

# **TPAD10M RFID Pad Reader**

## **User Manual**

- ◆ Before you use this product, please carefully read this manual, and properly keep it for future reference.
- ◆ As our products continue improving, they may be changed without advanced notice.
- ◆ The contents of this manual have been carefully checked. For any printing error or misunderstanding content, please contact us as soon as possible.

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# 1. Product Overview

## 1.1. Product Introduction

TPAD10M is a RFID reader-writer machine that is specially designed for self-checkout and check-in, book sorter and production lines. It has the super anti-interference ability of reading and writing. The product uses a metal shielding design, so they can be installed in metal environment and not affected by the metal at the bottom and around.

It can be widely used in book/file management, jewelry inventory, medicine management, store counter settlement and other fields.

## 1.2. Product Features

- Support ISO15693, ISO18000-3M1, ISO14443A, ISO18000-3M3 standard.
- RF power: 0.2W.
- Anti-metal design, which allows the product to be embedded in metal -surrounding environment without impact on the performance.
- Fast anti-collision processing algorithm; the reading speed is up to 50pcs / sec.
- Reading and writing distance: 15 ~ 24CM; (This distance is related to the size of the card).
- Automatically turn off RF during idle time.
- Integrated design, embedded in reading and writing module and antennas.
- Communication interface: USB.

## 1.3. Pictures



## 1.4. Main Parameter

Table 1 Description of main technical parameters of the product

Parameters	Description
Operating Frequency	13.56MHz
Support Standard	ISO15693, ISO14443A, ISO18000-3M1 ISO18000-3M3
RF Power	0.2W
Communication Interface	USB
Recognition Distance	ISO 14443A: 15cm ISO 15693: 24cm
Range Of Reading Within Agreed Area	≤1cm
Voltage	5VDC (USB powered)
Maximum Power Consumption	1W
Metal Shielding Design	Yes
Shell Material	PCB and metal plate
Dimensions	379.5*290*20.7mm
Maximum Operating Temperature	50℃

### ❗ Tips

- ① Dimensions are approximate. For specific dimension, please refer to the real object;
- ② As our products continue improving, technical parameters may be changed without advanced notice.

## 2. Product Structure

### 2.1. Product Appearance

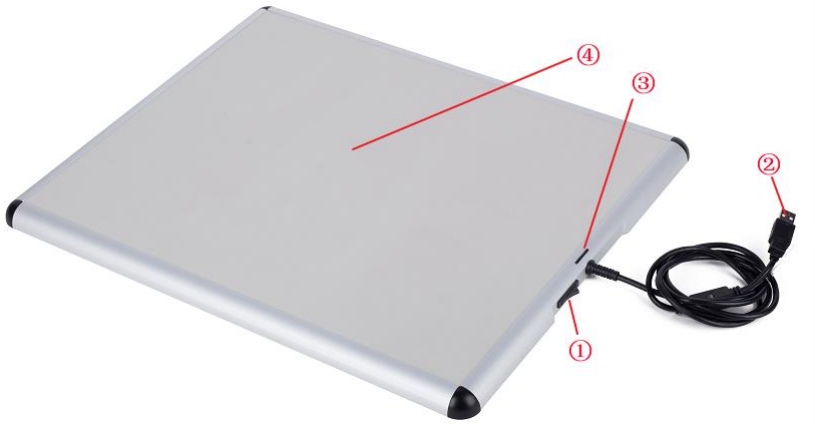


Figure 1 Product appearance description

Table 2 Product appearance description

No.	Description
①	Power switch
②	USB interface
③	LED indicator
④	Sensing area

## 2.2. Product Dimensions

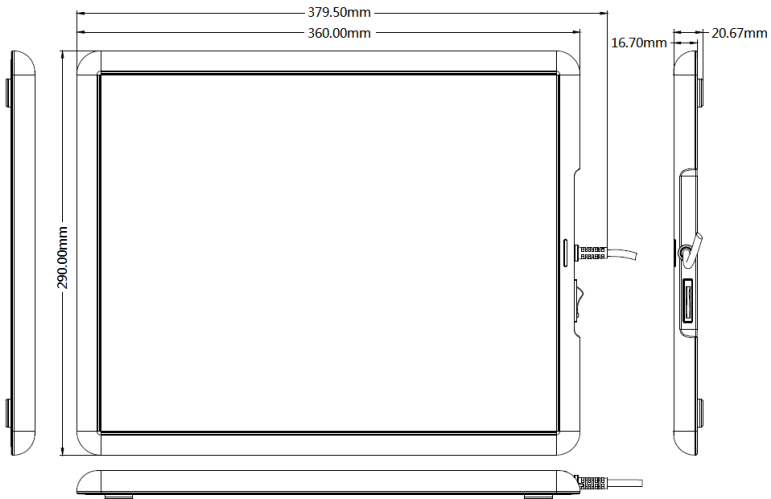


Figure 2 Product dimension

## 2.3. Hardware Interface Description

## 2.4. Communication Interface

Communication interface of the device adopts USB interface, and it can connect directly through the computer USB interface. as shown below:



Figure 3 USB communication interface

## 2.5. Power Switch

This device is equipped with a power switch button , as shown below:



Figure 4 Power switch

### 3. Device Connection

The device is connected to the PC via a USB communication interface, and power is supplied via USB without additional power supply:

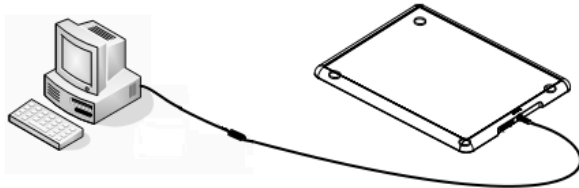


Figure 5 Connect via the device's own USB cable

### 4. Description Of Indicator Light




Figure 6 Indicator light

Table 3 Description of indicator light

Status	Function Description
LED 1	The device is powered on normally when the red light flashes.
LED 2	The device detects an RFID tag or card when the blue light is on

## 5. Instructions Of Configuration Tools

Please refer to Section 3 "Device Connection" to connect the device.

After the device is connected, press the power button. When making sure that the device is normally powered by observing state of the LED, open the testing tool "R-Tool "folder, and find the file  **R-Tool** in the folder directory. Double-click the file to open the test tool, as shown below:

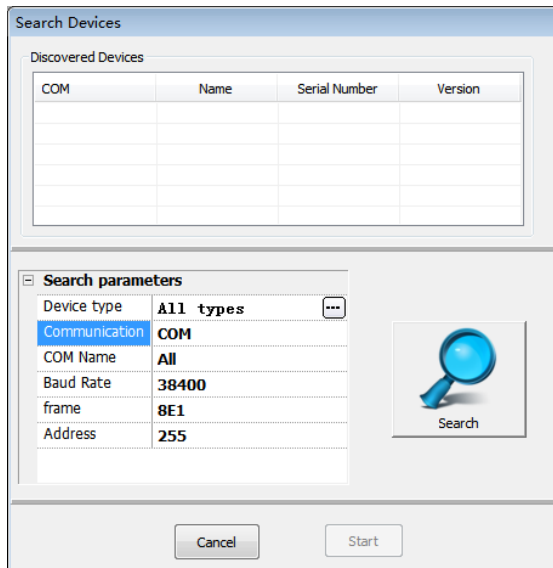


Figure 7 R-Tool connection interface

Select the corresponding communication method according to the actual interface type used by the device.



Since the communication interface of the device is a USB interface, select "USB Communication" in [Communication Interface] under [Search Parameters]. click the [Search] button to find the device. When the device is found, the device information will be automatically displayed in the "Discovered Devices" list as follows:

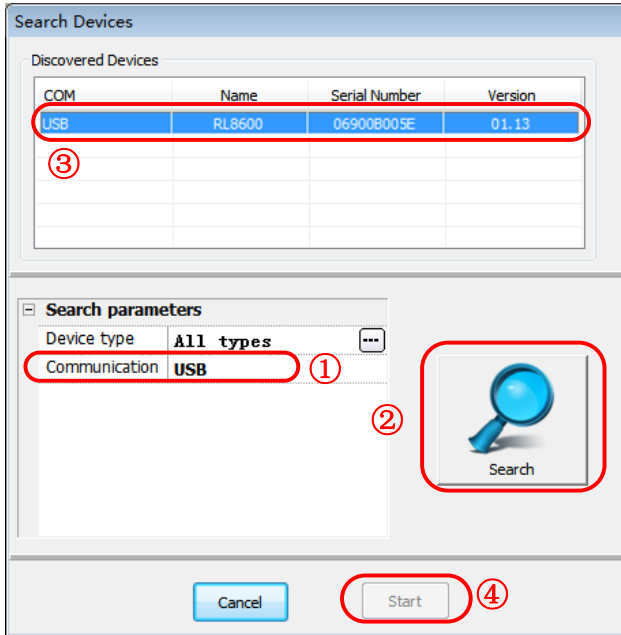


Figure 8 Connection steps

As shown above (Step ④), click the "Start" button to enter the main interface of the test software.

## 5.1. Configuration Description Of Parameters

After the software and the device are successfully connected, enter the configuration interface and click parameter configuration to configure the interface data, RF parameters, inventory parameters, working mode and other parameters of the device:

**Note: All changed configuration parameters must be saved by clicking [Write] button and then clicking [Save] button. Otherwise, the setting is invalid.**

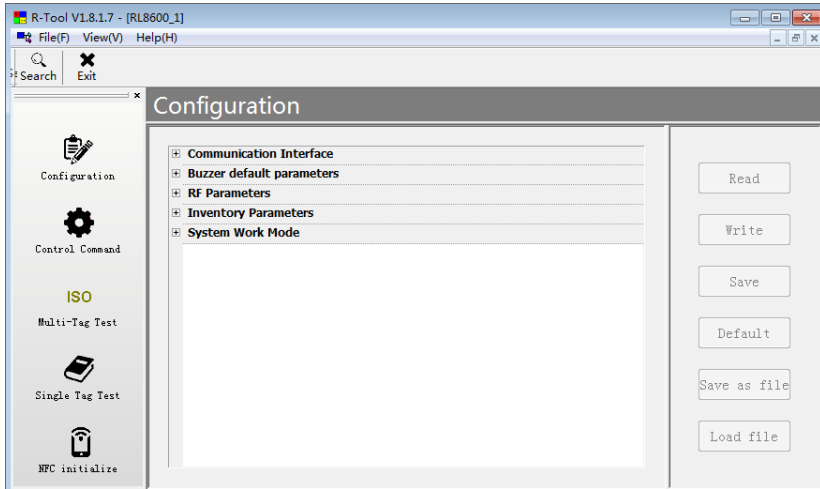


Figure 9 Parameter configuration interface

### 5.1.1. Communication Interface

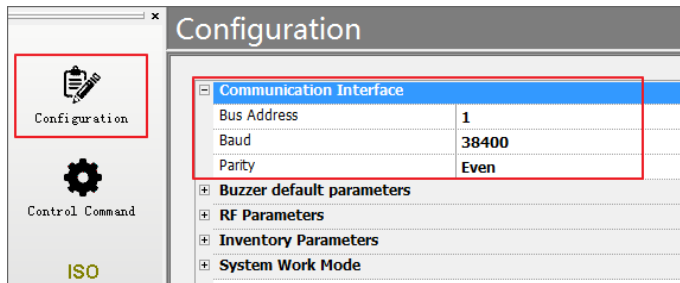


Figure 10 Configuration interface for communication interface

- **Bus address:** between 1-255
- **Baud Rate:** 9600, 19200, 38400, 57600, 115200, 230400
- **Parity check type:** None, Odd, Even

### 5.1.2. Buzzer Default Parameters

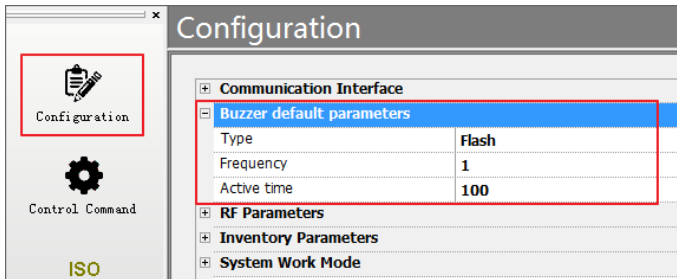


Figure 11 Configuration interface for buzzer default parameters

- **Type:** Unchanged, On, Off, Flash.
- **Frequency:** value range from 0 to 255, only applicable for the Flash type.
- **Active time:** the frequency of buzzer, only applicable for the Flash type.

### 5.1.3. RF Parameters

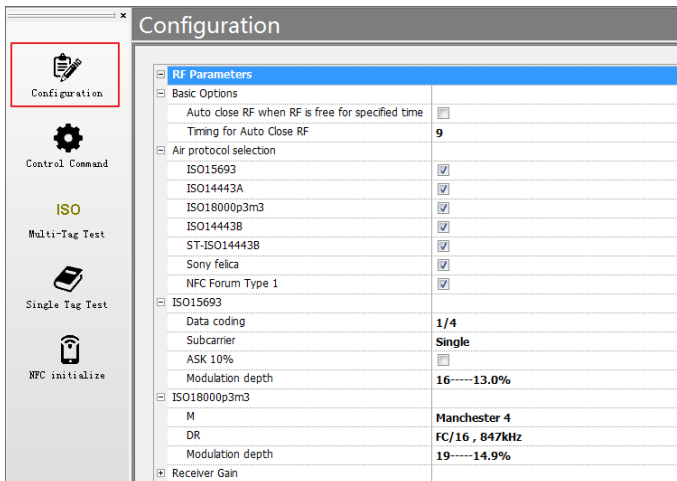


Figure 12 Configuration interface for RF parameters

- **Basic options**
  - 1)Auto close RF when RF is free for specified time: In the host control mode, the device will automatically close the RF if it does not receive a command of card reading or opening the RF.

2)Timing for Auto Close RF: Value range: 0-256, the RF enters the idle mode if no operation in a specified time.

- **Air protocol selection**

- 1) ISO15693: Enable to count tags of ISO15693 air protocol.
- 2) ISO14443A: Enable to count tags of ISO14443A air protocol.
- 3) ISO18000p3m3: Enable to count tags of ISO18000p3m3 air protocol.
- 4) ISO14443B: Enable to count tags of ISO14443B air protocol.

- **ISO15693**

- 1) Data coding: 1/4, 1/256.
- 2) Subcarrier: single negative carrier, double negative carrier.
- 3) ASK 10%: ASK modulation depth setting takes effect after the button is ticked. Otherwise, it is ASK 100%.
- 4) ASK modulation depth: 0.5% -60%

- **ISO18000p3m3**

- 1)M: Manchester 2,Manchester 4
- 2) DR:FC/16847khz, FC/32424khz
- 3) Modulation depth:0.5%-29%

## 5.1.4.Inventory Parameters

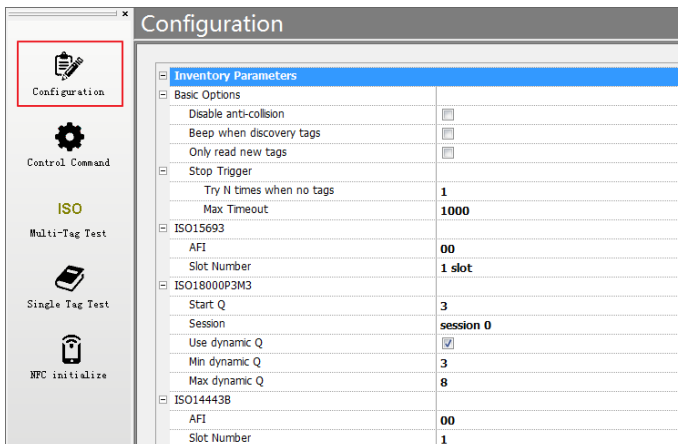


Figure 13 Configuration interface for inventory parameters

- **Basic options**

- 1) Disable anti-collision: whether to turn off anti-collision function.
- 2) Beep when discovery tags: set whether the buzzer buzzes when the tag is detected.
- 3) Only read new tags: each tag is only read once, when it does not leave the antenna sensing area.
- 4) Stop Trigger  
Try N times when no tags: set the number of attempts if no new tags are found.  
Max Timeout: set the time of stopping trigger due to timeout.

- **ISO15693**

- 1) AFI: 00-FF.Note: 00 means not to enable.
- 2)Slot Number: 1 Slot, 16 Slot.

- **ISO18000p3m3**

- 1) Start Q:0-15.
- 2) Session: session 0, session 2.
- 3) Use dynamic Q:whether to enable dynamic Q value.
- 4) Min dynamic Q: set the minimum dynamic Q value.
- 5) Max dynamic Q: set the maximum dynamic Q value.

- **ISO14443B**

- 1) AFI: 00-FF.Note: 00 means not to enable.
- 2) Slot Number: 1,2,4,8,16.

## 5.1.5. System Work Mode

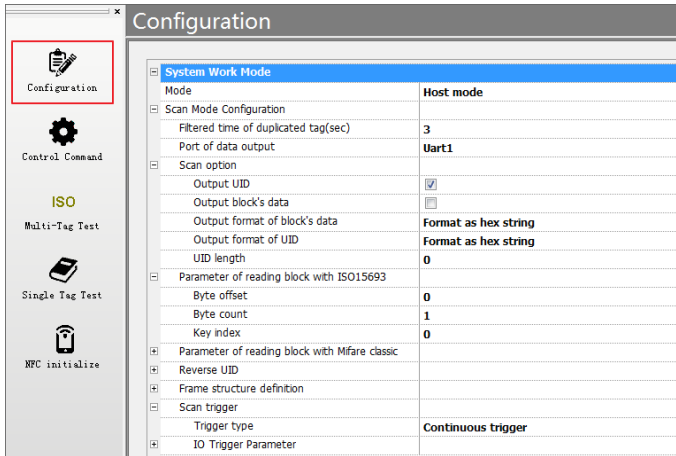


Figure 14 Configuration interface for system work mode

- **Mode:**

- 1) Host mode: the host software needs to send commands.
- 2) Scan mode: the inventory can be automatically completed, even if the host software does not send commands; scan setting in the scan mode should be configured in advance.

- **Scan Mode Configuration:**

- 1) Filtered time of duplicated tag(sec): The tag can only be counted again after leaving for the specified time.
- 2) Port of data output: Uart1 output, USBHID output, virtual keyboard output, Wiegand 26, Wiegand 34.
- 3) Scan option
  - ① Output UID: output the tag UID.
  - ② Output block's data: output the content of the data block (not including the security status byte).
  - ③ Output format of block's data:
    - A. Format as hex string.
    - B. Format as ASCII.

- ④ Output format of UID:
  - A. Format as hex string.
  - B. Format as LSB 3 bytes convert to integer string.
  - C. Format as LSB 4 bytes convert to integer string.
  - D. Format as compliant with Wiegand.
  - E. Format as compliant with Wiegand fix 8 bytes.
- ⑤ UID length: 0-8, 0 for unlimited length, output of a complete UID.
- 4) Parameter of reading block with ISO15693
  - Byte offset: The offset of the first byte to be read.
  - Byte count: The number of bytes to be read.

**Note: The above configuration is a common configuration, if you need to set other configuration information, please consult our engineers to configure.**

## 5.2. Testing

### 5.2.1. Multi-tags Inventory Testing

After entering the main interface of R-Tool test software, select "ISO Multi-Tag Test", carry out the procedure as shown in the following figure ①, ② and ③ for tags inventory test:

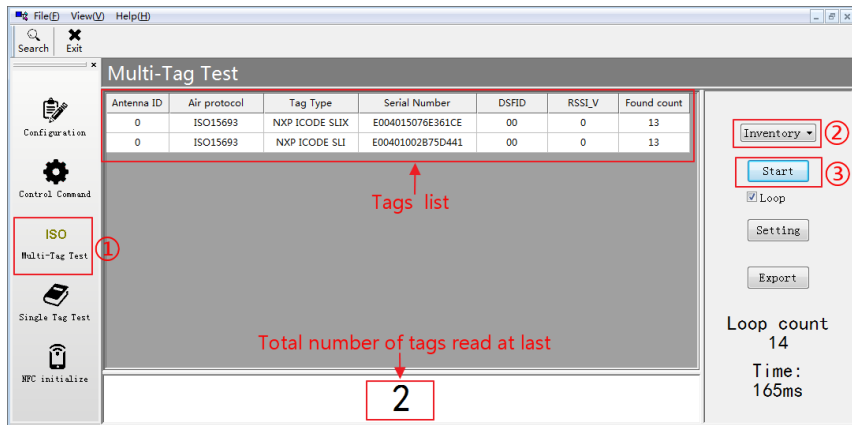


Figure 15 Multi-Tag inventory test steps

**Note:**

- Step 1: Select the menu "ISO Multi-Tag Test" in the main interface of the software;  
 Step 2: Select the "Inventory" in the drop-down list above the "Start" button;  
 Step 3: Click the "Start" button to carry out the inventory testing.

## 5.2.2. Single Tag Operation Testing

After entering the main interface of R-Tool test software, select " Single Tag Test" , carry out the procedure as shown in the following figure ①,②, ③, ④ and ⑤ for tags test:

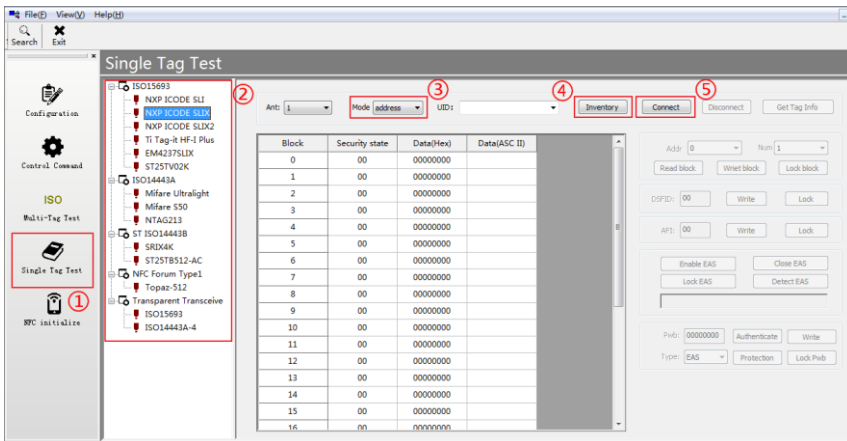


Figure 16 Single tag operation test steps

**Note:**

- Step 1: In the software main interface, select the menu "Single Tag Test";  
 Step 2: In the "Single Tag Test" interface, select the type of tag to be operated;  
 Step 3: mode: none address, address.  
     1) For a single tag, select the "none address" mode.  
     2) For multiple tags, select the "address" mode.  
 Step 4: Click the "Inventory" to display the UID list in UID drop-down box.  
 Step 5: 1) For a single tag: click the "Connect" button;  
         2) For multiple tags: in UID drop-down box, select the tags required to be operated, and then click the "Connect" button;



After the above steps, you can read and write tags, as shown below:

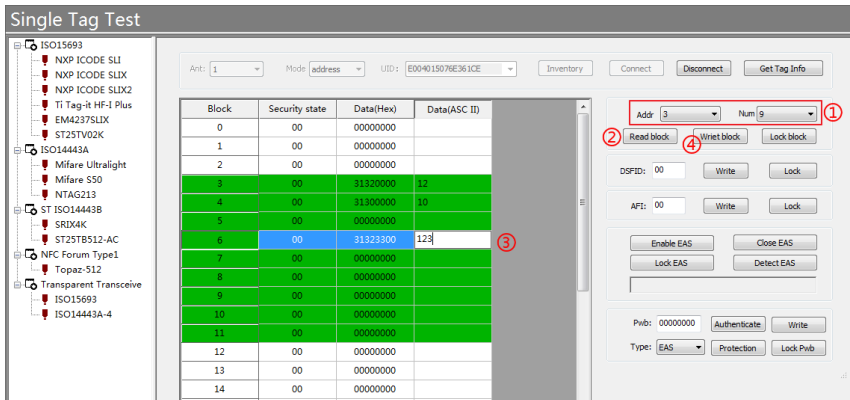


Figure 17 Single tag reading and writing steps

### Steps:

- 1) Set the data block of the tag to be operated in the Addr drop-down box and the Num drop-down box. After setting, the operable data block is displayed in green indicating that it can be operated;
- 2) Click [Read Block] to read the data value of the data block selected in step 1;
- 3) Write the value in the line (green area) of the data block whose value should be written, and then click [Write Block];
- 4) After the operation is completed, click the [Disconnect] button to disconnect the tag connection.

## 6. Technical Support

### ➤ Download link for development data and testing

<https://www.gzandea.com/download.php>

### ➤ Call for equipment debugging and technical support

Mobile phone: 138 0251 4535

Fixed telephone: 0086-20-32039552

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

This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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.



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