ACTiSYS

The Wireless Connectivity Expert

ACT-IR100UD-MDT

USB to IrDA® (IrLPT™ Secondary) Print Adapter

User Manual

September 3, 2010
Ver. 1.0.2.1

TABLE OF CONTENTS

The Infrared Wireless Expert

Ver. 1.0.2.1

REVISION HISTORY

Revision History		
Revision	**Date**	**Comment**
1.0	01/10/2008	Initial release
1.0.1	09/08/2009	Changed FW to IrLPT; Set factory default; baud rate fixed at 115.2k bps
1.0.2	7/19/2010	Changed to ACTiSYS generic LPT mode. Include All-in-1 driver installation and new setup package with File Receive Utility & Config utility along with all-in-1 driver.
1.0.2.1	9/3/2010	Customized for MDT

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PRECAUTIONS

To ensure trouble-free operation, please observe the following precautions:
Optical communications are easily affected by external light sources, weak batteries, transfer distance, transfer angle, etc.
Any of these conditions may cause a data transfer failure, incomplete or missing data. Make sure that the wireless interface is away from direct sunlight and other strong light source.

☐ Do not terminate arbitrarily during file transfer process between ACT-IR100UD-MDT and computers until finished. Otherwise ACT-IR100UD-MDT internal data integrity may be damaged, which is due to the violation of ACT-IR100UD-MDT.
☐ Do not expose the unit to moisture, as this will damage the internal circuitry.
☐ Do not expose the unit to extreme temperatures. It should not be placed in direct sunlight or in a closed vehicle, neither should it be placed near heaters nor other heat sources.
☐ Do not store the unit in a humid or dusty place.
☐ Use a soft, dry cloth to clean the unit. Do not use a wet cloth or any solvent.
☐ Do not drop the unit or handle the unit carelessly.

CAUTION:

☐ Never touch the pins of computer connection terminal. The internal circuits can be damaged by an Electro Static Discharge. If this device requires any servicing, use only an ACTiSYS service dealer, an ACTiSYS approved service facility, or an ACTiSYS repair service.

☐ When exchanging data with host computer, be sure the appropriate serial communication port is available and is not in conflict with other peripheral device or software.

The Infrared Wireless Expert

1. OVERVIEW

ACT-IR100UD-MDT is an IrDA® Intelligent dongle with USB interface to a host device that have Infrared communication capability for receiving and printing a file. It handles all the details regarding IrDA protocols. It creates a Virtual COM port by USB to RS232 Serial conversion device.

ACT-IR100UD-MDT provides a File Receive Utility. It stores the incoming data into a file, which can later be used for printing or other data processing. It has the option of selecting the configurable parameters and some extra features as below.

It also provides a COMSET Configuration utility for you to select baud rate and flow control, etc.

2. FEATURES

- Supports mandatory IrDA layer: IrPHY^{TM}, IrLAP^{TM}, IrLMP^{TM} and IAS^{TM}.
- Supports IrLPT^{TM} upper IrDA application layer and supports IrDA **Secondary** only.
- Supports host baud rate from 1.2 kbps to 115.2 kbps, which is changeable by configuration utility; IrDA baud rate from 9.6 kbps to 57.6 kbps, which is flexible setting by IrDA devices.
- Provides a *File Receive* utility for the following features:
  a.) Configurable options to select COM port, Time out ,Baud rate ,DSR, CTS, Location to save the file, Extention name of the receiving file, Auto File Open after received.
  b.) Start and Stop receiving.
  c.) Open to Print.
  d.) Delete the saved files.
  e.) Clear Logs.
- Virtual COM port supported through Prolific USB to Serial device. Virtual COM has Less Latency time compared with any other virtual COM port, average is 1.5 ms. The latency of a real COM port is about 0.5ms.
- Fully compliant with USB 2.0 (Full speed, 12 Mbps).
- USB chip has 256 bytes outbound buffer and 256 bytes inbound buffer.
- IrDA chip has 2048 bytes IR frame and 2048 bytes Host buffer.
- Nothing or minimum changes in user software, which are already working with ACT-IR100SD RS232 serial adapter.
- It is USB bus powered device. No need any external power supply.
- Supports Windows 2000/XP/Vista/Win7 (32-bit & 64-bit). For Mac OS, Linux and Windows-CE requirement, please contact tech-support@actisys.com.

3. PACKAGE CONTENT

ACT-IR100UD-MDT package contains the following items:

- ☐ ACT-IR100UD-MDT Adapter
- ☐ Installation CD, which includes:
  - o Quick start guide
  - o Setup installer for File Receive utility, COMSET Configuration utility and Device driver.

Ver. 1.0.2.1

ACTiSYS *The Infrared Wireless Expert*

○ User Manual

4. SYSTEM REQUIREMENT

- ☐ Windows 98/ME/2000 SP4; Win XP SP2/Vista (32 & 64 bit); Windows Server 2003/2008 (32 & 64 bit). For Windows 7 (32 & 64 bit), please use RC build 7100 or above.
- ☐ At least 256MB RAM (512MB is recommended).
- ☐ CPU Speed 1.8 GHz or above.
- ☐ USB 1.1 port (or USB 2.0).
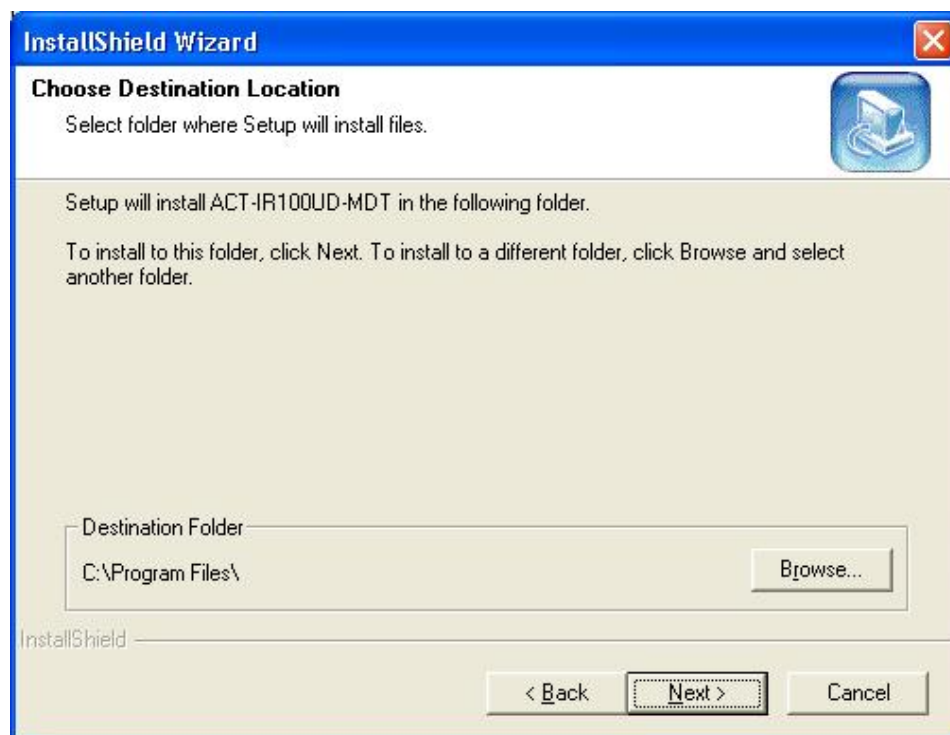
5. SETUP – UTILITIES INSTALLATION

- **Note1:** [Be Sure] ACT-IR100UD-MDT USB dongle is **NOT** plugged into PC **until** you have installed the driver.

- **Note2:** From "**Add or Remove Program"** in Control Panel of Win 98/ME/2K/XP, or from "**Programs and Features**" in **Control Panel of** Windows Vista /Win 7**,** check if "**PL-2303 USB-to-Serial**" or "**PL-2303 Vista Driver Installer**" exists. If exists, please **remove it** first.

  a.) Insert Installation CD in your PC. It will automatically start the installation for two utilities first: File Receive utility & COMSET Configuration utility.

  b.) Otherwise browse the CD and double click "**ACT-IR100UD-MDT-Setup-v1.0.2.1-100903.exe**" to start the installation.

  c.) A **Welcome** screen for ACT-IR100UD-MDT installer will show up. Click "**Next**" to continue.
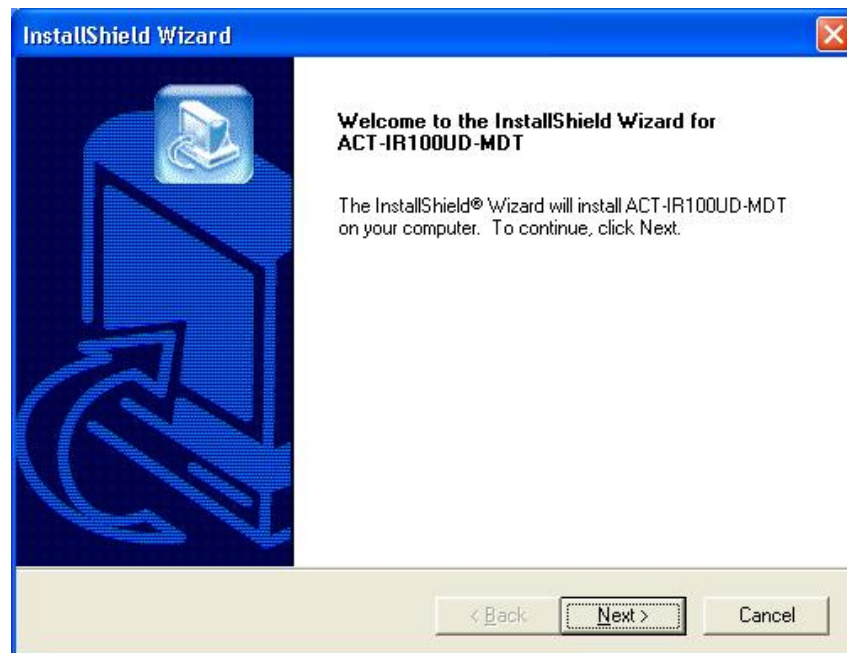
d.) A "**License Agreement**" window will show up as below. Click "**Yes**" to continue.
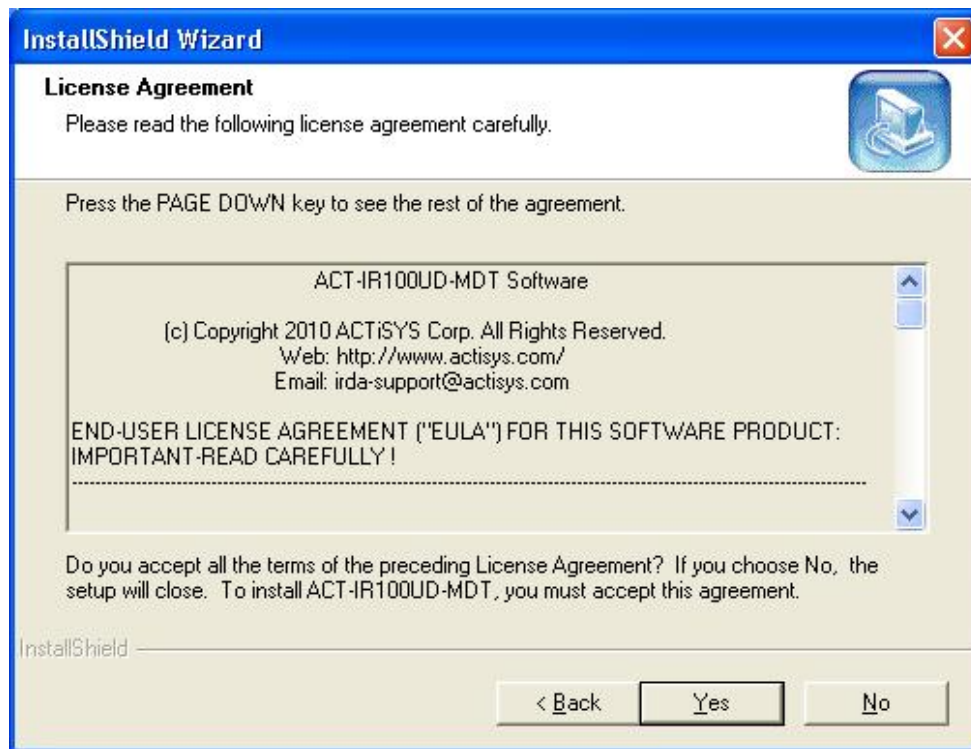
e.) **Then** a "**Choose Destination Location**" window will pop up as below. Click "**Next**" to continue.

The Infrared Wireless Expert

f.)   You will be asked to "**Select Program Folder**". Click "**Next**" to continue.

g.) Click **"Finish"** to end the first session, Utilities Installation.

Ver. 1.0.2.1

The Infrared Wireless Expert

6. DRIVER INSTALLATION

a.) After completed the Utilities Installation, **setup** will continue to install the Driver (User can also select "**ACT-IR100UD-DriverInstaller_v1210-20100408.exe**" in CD to run manually).

b.) Then a **Welcome** screen for PL-2303 Driver installer will show up. Click "**Next**" to continue.
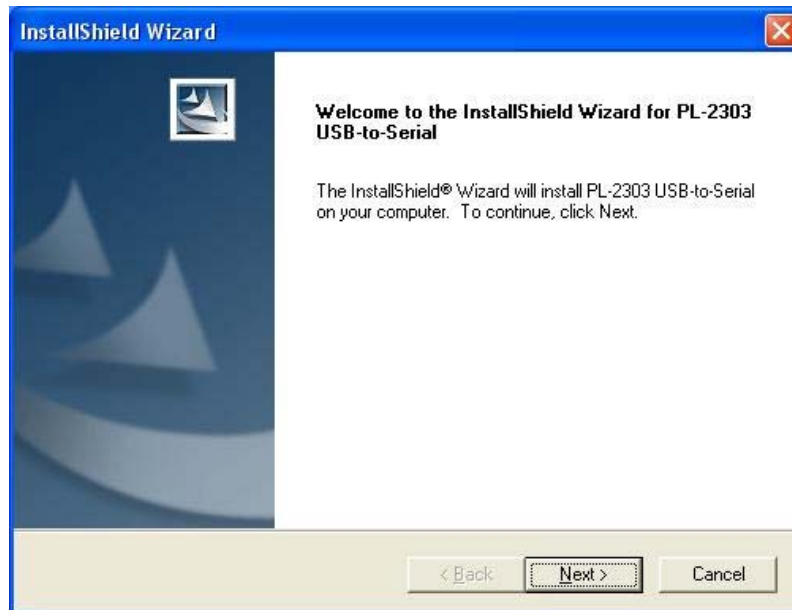
c.) When this Installation completes, click **"Finish"** to close the Wizard window.

d.) Now plug ACT-IR100UD-MDT IR adapter to USB port. System will pop up a **"Found New Hardware"** bubble window at the right corner of Tool Bar and display the message: **"Prolific USB-to-Serial Comm Port"** the first time you plug in.
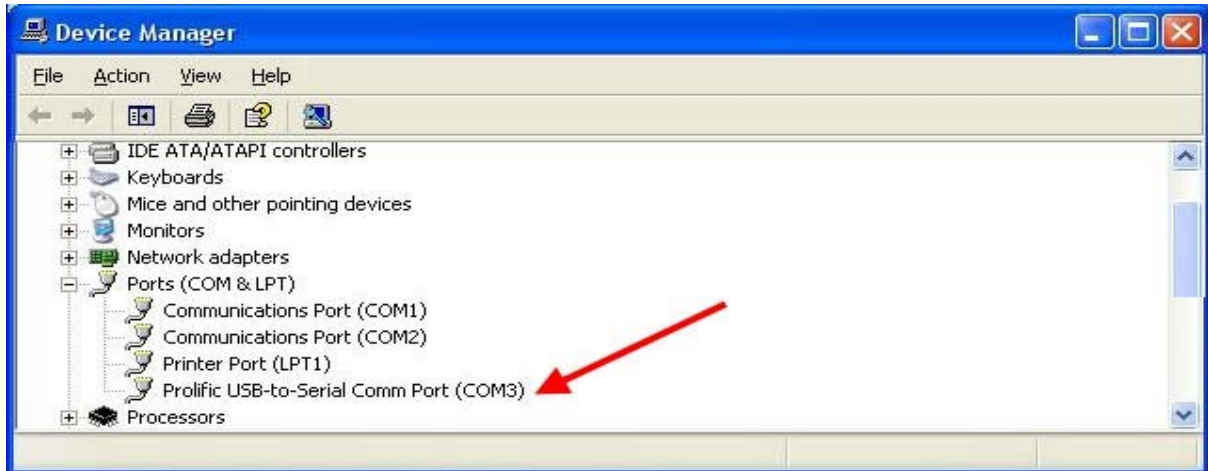

7. COM PORT CHECK

To confirm if the installation is successful, you can open **"Device Manager"**.

You will see the device described as **"Prolific USB-to-Serial Comm Port (COMx)"** installed under **"Ports (COM & LPT)"**, where COMx is the COM port number, COM3 for this example.

This is the place you can check which virtual COM port this device has been connected. See below.
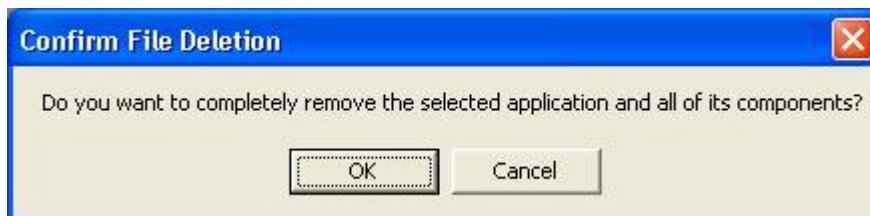
8. UTILITIES UNINSTALLATION

a.) Open **Add or Remove Programs** from **Control Panel**. select "**ACT-IR100UD-MDT**". Then click "**Change/Remove**" as below:
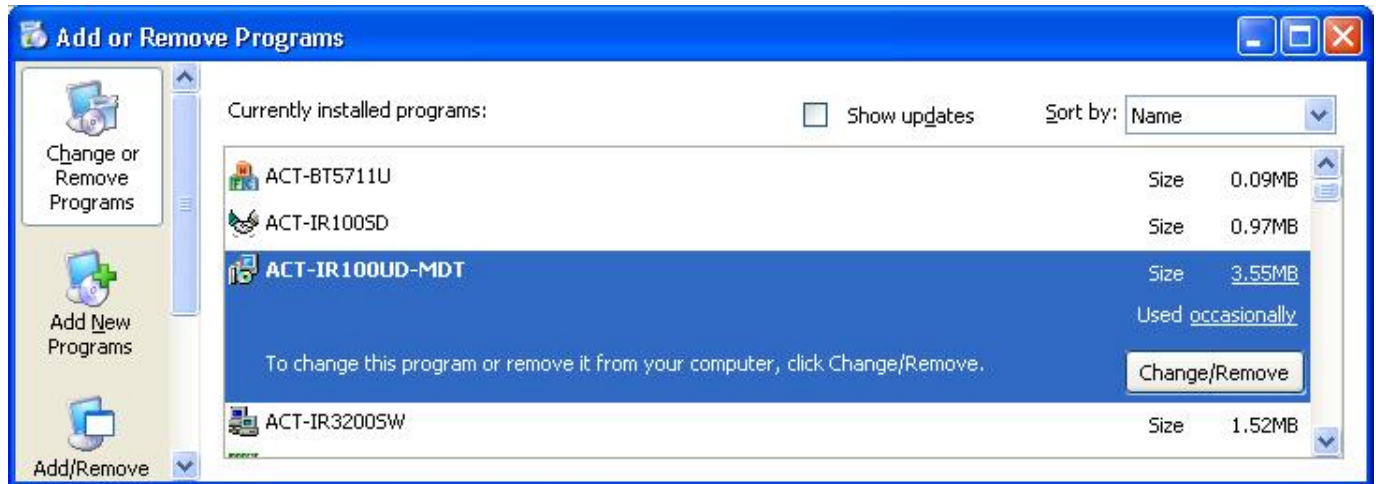
b.) It will ask you to **Confirm File Deletion**. Click "**OK**".

c.) When seeing **Maintenance Complete**, click "**Finish**".
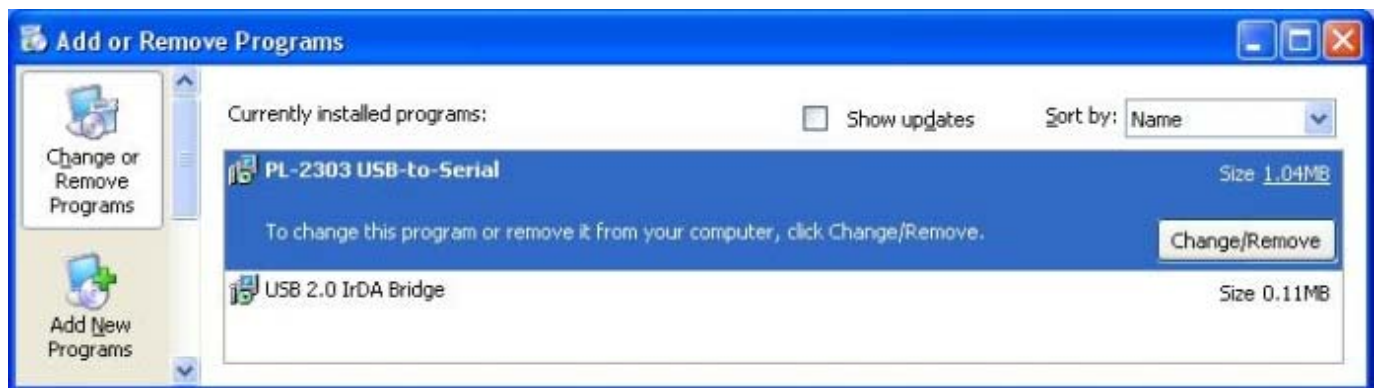
Ver. 1.0.2.1

The Infrared Wireless Expert

d.) It will then pop up a **Warning** window to remind you for uninstalling driver from **Control Panel**. Click **OK**.

9. DRIVER UNINSTALLATION

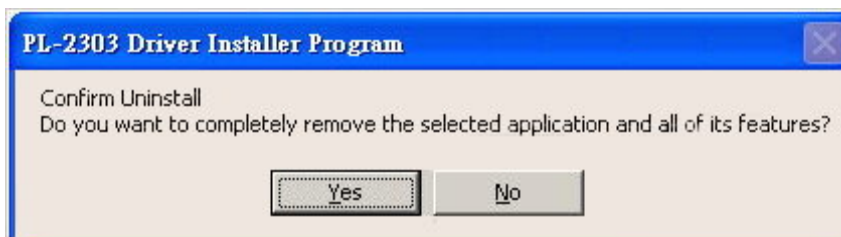1. Open "**Add or Remove Programs**" on "**Control Panel**".

2. Select "**PL-2303 USB-to-Serial**" and click "**Remove**" to remove the driver. It will pop up a **Welcome** window as below. Select "**Remove**", then click "**Next>**".
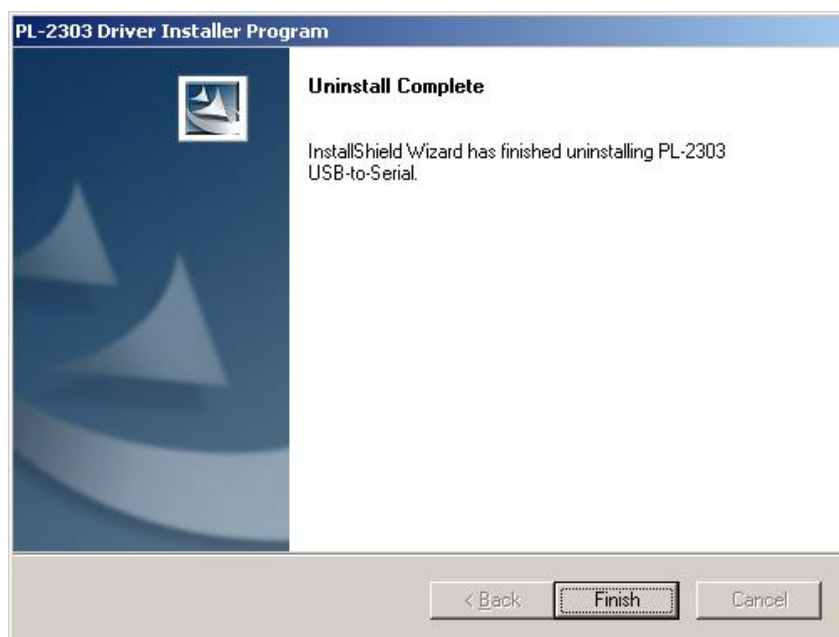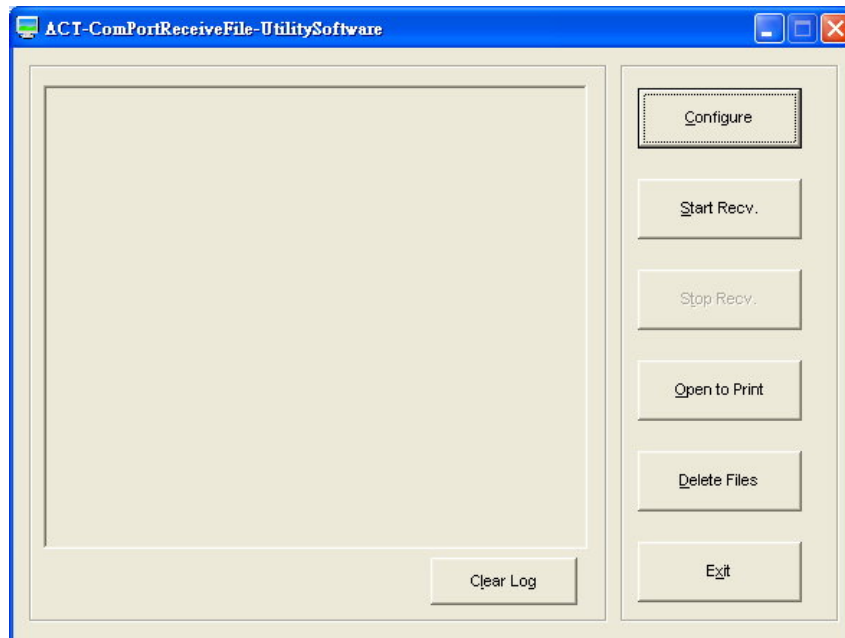
The Infrared Wireless Expert

3. It will ask you to confirm as below window. Click "**Yes**" to continue.

4. After seeing "**Uninstall Complete**" window, click **"Finish"** to close the wizard.

10. FILE RECEIVE UTILITY

10.1 [Configuration]

User can configure the following parameter as show in below figure.
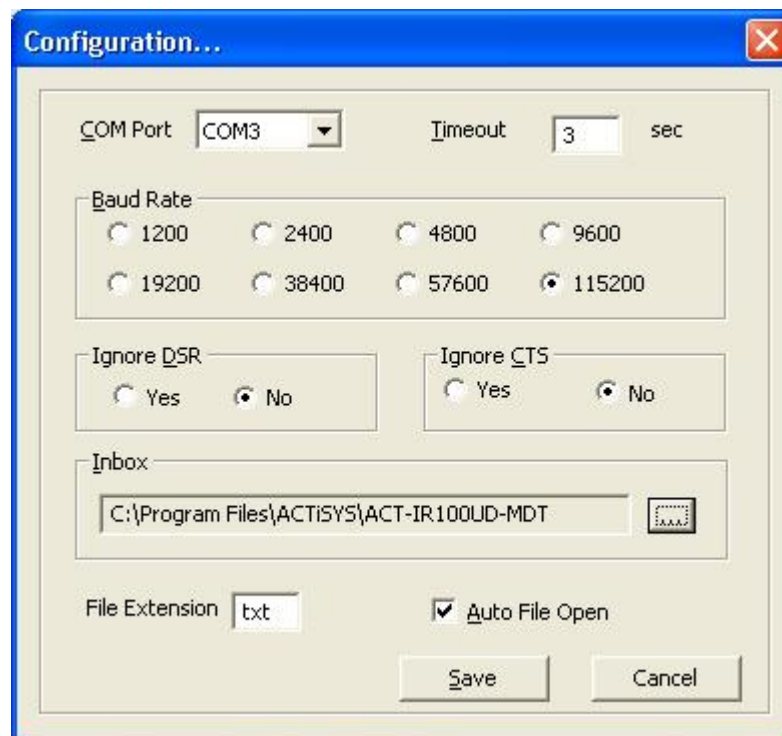
i)   Select **[COM Port]** to which the dongle is connected. (Refer to **Chapter 7 COM PORT CHECK**).

ii)   Set **[Timeout]** period. Once the data starts receiving, it will be automatically stored into a file. After the last byte received, if no further new data found within this timeout period,

then file will be closed. And a new file name will be automatically generated to store the further coming data. So this is the *time interval gap* between two consecutive receiving files.

iii) Select the **[Baud Rate]** at which the dongle communicates.

NOTE: ACT-IR100UD-MDT hardware dongle has been preset to 115.2 Kbps baud rate as its Factory Default, so you should select 115200 bps Baud Rate in this Utility. If you want to do host communication at other baud rate than 115.2 Kbps, then you must reconfigure this dongle baud rate to the same value using COMSET configuration utility as explained in Chapter 12 COMSET- COMMUNICATION PARAMETER SETTINGS.

iv) Select to enable or disable **[Ignore DSR/CTS].**

v) **[Inbox]**: Select the location where to store the received file.

NOTE: Default file stored location is **C:\Program Files\ACTISYS\ACT-IR100UD-MDT**. You can change to any other location you preferred.

vi) Select the **[File Extension]** name to be stored. File name will be generated automatically. File Extension type includes txt, pdf, jpg, etc., depending upon what the file type receiving from your opposite IrDA sender device.

vii) If **[Auto File Open]** is enabled, it will automatically open the file after successfully received.

10.2 [Start Recv]

This allows you to keep the dongle in receiving mode until you presses **[Stop Recv]** button explicitly.

10.3 [Stop Recv]

This enables the dongle to stop the receiving.

10.4 [Open to Print]

This allows you to open the just received file from this utility and print it out.

10.5 [Delete Files]

This will delete all the previously received files in the "Inbox".

10.6 [Clear Log]

Clear the logs from the display panel of this utility software.

Note: The physical log file will still be there in the Application folder where this Utility program file locates.

The Infrared Wireless Expert

11. OPERATING ACT-IR100UD-MDT

Step 1. Make sure that all installations have been done as per above chapters. Then plug in this dongle to USB. Check COM port as per **Chapter 7 COM PORT CHECK**.

Step 2. Open ACT-IR100UD-MDT File Receive Utility. Go to Start Menu >> Programs >> ACTiSYS >> ACT-IR100UD-MDT>> click on *ACT-IR100UD-MDT File Receive Utility*. It will open window as shown below.
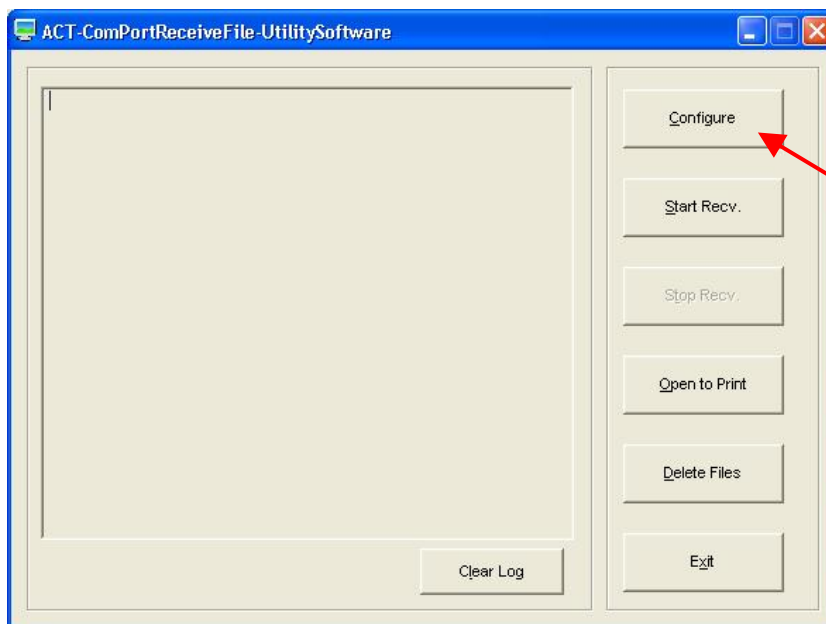
Step 3. Press **C**onfigure button and select correct COM Port as shown below screen.
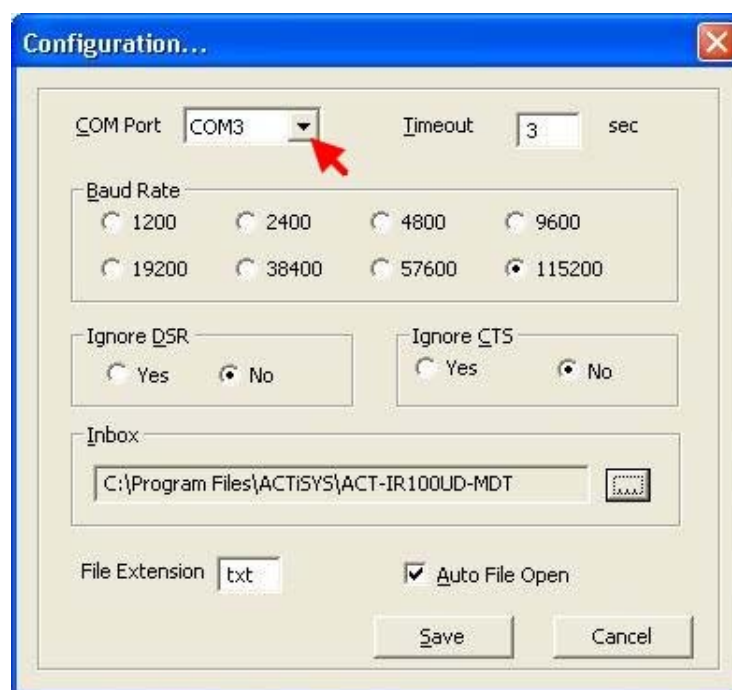

Step 4. You can also change Path where file will be stored for later use or printing. And then Press **S**ave

button to close configuration Window.

Step 5. Turn ON your opposite IrDA (IrLPT Primary) device and establish IrDA link with ACT-IR100UD-MDT. You can watch ACT-IR100UD-MDT TOP green **LED Behavior** to know about IrDA connection.

Step 6. Once connection is established, press **Start Recv** button first. And then send data from your opposite IrDA device to store data into PC which you can later print to local/network printer.

Step 7. ACT-IR100UD-MDT *File Receive Utility* has features of **Auto File Open, File Extension and Timeout.** So, if you have enabled Auto File Open, set Timeout as 3 sec for example, and File Extension as txt, then after received text data from opposite IrDA device, ACT-IR100UD-MDT will automatically popup a received file to text editor like **Notepad** as shown below, 3 sec after. It will also generate a **log file** entry of the receive file name, date and time as shown in below screen.
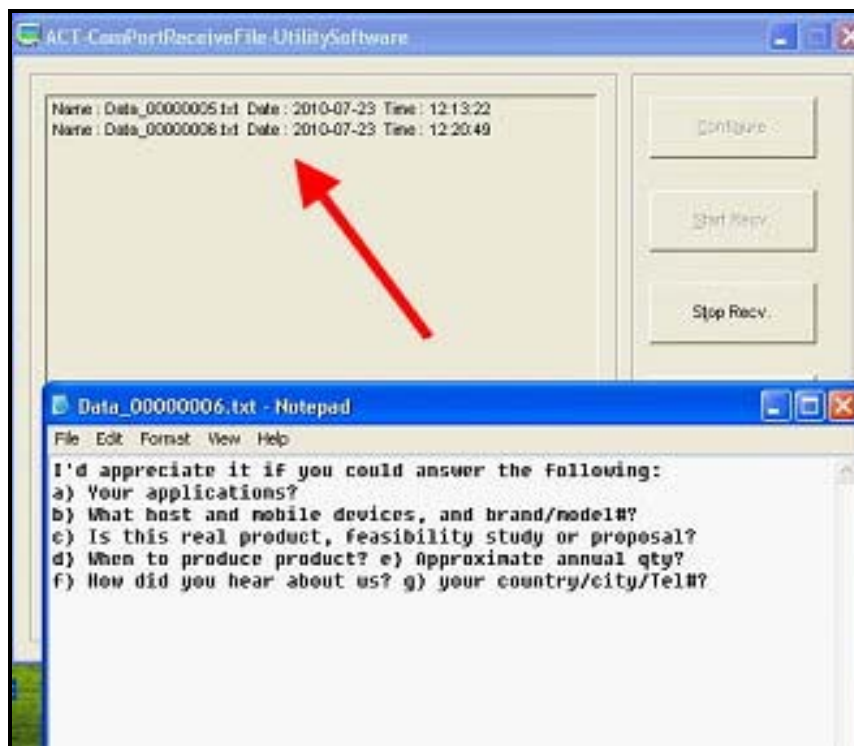

However, **if you have not enabled** Auto File Open, then you can press **"Open To Print"** button to open **just received file** to print to your local printer/network printer as we normally do on any PC file.

NOTE: You can continue to send another file which will be stored with different file name to the same specified path for later access depending on **TimeOut** period. For example, if you want to send two files to print/store then you can send first file and then next file after timeout period (say 3 sec). You can also specify your own timeout period. This feature gives flexibility to avoid every time need to press **Start Recv** and **Stop Recv** buttons repeatedly, especially when you want to store more than one file consecutively.

The Infrared Wireless Expert

12. COMSET- COMMUNICATION PARAMETER SETTINGS

1. Plug in ACT-IR100UD-MDT dongle to USB port.

2. Check the correct COM port number connected (Refer to **Chapter 7 COM PORT CHECK**).

3. Open **COMSET** Configuration utility from:

   Start => Program => ACTiSYS => ACT-IR100UD-MDT => ACT-IR100UD-MDT Config Utility.
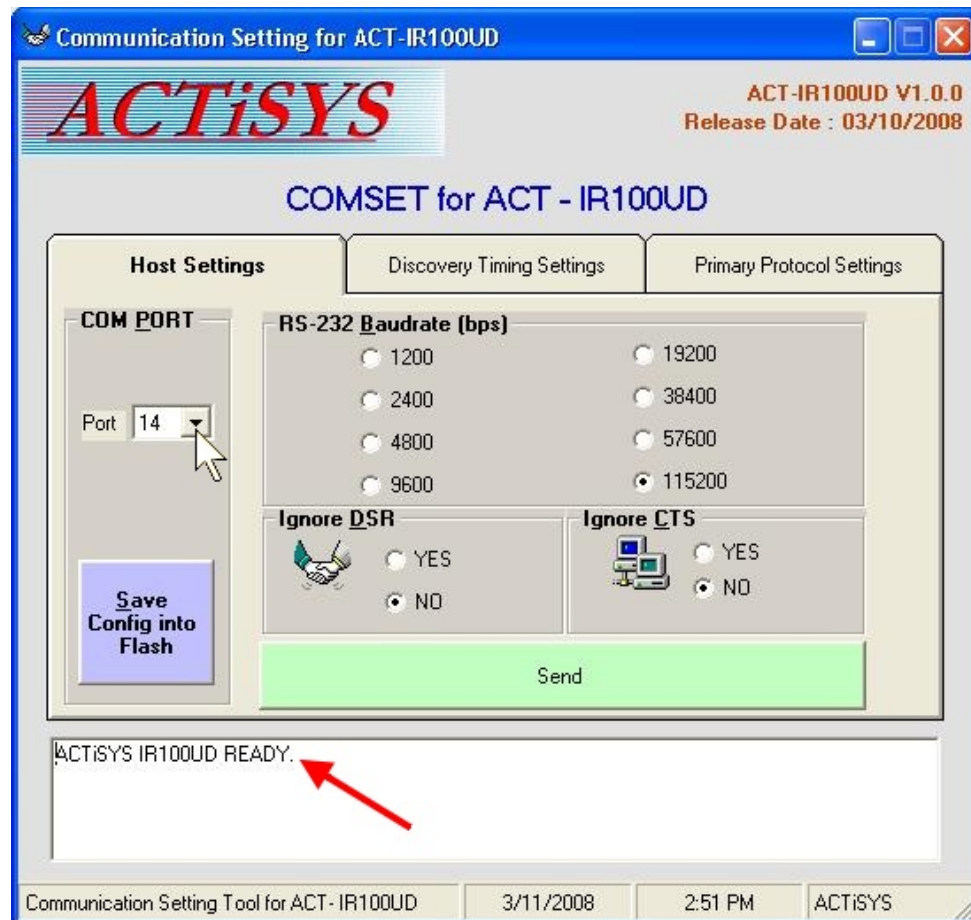
The Infrared Wireless Expert
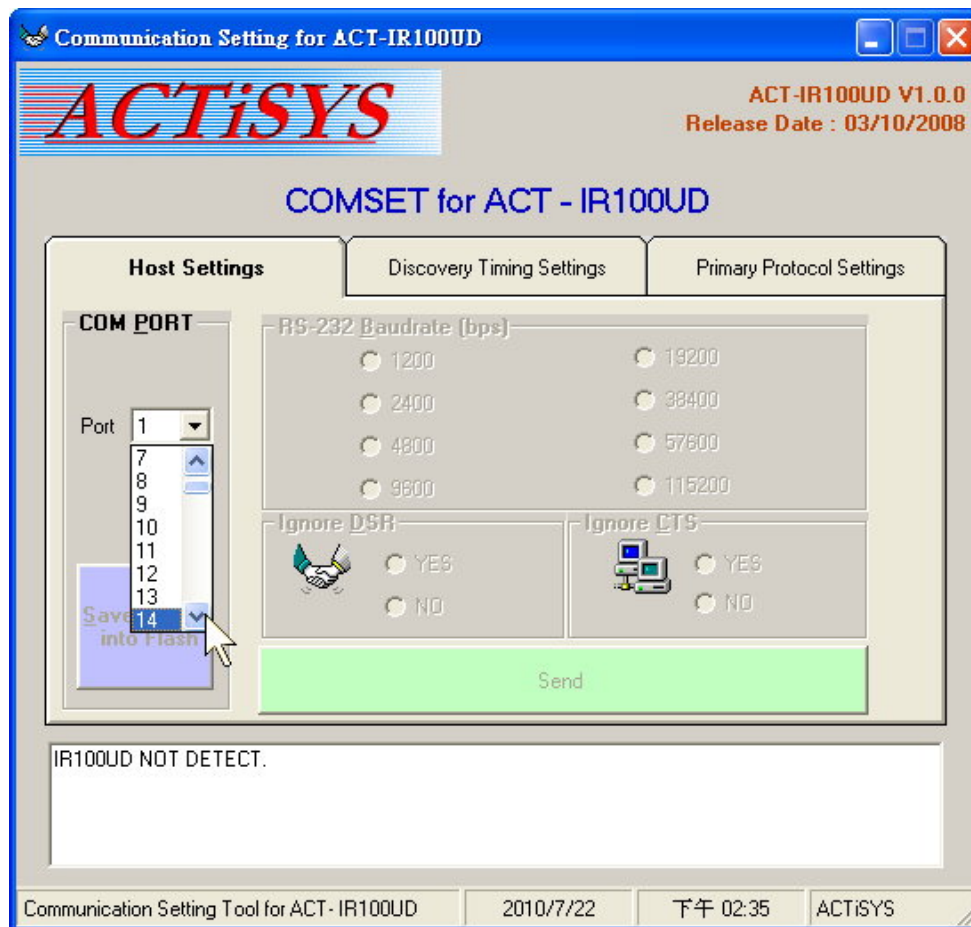
12.1 The First Tab: Host Settings

This is for baud rate selection and the hardware flow control.

From **COM PORT filed**, select the correct Port number. E.g., COM Port 14.

Then you will see "ACTiSYS IR100UD READY." message as shown in below figure.

NOTE: ACT-IR100UD-MDT dongle has been preset **baud rate to 115.2 Kbps** as its **Factory Default**, so you should select 115200 bps baud rate. If you wish to do host communication at any other baud rate than 115.2 Kbps, then you must select the same baud rate in File Receive utility as explained in previous Chapter 10. FILE RECEIVE UTILITY.

The Infrared Wireless Expert

12.2 The Second Tab: Discovery Timing Settings

This is to set the Discovery Slot number and Discovery Time interval.

NOTE: This is a common Utility of COMSET Configuration for generic ACT-IR100UD actually. Although it opens window for **Mode** setting, but **ACT-IR100UD-MDT** supports **Secondary** mode Only. **So DO NOT change it to Primary mode** here. Otherwise you will face a communication trouble with the host PC.

Discovery Slot can make discovery process faster or slower.

Discovery Time should be 3 seconds in general. You can change it if you want the discovery process faster or slower.

The Infrared Wireless Expert

12.3 The Third Tab: Primary Protocol Settings

This is for Primary Protocol Settings.
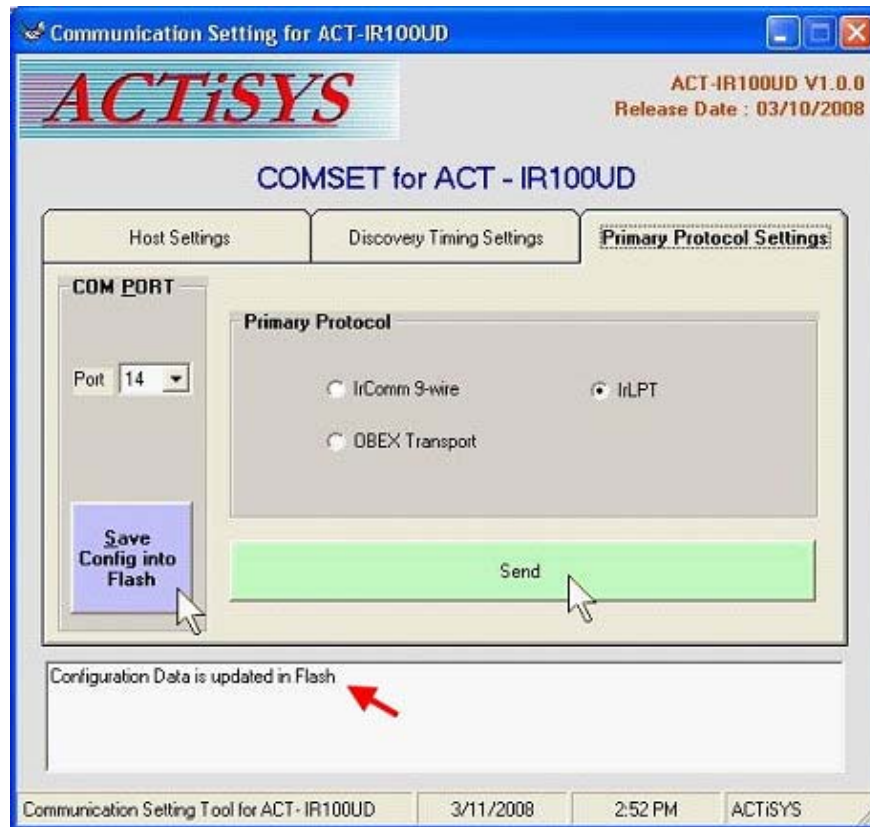
Again, please DO **Leave** it to **IrLPT** since this is the **Default** of ACT-IR100UD-MDT. **Do NOT change it.**

- **[Save Configuration Note]:** If you change any parameter, be sure to click "**Send**" button on the tab you have changed first. Then click "**Save Config into Flash**" so that all the changes can be saved successfully.

The Infrared Wireless Expert

13. FACTORY DEFAULT PARAMETER SETTINGS

Configuration Parameter	Default Setting Value
Host baud rate	115.2Kbps
Data format	8N1
Device role mode	Secondary
Primary protocol	IrLPT
DSR/CTS	Not ignored (Active)
Discovery period	3 seconds
Discovery slots	6
Nickname	OnTrack

14. LED BEHAVIOR

Activities	LED Behavior	Remark
Power Turned On	LED blinks rapidly one time & then off	
Secondary mode & DSR activated	LED stays off	It is in stand by status.
Dongle is connected to another IrDA device	LED blinks rapidly.	The blinking speed is based on how fast both devices send and reply frames to each other.

15. CHARACTERISTICS AND SPECIFICATION

Parameter	MIN.	Typical	MAX.	Units
DC supply voltage		5.0	5.2	V
USB signal threshold level	4.8	5V	5.5	V
DC current (Ready mode)	40	42.5	44	mA
DC current (Active Receive mode)	44	44.8	46	mA
DC current (Active Transmit mode)	55	59.5	62	mA
Infrared Transmitting range	1	158	200	cm
Operating temperature range, TA	0		60	$^\circ$C

16. ACT-IR100UD-MDT DONGLE DIMENSIONS

Cable Length: 120 cm.

The Infrared Wireless Expert
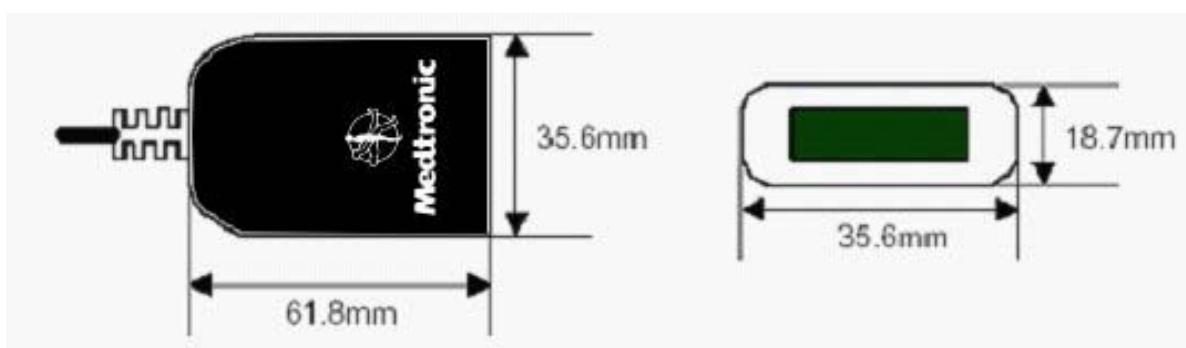
17.   WARRANTY INFORMATION

ACTiSYS Corporation warrants the first end-user purchaser, for a period of 1 year from the date of purchase, that this wireless interface (The Product) will be free from defective workmanship and materials, and agrees that it will, at its option, either repair the defect or replace the defective Product or part thereof at no charge to the purchaser for parts or for labor.

This warranty does not apply to any appearance items of the Product, any consumable items such as paper, ink ribbon, or batteries supplied with the Product, or to any equipment or any hardware, software, firmware, or peripheral other than the Product. This warranty does not apply to any Product the exterior of which has been damaged or defected, which has been subjected to misuse, abnormal service or handling, or which has been altered or modified in design, construction or interfacing. Tampering with Label Voids Warranty.

In order to enforce the rights under this limited warranty, the purchaser should mail, ship or carry the Product, together with proof of purchase, to ACTiSYS.

The limited warranty described above is in addition to whatever implied warranties may be granted to purchasers by law. To the extent permitted by applicable law, ALL IMPLIED WARRANTIES INCLUDE THE WARRANTIES OF MERCHANT ABILITY AND FITNESS FOR USER ARE LIMITED TO A PERIOD OF 1 YEAR FROM THE DATE OF PURCHASE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Neither the sales personnel of the seller nor any other person is authorized to make any warranties other than those described above, nor to extend the duration of any warranties beyond the time period described above on behalf of ACTiSYS. Corporation.

The warranties described above shall be the sole and exclusive remedy available to the purchaser. Correction of defects, in the manner and for the period of time described above, shall constitute full satisfaction of all claims, whether based on contract, negligence, strict liability or otherwise. In no event shall ACTiSYS Corporation be liable or in any way responsible, for any damages or defects in the Product which were caused by repair or attempted repairs performed by anyone other than ACTiSYS technician. Nor shall ACTiSYS Corporation be liable or in any way responsible for any incidental or consequential economic or property damage. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

FOR YOU RECORDS
For your assistance in reporting this product in case of loss or theft, please record below the model number and serial, which are located on the bottom of the case. Please retain this information.

Model Number:	Serial Number:	Date of Purchase:

18.   CONTACT INFORMATION

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