



# MEDINHAND POCKET ECG

## USER'S MANUAL

Version 1.05

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**MedEx Tech-Trade Corporation**

**MedEx can modify the documents without notice.**

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## GENERAL INFORMATION

The ECG acquisition card is certified by CE and meets the requirements of the 93/42/ECG. It is designed to meet the standards EN 60601-1, IEC60601-1-1, IEC 60601-1-2 and IEC 60601-2-47 and complies with the guidelines issued by TUV Rheinland Group.

The functionality of the ECG acquisition card may be disturbed by heavy electromagnetic radiation. Try to avoid standing right next to mobile phones, microwaves and radio broadcast masts if possible.

## INTENDED USE

The Medinhand Pocket ECG is designed for 12 Lead ECG test.

## MEDEX PRODUCT SUPPORT

You can get technical supports by contacting our Product Support Group.

### CHINA

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## USING THIS MANUAL

This document provides information on installing and operating Medinhand Pocket ECG.

As it is assumed that you are familiar with Windows SE, the Microsoft software used is described only briefly.

## COMPONENTS

Pocket ECG consists of the following components:

The components may vary depending on the order.

- ECG ACQUISITION Cards
- Patient Cable
- Clamp electrodes
- Chest electrodes
- PDA ( HP HP iPAQ Pocket PC Model PC2003 )

Ensure the existing assembly is correctly installed and connected. This should be done prior to turning on the PDA.

## RISKS AND SIDE EFFECTS

Up to now, when using the device correctly, no side effects and risks are known to the manufacturer.

## CLASSIFICATION

Classification according to EN 60601-1:

Type of protection against electric shock: Device of safety class

Grade of protection against electric shock: Device of type BF

Operation mode: Continuous operation with intermittent loading.



CE-Certification



Type BF

## ENVIRONMENT REQUIREMENTS

### Conditions for operation

The following operation conditions must be met:

Temperature: +10 to +50°C

Ambient pressure: 600 to 1200 hPa

Relative humidity: 0 to 95%

### Conditions for transport and storage

The following transportation and storage conditions must be met:

Temperature: -20°C to 60°C

Ambient pressure: 500 hPa to 1060 hPa

Relative humidity: 5% to 90%

## NOTICE

- During transport and storage the devices must be kept dry.
- Don't turn them upside down or place them on side during transport and storage.
- The devices are fragile.
- Don't use hand hooks for transport.

## TECHNICAL SPECIFICATIONS

Lead: Wilson 12 Lead Standard ECG

Plug-in patient cable

Power supply: Rechargeable battery

Sampling Rate 24 bits, 1000 Points / second

Display: Color TFT LCD , 320x240 pixels , 65535 color

Storage: minimal 50 patients (180 second data for each), expandable with Memory Card

## STANDARDS

EN 980 / EN 1041 ( English Version )

EN 1441 / ISO 14971 ( English Version )

ISO 13485 : 2003 ( English Version )

GB 191-2000 Graphical representation of Package and Delivery

GB 9706.1-1995 Medical Electric Device, the first part: Currency Security Requirements

GB/T 14710-1993 Environment Requirement and Experiment Method of Medical Electric Device

YY/T 0316-2003/ ISO14971 : 2000 Medical Appliance, Venture Management application for Medical Appliances

YY 1139-2000 Singel channel and multiple channel ECG equipment

IEC 60601 ( English Version )

IEC 60601-1-1 ( English Version )

IEC 60601-1-2 ( English Version )

IEC 60601-1-4 ( English Version )

IEC 60601-2-25 ( English Version )

IEC 60601-2-47 ( English Version )

IEC 60601-2-51 ( English Version )

Safety Standard : IEC 601-1, IEC 601-2-47

MDD: Class II a


## **FURTHER UPDATES**

This Medinhand Pocket ECG is an ECG device based on a PDA. The ECG device realizes real-time 12-lead ECG waveform monitoring, recording, storage and display. If it connects to a MedEx ECG workstation, the recorded ECG data in the Pocket ECG can be analysed and the ECG reports can be printed. If it connects to a MedEx thermal printer, the ECG waveform saved in the Pocket ECG can be printed by the printer.

## HOW TO RUN MEDINHAND POCKET ECG

The PDA has a touch screen and a pen too. All the data input and operations can be realized via the PDA pen or a finger.

### ENTER MEDINHAND POCKET ECG SYSTEM

Switch on the PDA, and then press the button  on the left downside of the PDA as the Figure 3. Then the MedinHand Pocket ECG software is run. Press the heart icon as shown in the Figure 4, then it directly enters to the patient input window.

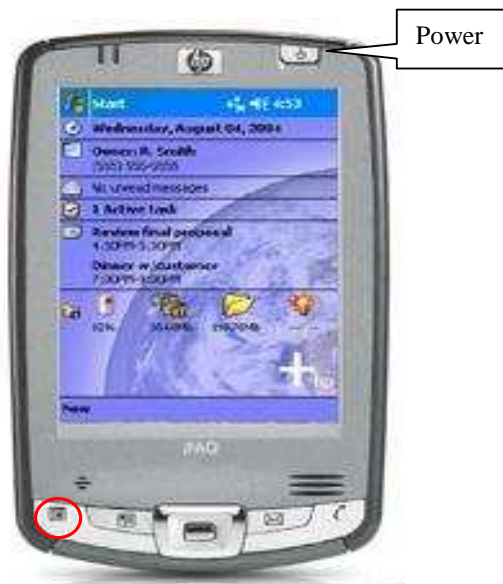


Figure 3 PDA Operation Interface

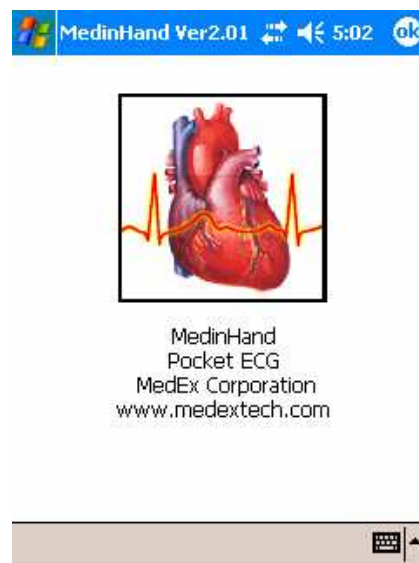
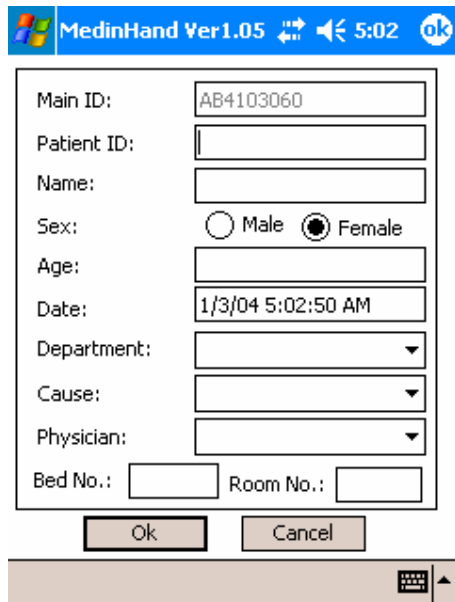


Figure 4 Welcome page

## CREATE A NEW ENCOUNTER

In the following patient input window, enter the related information via the PDA pen as the following Figure 5.



MedinHand Ver 1.05 5:02

Main ID: AB4103060

Patient ID:

Name:

Sex:  Male  Female

Age:

Date: 1/3/04 5:02:50 AM

Department:


Cause:

Physician:

Bed No.:  Room No.:

Ok Cancel

Figure 5 Patient Input Window

In the main interface of the Pocket ECG as the following Figure 6, users can also press  button on the downside of the window to create a new encounter.

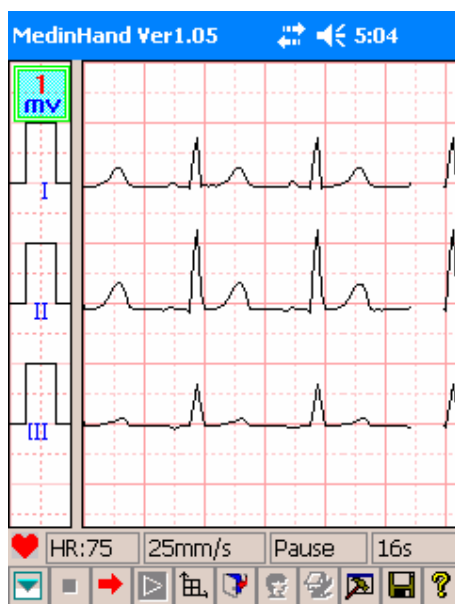


Figure 6 Main Interface

## MAIN INTERFACE

After inputting patient information in the patient input window, click the **OK** button. Then the system enters the Main interface as Figure 6.

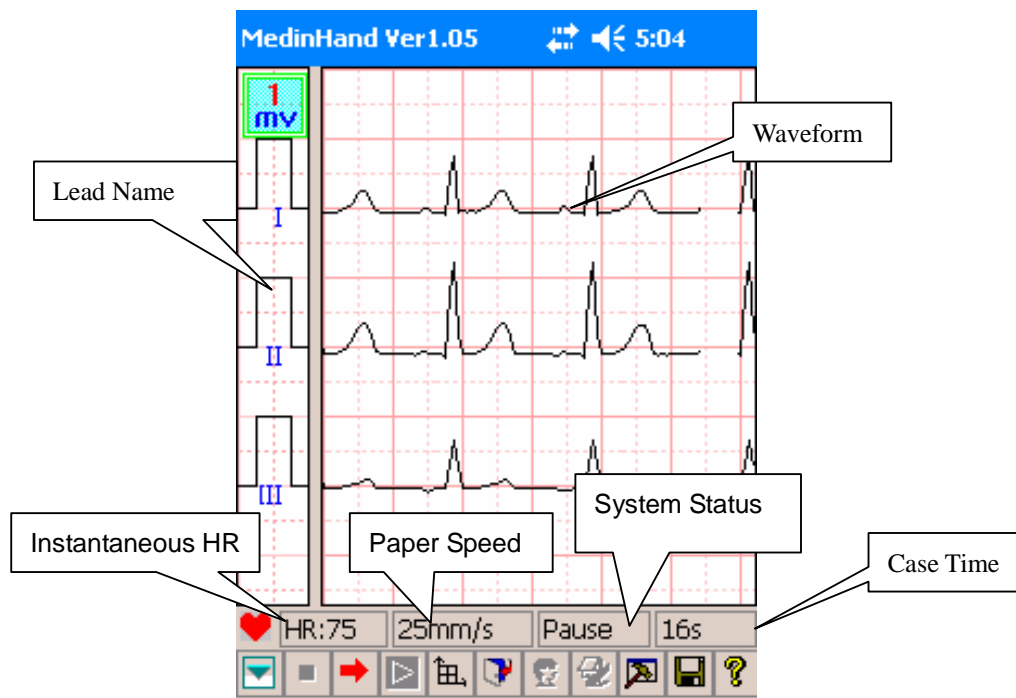
















Figure 7 Main Interface Description





-  switch between different leads
-  pause the current operation
-  play the waveform
-  enter the system setting window
-  exit from the system
-  create a new encounter
-  enter the case list interface
-  enter Channel settings window
-  enter transfer settings window

## Monitor ECG Waveform

In the main interface, click the second left button on the down button bar  to begin ECG monitoring. The button icon will automatically change to the  shape.


## Record ECG Waveform




When the waveform is stable, click the  button to begin recording the waveform. The button icon will automatically change to the  shape. Click the  button to stop ECG recording. The recorded ECG waveform will be directly saved to the defaulted saving folder. After stopping recording, the just now recorded waveform will be displayed on the screen.

When recording, click the  button to pause recording. The system returns to the monitoring status. The  button changes into the  shape. Click it, the system continues to record the waveform. Click the  button to switch the shown leads.


**Note: Make sure that the recording time should be more than 5 seconds.**

## Review Records

Choose a case from the case list. Click the  button to play the selected case.

Click the  button to pause playing. The  button changes into the  shape. Click it, the waveform continues to play. Click the  button to switch the shown leads.

## Case list

Press  to enter the case list window as shown in the Figure 8,.

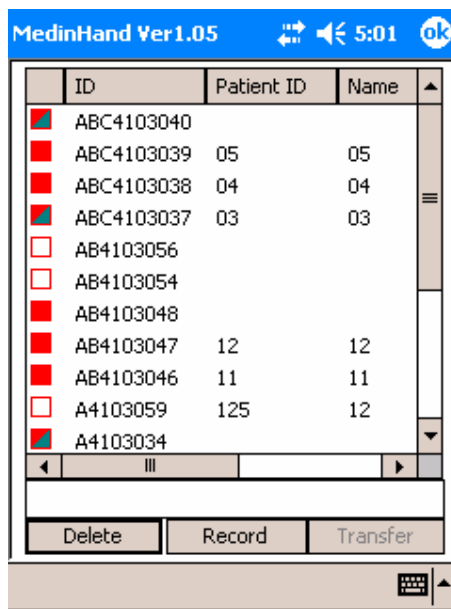


Figure 8 Case List Window

**Delete** button: Press it to delete the selected case.

**Record or Review** button: press to record or review the selected case.


If the selected case has no ECG waveform, the status signal on the left is  and the right down button shows Record as in Figure 8.

If the selected case has ECG waveform, the status signal on the left is  and the right down button shows Review.


If the status signal is , it means that the current case data has already been transferred to the workstation.

**Transfer** button is to transfer the selected case to the ECG workstation.

## Adjust Displayed Waveform's Voltage

Use the PDA pen or your finger to press  on the left upside of the screen, and the waveform's voltage can be adjusted. There are 3 choices available, they are 1mv, 2mv and 1/2mv.

## SYSTEM SETTINGS

Click the  button on the main interface, to enter the **System Settings** window as Figure 9: .

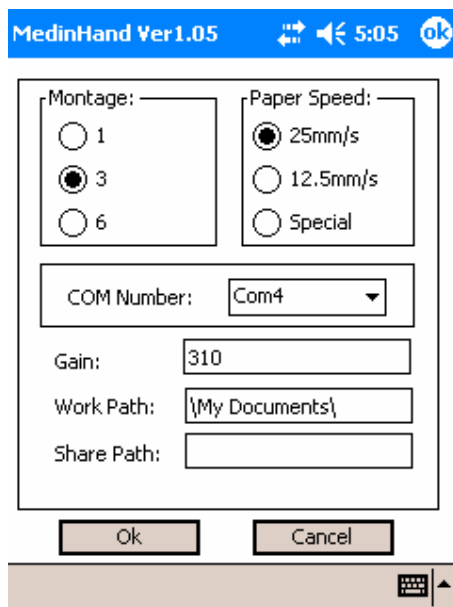


Figure 9 System Settings Window

**Channels** is to set how many leads are shown on the screen at the same time.

**Paper Speed** is to set the paper speed between 25mm/s and 12.5mm/s or a special one.


**COM No.** is to set the COM port number of the ECG capture card. Please don't modify this item unless you are the professional staff.

**Gain** is to adjust the gain of the waveform, which is defaulted as 310. Don't modify it frequently!

**Work Path** is to set the saving path of the data.

**Share Path** is to set the transfer path for data transfer via TCP/IP mode.

## EXIT FROM THE SYSTEM

Click the button  to exit from the system, as in the Figure 10.

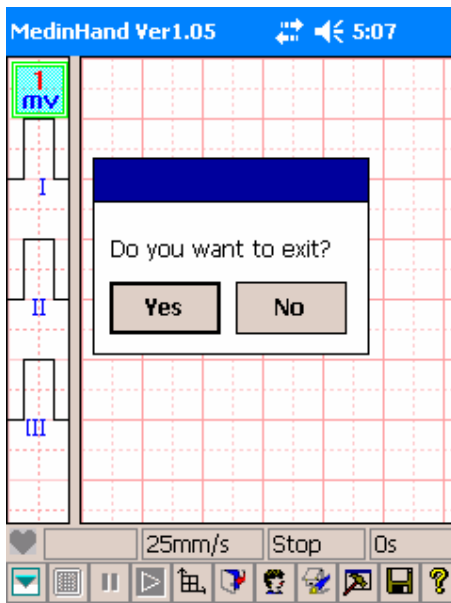


Figure 10

## CHANNEL SETTINGS

Click  to enter Channel settings window:

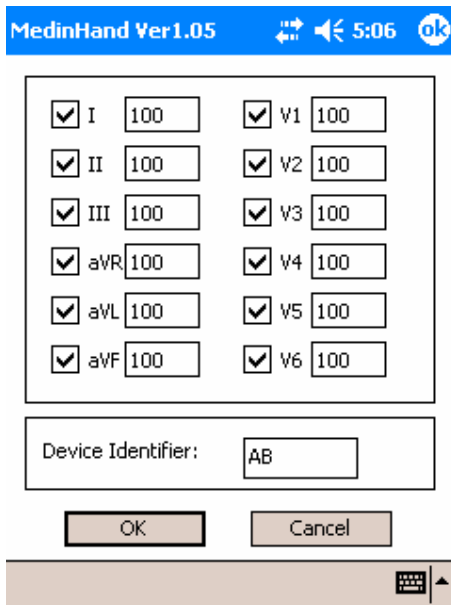
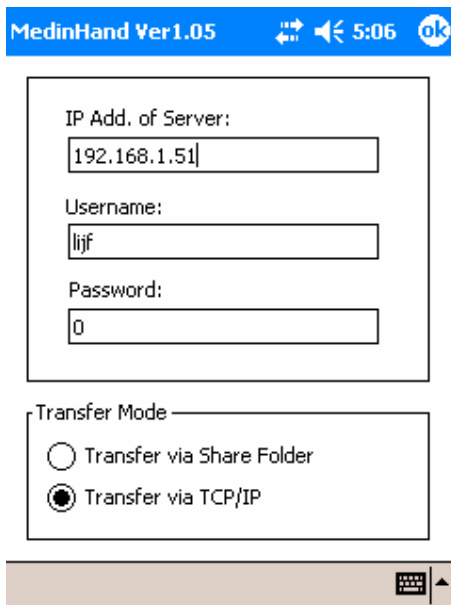


Figure 11

## TRANSFER SETTINGS

Click  to enter Transfer Settings window, as in the figure



MedinHand Ver 1.05

IP Add. of Server:  
192.168.1.51

Username:  
lijf

Password:  
0

Transfer Mode

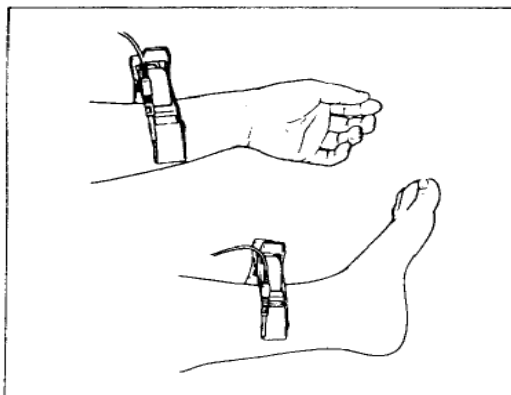
Transfer via Share Folder

Transfer via TCP/IP

## LEADS AND ELECTRODES PLACING

### Wilson 12 Leads

#### Clamp Electrodes



Put clamp electrodes on the soft skin of arms and legs.

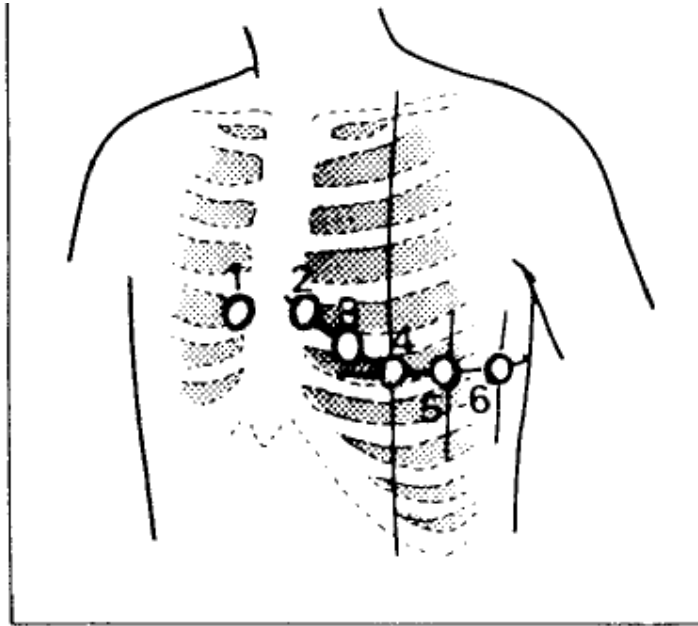
- 1 . Use alcohol to clean the skin where connected with electrode.
- 2 . Put a little gem on the cleaned skin.
- 3 . Put gem on the clamps connected with skin.

#### Chest Electrodes (bulb)

The positions for chest electrodes are as the following figure.

- V1: Fourth intercostal space, right sternal border
- V2: Fourth intercostal space, left sternal border.
- V3: Midway between V2 and V4
- V4: Fifth intercostal space, left midclavicular line.
- V5: Level with V4, left anterior axillary line.

V6: Level with V4, left mid axillary line.



Use alcohol to clean the chest skin connected with electrode.

1. Put a little gem on the cleaned skin around 25mm.
2. Put gem on the Bulb connected with skin.

Note: The electrodes cannot be connected with each other.