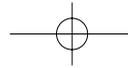


# *Driver Installation for Fingerprint Sensors*

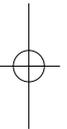
DC1-0011A Rev D





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# Chapter 1

## Before You Begin

- Features
- Typical Applications
- System Requirements
- Package Contents
- Product Types



## Features

The NITGEN FRD (Fingerprint Recognition Device) is a world class fingerprint device that uses state-of-the-art technology, to facilitate biometric authentication of a user's fingerprint using a combination of quality hardware and software that is convenient and easy to use.

The FRD is equipped with high-performance and compact NITGEN fingerprint recognition module, which can transfer data to computers to reject any unauthorized user's access.

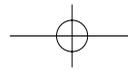
NITGEN FRD will provide the most reliable authentication by identifying fingerprints with exactness through its high-resolution fingerprint recognition technology that can be used to replace existing password-based security systems. NITGEN FRD is the security device for the next generation, where the security of personal data as well as corporate data is indispensable.

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## Typical Applications

Some typical applications for fingerprint authentication technology are as follows:

- Information Technology and Computer Network Security
- Internet Business
- Security for Banking and Financial System
- Medical Information Systems
- Further Security Field using Passwords



## System Requirements

System requirements for FRD are as follows;

### ⓄUSB Type

- CD-ROM drive
- USB port (If you are connecting the FRD Fingkey Mouse into a hub, you must use a self powered USB hub)
- 16MB RAM
- 20MB available hard disk space
- MS Windows 98 (Second Edition or later version) / ME / 2000 / XP

### ⓄParallel Type

- CD-ROM drive
- Parallel port (EPP, ECP, SPP - EPP mode recommended)
- PS/2 port(Mouse port)
- 16MB RAM
- 20MB available hard disk space
- MS Windows 95 / 98 / ME / NT4.0 / 2000 / XP

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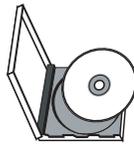
## Package Contents

FRD Kits include the following ; Please check the contents of your package.

### ⓄUSB Type Fingerprint Recognition Fingkey Mouse (MFDU01)



MFDU01



Installation CD

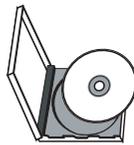


Installation Guide

### ⓄUSB Type Fingerprint Recognition Fingkey Hamster (HFDU01)



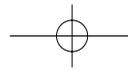
HFDU01



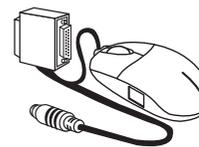
Installation CD



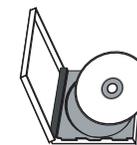
Installation Guide



### ⓄParallel Type Fingerprint Recognition Fingkey Mouse (MFDP02)



MFDP02

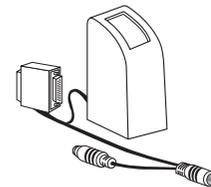


Installation CD

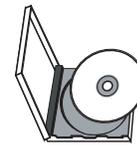


Installation Guide

### ⓄParallel Type Fingerprint Recognition Fingkey Hamster (HFDP02)



HFDP02



Installation CD



Installation Guide

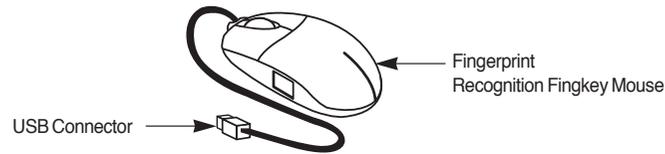
## Product Types

It is important to know the type of FRD you are installing prior to beginning the installation process in order to ensure that the device is configured correctly on your system. If you are not certain, please refer to the diagrams below or locate the model number on the bottom of the fingerprint device.

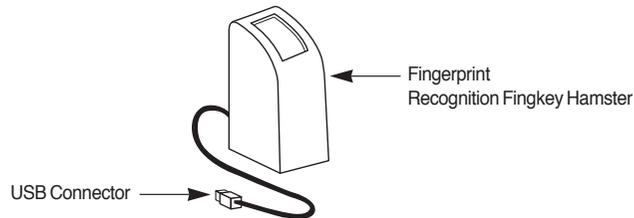
After you have identified the type of FRD that you are installing, follow the installation guide to install the drivers and use the FRD.

### 1. USB Type Fingerprint Recognition Fingkey Mouse (MFDU01)

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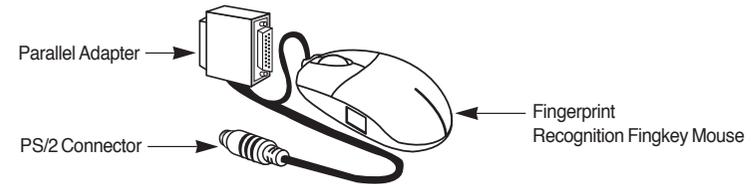


### 2. USB Type Fingerprint Recognition Fingkey Hamster (HFDU01)

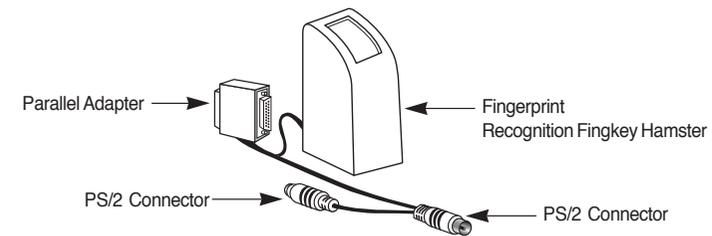


### 3. Parallel Type Fingerprint Recognition Fingkey Mouse (MFDP02)

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### 4. Parallel Type Fingerprint Recognition Fingkey Hamster (HFDP02)



# Chapter 2

## Driver Installation

- USB Driver Installation
- Parallel Driver Installation



## USB Driver Installation

### Note

If you are installing the USB Fingkey Mouse in the Windows 98 environment, the Windows 98 Installation CD will be required if there are no Human Interface Device (HID) drivers installed on your system.

1. Prior to beginning the installation, please close all applications that are running.
2. Do not plug in the USB FRD until after the drivers have been installed on your system.
3. Insert the Installation CD in your CD-ROM drive. The installation program will start automatically. Click 'USB Driver' to continue.

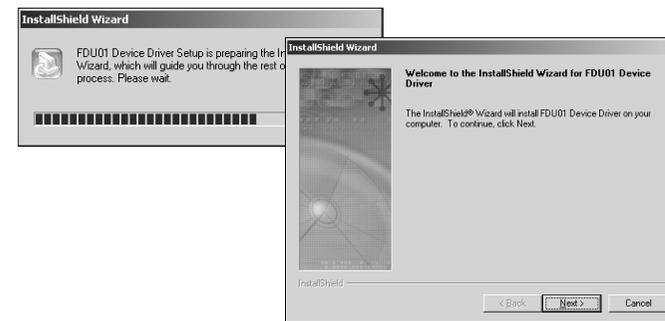
14



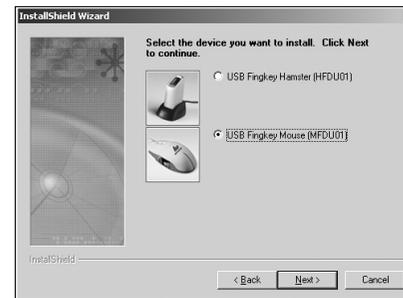
### Note

The USB FRD Fingkey Mouse will be enabled after the driver is installed, so it may be necessary to install the driver using a PS/2 mouse or the <Tab> key on the keyboard.

4. Follow the instructions presented by the InstallShield Wizard during the driver installation process..



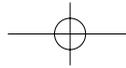
5. Select the device you are using and click "Next".



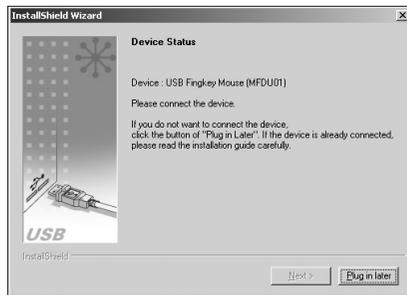
### Note

These examples in this guide are based on selection of the USB Fingkey Mouse (MFDU01) as an example.

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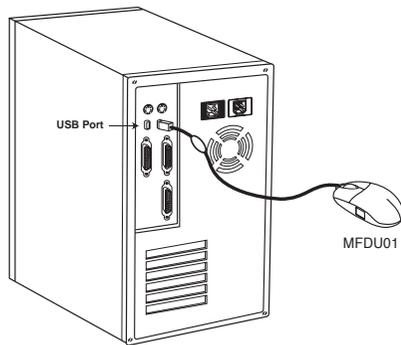


6. When driver installation is completed, it is necessary to check the device status to ensure that it was installed correctly. You will be prompted to connect the USB FRD as shown in the diagram below :

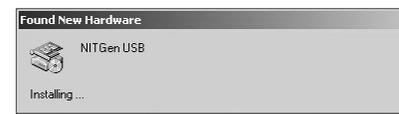


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7. Connect the FRD to the USB port, and wait a moment. You can also click "Install later" to install it at a later time.



8. The New Hardware Installation Wizard will automatically show you the process of installing USB Composite, HID and FRD drivers. If you are installing a USB Fingkey Hamster, only the FRD driver will be installed.

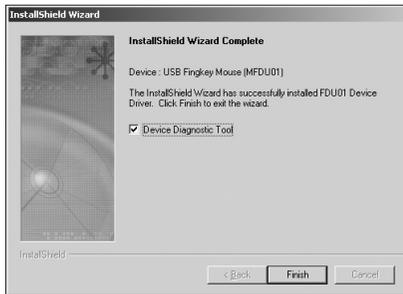


9. When the device installation process is completed, a window will be displayed indicating that "The installation was completed successfully." Click the "Next" button.



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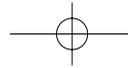
10. Check the 'Device Diagnostic Tool' check box and click "Finish". At this time the installation process will be completed, and the hardware test utility will be run automatically.



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**Note**

Refer to Chapter 3 'How to use the Device Diagnostic Tool' for more information on using device diagnostic tool to ensure that the FRD is successfully installed.



## Parallel Driver Installation

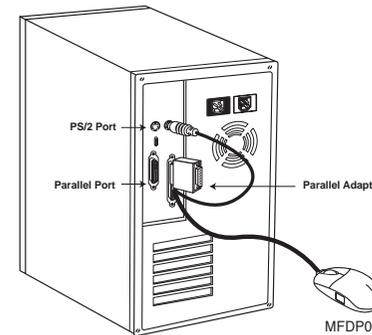


**Note**

### To connect Parallel type FRD

If you are installing a parallel port FRD, you must connect the FRD to your computer before powering up the computer.

1. Turn off the computer.
2. Connect the PS/2 Connector of the FRD into the PS/2 port of your computer.
3. Connect the parallel adapter of the FRD to the parallel port(printer port) on your computer.  
If you are using printer, connect the printer cable to the back of the parallel adapter of the FRD.



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**Note**

### Set the parallel port to EPP, SPP or ECP mode,

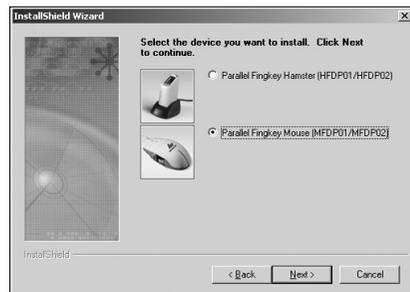
When you restart your computer, enter the BIOS setup utility to configure the parallel port. EPP mode is recommended. Refer to the computer documentation for specific instructions about configuring your system. The FRD will not function correctly if the EPP mode uses the base address of 0x3BC.

- Turn on your computer when parallel port and PS/2 port are all connected.
- Insert the Installation CD in your CD-ROM drive. The installation program will start automatically. Click 'Parallel Driver' to continue.



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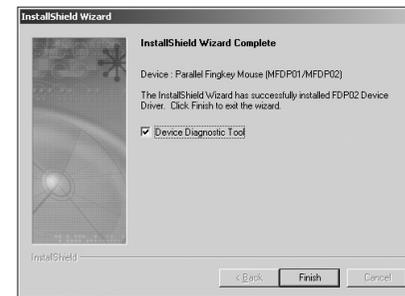
- The installation program will be launched automatically the following InstallShield Wizard will be displayed. Select the device you are installing and click "Next" to continue.



**Note**

This guide is based on the selection of the Parallel Fingkey Mouse (MFDP02) as an example.

- Check the 'Device Diagnostic Tool' and click "Finish". At this time the installation process will be completed, and the hardware test utility will be run automatically.



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**Note**

Refer to Chapter 3 'How to use the Device Diagnostic Tool' for more information on using device diagnostic tool to ensure that the FRD is successfully installed.

# Chapter 3

## How To Use The Device Diagnostic Tool

- Running the Diagnostic Tool
- Checking the System Status
- Capturing Fingerprint Images
- Adjusting the Brightness and Contrast
- Others



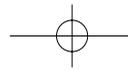
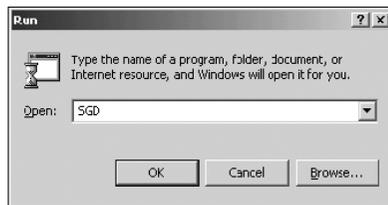
## Running the Diagnostic Tool

1. Click Start-Run to run the testing program.



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2. Type 'SGD' and click "OK".



## Checking The System Status

1. Select the "General" tab to view device status



1. Driver Installed status.

- When the "Parallel" check box is selected, the parallel type device driver is installed
- When the 'USB' check box is selected, the USB type device driver is installed
- When both check boxes are selected, both drivers are installed

2. Parallel Device Status

Device status is only visible after the parallel driver has been initialized. After initialization, printer port status of the port to which the device is connected will be displayed.

3. USB Device Status

USB device status is only visible when the USB driver is installed. Version and type of the USB device connected into your system will be displayed.



### Smart Capture Function

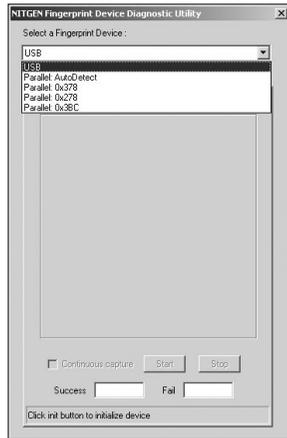
The function is upgrading image quality for dry and wet fingerprint. When it is used, "Auto Adjust" will be disable.

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## Capturing Fingerprint Images

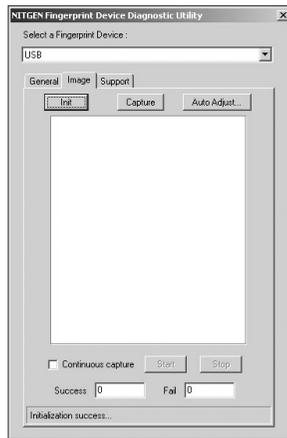
☉ Select the "Image" tab to capture fingerprint images.

1. Select the device you are going to use from the 'Select a Fingerprint Device' list box.



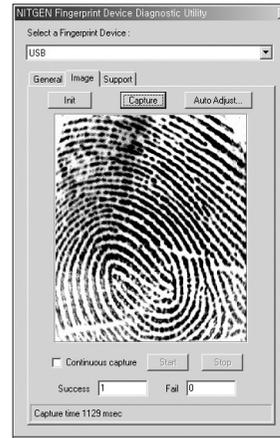
26

2. Click "Init" to initialize the device. The result of the initialization process will be displayed on the status bar.



3. Click "Capture" to capture fingerprint images.

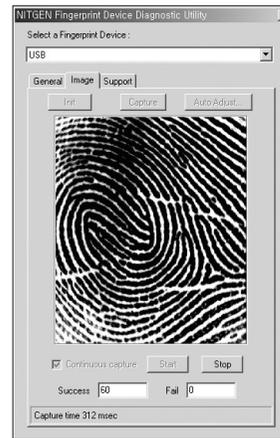
The fingerprint sensor will begin flashing 'Red' indicating that it is waiting for a fingerprint. Place your finger on the sensor.

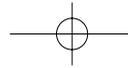


27

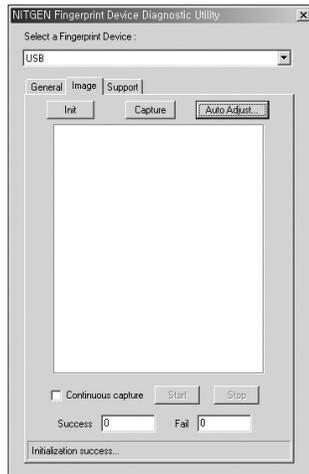
4. Choose 'Continuous capture' and click "Start" to capture images continuously. You can see the information on the Status Bar.

Click "Stop" to stop continuous capture.

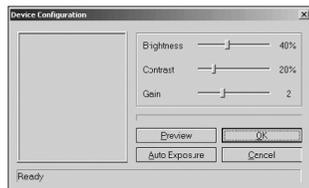




## Adjusting the Brightness and Contrast



1. Click "Auto Adjust" to tune the fingerprint image. The Device Configuration window will be displayed. Use this window to tune the device by adjusting Brightness, Contrast and Gain values.



2. Click "Preview" to see the fingerprint image(s) you have captured. When the images are too bright, adjust Brightness or Contrast. If the images are still too bright, you can adjust the Gain setting by degrees.

Parallel type FRD (FDP02) doesn't support the Gain adjustment.



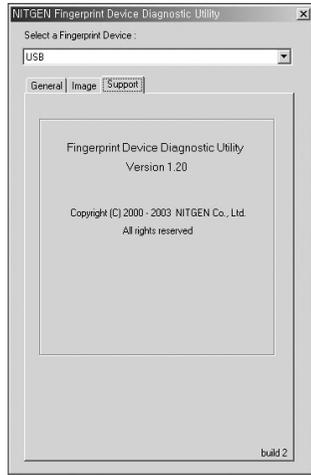
3. Click "Cancel" to revert to the previous settings. Click "OK" to apply the new settings.



4. Click "Auto Exposure" to determine the optimal configuration automatically.

# Fingerprint Sensors

## Others



Select the 'Support' Tab to see the version of the diagnostic utility.

# Chapter 4

## Troubleshooting

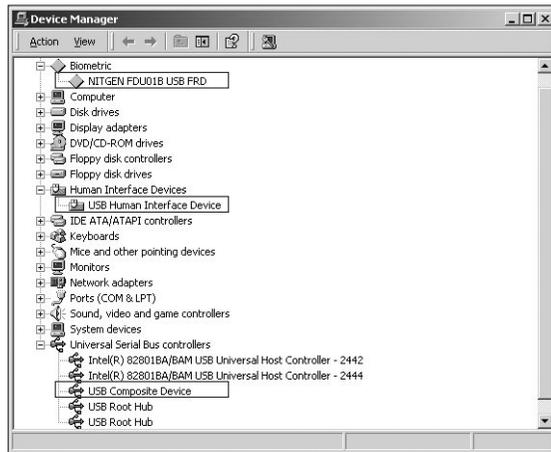
- USB FRD Problems
- Parallel FRD Problems
- Driver Installation without Installshield wizard



## USB FRD Problems

### ☉ When the USB FRD doesn't work

1. Verify that the USB Connector of FRD is connected to the USB port correctly.
2. Click Start-Setting-Control Panel-System icon and select the 'Device Manager' tab to verify that the Fingkey Mouse driver is installed correctly. If it is not installed correctly as shown below, repeat the installation process and be sure to select the USB Fingkey Mouse.



3. If you are using the FRD connected to a USB port in a USB keyboard or Hub, verify that the USB keyboard or Hub has its own power-supply. The USB FRD uses almost 110mA of electric power, so it should only be connected to hubs that are self powered.

### ☉ When you use the FRD with any other high-speed USB devices

1. When the FRD is connected on your computer together with any other high-speed USB devices such as USB Camera or USB Scanner etc., it cannot be used at the same time as these devices. Close the programs that are using these devices before using the FRD.
2. Because the FRD is a high-speed USB device and uses almost 66% of your system USB limit, the USB device will not function concurrently with any other device using more than 40% of the USB bandwidth.

### ☉ When any other mouse driver is installed on your computer

1. When the Logitech mouse driver is installed on your computer, FRD Fingkey Mouse performance is very slow.
2. Click Start-Setting-Control Panel-Mouse icon and "Motion" tab to adjust the speed of mouse pointer.
3. If you cannot adjust the speed of mouse pointer, remove the existing Logitech mouse driver to use FRD.

## Parallel FRD Problems

### Changing the BIOS Setup



When you are to use Parallel type FRD, the parallel port mode should be set to ECP/EPP/SPP. If using EPP mode, do not use a Base Address of 0x3BC.

1. To verify the parallel port configuration on your system BIOS SETUP screen, press <Delete> or <F2> key when you start your computer. Refer to your computer manufacturer's operating manual for instructions on configuring the parallel port.
2. Choose "Printer Port Mode Setup" on the System BIOS SETUP screen. It may vary with the computer type, but is typically labeled something such as 'Integrated Peripheral' or 'I/O Device Configuration' menu.
3. Choose one of EPP, ECP or SPP Modes using the <+>, <-> or <PageUp>, <PageDown> keys. (EPP Mode is recommended.)
4. After you save the changes, your computer will restart automatically.

### When your printer doesn't work

1. Determine whether or not the FRD is initialized and running. Your printer will not work while the FRD Driver is on. Close the program that is using the FRD.
2. Remove the FRD and connect your printer directly to the parallel port. If the printer functions correctly, there may be a defect with your Fingkey Mouse device. If the printer doesn't work even without the FRD, the printer might have some problems.

### When your FRD doesn't work

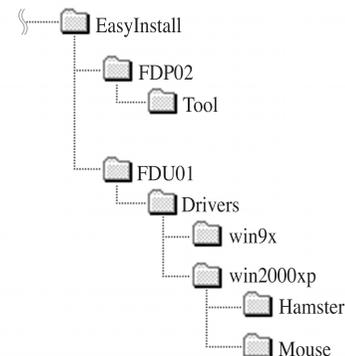
1. Verify that the parallel adapter of the FRD is connected to the parallel port correctly, and that the PS/2 connector is connected to the PS/2 port.
2. Confirm the parallel mode in BIOS SETUP of your system. When you are using the Parallel port FRD, the parallel port mode should be set to ECP/EPP/SPP. If you are using EPP, verify that the base address is not 0x3BC.

### When your Fingkey Mouse doesn't work

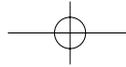
1. If the Fingkey Mouse is not functioning correctly, power down the computer and remove the parallel adapter, but leave the PS/2 connector in place. Reboot the system and try again.

## Driver Installation without Installshield wizard

1. After select suitable O/S out of Win9x and Win2000/XP through the channel of EasyInstall\FDU01\Driver, Install it by using FPUSB.inf in the folder or sub folder of device.



Check if the folder structure is changed. Setup.exe in the FDU01 folder is for USB type, that in the FDP02 folder is for Parallel type.



### Safety Information

FCC Part 15 : 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.

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.

