radiated disturbances from the EUT. If there is no maximum disturbance level from the EUT other than the corresponding intrinsic noise floor of measuring system (which is at least 20 dB below the limit level), then it can be stated confidently that the measurement result obtained at OATS is due to the signal levels of ambient signal sources, not from the EUT.

**Test Set-up:**




With hand-held or portable EUT exploratory radiated emission test shall be carried out, including rotation of the EUT through three orthogonal axes to determine the attitude that highest emission relative to the limit. The so found attitude and equipment arrangement shall be used in the final measurement.

In frequency range of 9kHz to 30MHz, a calibrated Loop antenna shall be applied for measuring radiated emissions. The Loop antenna shall be positioned with its plane vertical. The centre of the loop shall be 1m above ground plane and 3m apart from the EUT placed on the turntable. The Loop antenna shall be rotated about its vertical axis to maximize the radiated emission measured.

**Results:**

**Operational mode under test:** "Cohered" by radiated, unmodulated CW signal

EUT operating condition:

(a) System Configuration

The EUT system is regarded as a portable apparatus and tested as a desktop.

The EUT is configured and tested as a stand-alone unit

(b) Antenna (if applicable):

Not applicable

(c) Special means of activating, maintaining or repeating the desired functioning state of EUT:

None

**Spurious Emissions of Unintentional Radiator:**

- Pursuant to SECTION 15.109

The maximum radiated electromagnetic emissions measured are recorded as shown below:

| **Frequency** | **Antenna Polarization** | **Detector** | **Measurement Result @ 3m** | **Limit @ 3m** | **Correction (Note 1)** | **Margin (Note 2)** | **Comment** |
|---|---|---|---|---|---|---|---|
| *MHz* | *Vertical / Horizontal* | *Peak / Quasi-Peak / Average* | *dBµV/m* | *dBµV/m* | *dB* | *dB* | *Meets / Does not Meet* |
| 51.4320 | Vertical | Quasi-Peak | 35.6 | 40.0 | 1.2 | -3.2 | Meets |
| 49.10 | Vertical | Quasi-Peak | 35.8 | 40.0 | 1.2 | -3.0 | Meets |
| 143.02 | Horizontal | Quasi-Peak | 39.9 | 43.5 | 1.2 | -2.4 | Meets |
| 155.0750 | Horizontal | Quasi-Peak | 39.6 | 43.5 | 1.2 | -2.7 | Meets |
| 190.04 | Vertical | Quasi-Peak | 34.3 | 43.5 | 1.2 | -8.0 | Meets |
| 143.2750 | Vertical | Quasi-Peak | 37.8 | 43.5 | 1.2 | -4.5 | Meets |

Remarks:
- RBW = 120 kHz
- "Cohering" Signal generator: IFR 2023A

Expanded Measurement Uncertainty $U_{lab}$ (k = 2 for level of confidence being 95%):

A). Measurement with Loop or Biconical Antenna:

For Frequency Range of *30 MHz ≤ f < 200 MHz*: $U_{lab}$ = 6.4 dB

B). Measurement with Log-Periodic Antenna:

For Frequency Range of *200 MHz ≤ f < 1000 MHz* $U_{lab}$ = 6.8 dB

Note 1:

Correction by Expanded Measurement Uncertainty following CISPR 16-4:

Measurement Uncertainty Budget specified in CISPR 16-4: $U_{cispr}$ = 5.2 dB

Per Section 4 of CISPR 16-4, If $U_{lab} \leq U_{cispr}$, then: *Correction = 0 dB.*

If $U_{lab} \leq U_{cispr}$, then: *Correction* = $(U_{lab} - U_{cispr})$ *dB.*

Note 2:

- The term margin is defined as the difference between the measurement result (corrected by taking the measurement uncertainty into consideration as illustrated in Note 1 above), and the disturbance limit specified in the standard applied, i.e.,

  Margin = (Measurement Result + Correction) - Limit.

- If Margin ≤ 0, then compliance is deemed to occur and hence the EUT does meet the requirement of the standard applied.

- If Margin > 0, then non-compliance is deemed to occur and hence the EUT does NOT meet the requirement of the standard applied.

## Conducted Emissions on AC mains port (150 kHz – 30 MHz)

**Standard:** FCC PART 15, SECTION 15.107

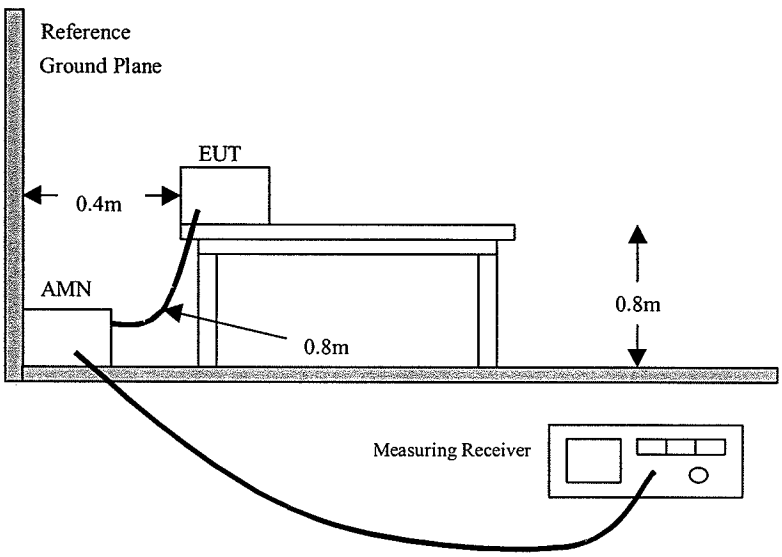
**Limit applicable:** Section 15.107, Class B

**Port under test:** AC input

**Test equipment:**

| Description | Brand Name | Model No. |
|---|---|---|
| EMI Test Receiver | Rohde & Schwarz | ESCS 30 |
| Artificial Mains Network (AMN) | Rohde & Schwarz | ESH3-Z5 |
| Pulse Limiter | Rohde & Schwarz | ESH3-Z2 |
| Reference Ground Plane | None | None |
| Digital Multi-meter | Fluke | Fluke 26 III |
| Variable transformer | Suzhou | TD2(2)-3kVA |
| Isolation transformer | Suzhou | ITM – 5000 |

**Test Set-up:**



**Test method**:

Select the AC mains supply voltage by varying the AC mains voltage over the range of 0.9 to 1.1 times the rated voltage to maximize the level of disturbance voltage measured at about 160 kHz.

Perform an initial measurement on each line with peak detectors to identify the frequencies where the maximum disturbances may occur. Then measure and record the maximum disturbances with quasi-peak and average detectors. The reading on the measuring receiver is observed for about 15 s for each measurement; the highest readings shall be recorded with the exception of any isolated spike which shall be ignored.

The final measurements shall be carried out at least at all frequencies at which there is a maximum.

The operational modes under test are determined according to the typical use of the EUT with respect to the expected highest level of emission. During the test, various parts of the EUT system are exercised in a manner permitting detection of all system disturbances

**Results**:

The test is not applicable to the product because it has no AC mains power port (See Section 15.107(d)).

END OF TEST DATA

**The General FCC Requirements in Labeling and Instruction Manual for Part 15 Devices Subject to Verification**
(Informative)

The following paragraphs provide general information of labeling on most of the devices subjected to verification authorization and requirements of FCC Part 15. The responsible party (i.e. the manufacturer or the importer within the United States) shall refer to the original and updated Rules (e.g. FCC Part 2, and Part 15, etc.) for acquiring information of updated or additional specific requirement for each individual device.

**Device Identification**:

All devices subject to verification are required to have an identification label pursuant to Section 2.954 of the Rules. Additional labeling requirements may be specified in the particular sections of the FCC rules governing the specific class of equipment. The label showing the equipment identification data may be combined with a label showing other information (serial numbers, other governments requirements, etc.), if desired. This unique identifier must be displayed on the device.

**Under NO circumstances shall verified equipment be labeled with a FCC Identifier (FCC ID), or in any manner which implies that such equipment has been approved by the FCC.**

The suggested identification label format for equipment subject to verification is illustrated as shown below:

**Model No. 123**
**Company's name or trade name**
**Country of origin #**

# Country of origin - U.S. Customs and the Federal Trade Commission regulations require all equipment produced in foreign countries to be marked with the country of origin.

**Label of Compliance Statement**:

Devices subject to FCC Part 15, Subpart B verification must be labeled with the statement(s) pursuant to Section 15.19 (a) of the Rules.

*FM broadcast radio receivers or the other receivers* associated with the operation of a licensed radio service shall bear the following statement in a conspicuous location on the device:

> **This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.**

A *stand-alone cable input selector switch* for cable TV shall bear the following statement in a conspicuous location on the device:

> **This device is verified to comply with Part 15 of the FCC Rules for use with cable television service.**

All other devices shall bear the following statement in a conspicuous location on the device:

> **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 on these products shall be permanently affixed to the product and shall be readily visible to the purchaser at the time of purchase, as described in Section 2.925(d) of the FCC Part 2.

Note:
"*Permanently affixed*" means that the label is etched, engraved, stamped, silkscreened, indelibly printed, or otherwise permanently marked on a permanently attached part of the equipment or on a nameplate of metal, plastic, or other material fastened to the equipment by welding, riveting, or a permanent adhesive. The label must be designed to last the expected lifetime of the equipment in the environment in which the equipment may be operated and must not be readily detachable.

"*Readily visible*" means that the nameplate or nameplate data must be visible from the outside of the equipment enclosure

**Information to User**

Pursuant to Section 15.21 of the Rules, the users manual or instruction manual shall include the following *or similar* statement to caution the user:

> **Caution: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

Pursuant to Section 15.105 of the Rules, the users manual or instruction manual of ***Class A digital devices*** shall include the following or similar statement, placed in a prominent location in the text of the manual:

> **NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.**

For a ***Class B digital device or peripheral***, the user manuals or instructions shall include the following *or similar* statement, placed in a prominent location in the text of the manual:

> **NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:**
>
> **- Reorient or relocate the receiving antenna.**
> **- Increase the separation between the equipment and receiver.**
> **- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.**
> **- Consult the dealer or an experienced radio/TV technician for help.**

The user manual may also be required to include other information for users if the device is subject to the provisions of any specific sections of the Rules. For example:

> - TV interface devices marketed as a kit, information for users pursuant to Section 15.25 shall be provided.
>
> - If special accessories, e.g. shielded cables and / or special connectors, are required for enabling the compliance to FCC Rules, they shall be explicitly specified in the user manuals or instructions pursuant to the Section 15.27.

In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

**The General FCC Requirements in Labeling and Instruction Manual for Part 15 Devices Subject to Certification**
(Informative)

The following paragraphs provide general information of labeling on most of the devices subjected to certification authorization and requirements of FCC Part 15. The responsible party (i.e. the manufacturer or the importer within the United States) shall refer to the original and updated Rules (e.g. FCC Part 2, and Part 15, etc.) for acquiring information of updated or additional specific requirement for each individual device.

**Label of Device Identification and Compliance Statement**:

All Part 15 devices subject to certification are required to have a label pursuant to Section 2.925 of the Rules. It shall consist of its FCC Identifier (FCC ID), and also any other statements or labeling requirements imposed by the rules governing the operation of the specific class of equipment, e.g. the compliance statement pursuant to Section 15.19(a). This unique identifier must be displayed on the device. The label format may usually appear as shown below:

**FCC ID XXX123**
**Country of origin #**

**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.**

# Country of origin - U.S. Customs and the Federal Trade Commission regulations require all equipment produced in foreign countries to be marked with the country of origin.

Additional labeling requirements may be specified in the particular sections of the FCC rules governing the specific class of equipment. The label showing the equipment identification data may be combined with a label showing other information (serial numbers, other governments requirements, etc.), if desired. This unique identifier must be displayed on the device.

The label on these products shall be permanently affixed to the product and shall be readily visible to the purchaser at the time of purchase, as described in Section 2.925(d) of the FCC Part 2.

Note:
"*Permanently affixed*" means that the label is etched, engraved, stamped, silkscreened, indelibly printed, or otherwise permanently marked on a permanently attached part of the equipment or on a nameplate of metal, plastic, or other material fastened to the equipment by welding, riveting, or a permanent adhesive. The label must be designed to last the expected lifetime of the equipment in the environment in which the equipment may be operated and must not be readily detachable.

"*Readily visible*" means that the nameplate or nameplate data must be visible from the outside of the equipment enclosure

**Information to User**

Pursuant to Section 15.21 of the Rules, the users manual or instruction manual shall include the following *or similar* statement to caution the user:

> **Caution: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

Pursuant to Section 15.105 of the Rules, the users manual or instruction manual of ***Class A digital devices*** shall include the following or similar statement, placed in a prominent location in the text of the manual:

> **NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.**

For a ***Class B digital device or peripheral***, the user manuals or instructions shall include the following *or similar* statement, placed in a prominent location in the text of the manual:

> **NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:**
>
> **- Reorient or relocate the receiving antenna.**
> **- Increase the separation between the equipment and receiver.**
> **- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.**
> **- Consult the dealer or an experienced radio/TV technician for help.**

The user manual may also be required to include other information for users if the device is subject to the provisions of any specific sections of the Rules. For example:

- TV interface devices marketed as a kit, information for users pursuant to Section 15.25 shall be provided.

- If special accessories, e.g. shielded cables and / or special connectors, are required for enabling the compliance to FCC Rules, they shall be explicitly specified in the user manuals or instructions pursuant to the Section 15.27.

In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

**END**