



The Manual of Embedded Industrial Panel PC

WECON Technology Co., Ltd.

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1. Company Introduction

WECON Technology Co., Ltd. is formerly named Xiamen WECON Technology Co., Ltd. Since its establishment in 2006, this high-tech company has been specialized in automation product research, development and sales. LEVI series of industrial man-machine interfaces and industrial Panel PC products produced by the company have achieved a number of hardware and software intellectual properties, which are widely used in machinery and equipment, metallurgy, chemical, oil and other industries. Our products are exported to nations and regions including US and Europe.

While WECON Technology Co., Ltd. has attained significant development in human-machine interface products, its independent research and development of programmable controller (PLC) products began in 2010 officially came into the market in June 2012. The emergence of WECON LX series PLC means that the company has again mastered a core technology in the field of automation, indicating that the product lines of WECON began to expand horizontally.

With complete and regular production procurement channels, a rigorous and scientific quality management system, a simple and efficient mechanism for innovative research and development, we provide services to users wholeheartedly, as well as automation technologies and products with better quality, easier application and more reliable technologies.

Since its establishment, the company has gathered a large number of young and vibrant high-tech talents, obtained a lot of core technologies in automation industry and product development, accumulated valuable experience in serving users, and formed many effective scientific management systems. All of these are the keys to our success.

2. A7 Series Industrial Panel PC

2.1 The Main Hardware Parameters

The main hardware parameters:

- ARM9 2416 400MHZ CPU
- The whole series adopt TFT true color LCD, with 65536 colors and brightness of up to 250 lumens; supporting 4.3-inch, 7-inch, 10.2-inch and 10.4-inch;
- 128MB Built-in Flash
- a USB HOST; a USB DEVICE
- DDR2 64MB memory
- Support RS232/RS485/RS422, multiple serial ports
- Support CANBUS
- Support Video Input
- Support audio output
- Using the embedded installation

2.2 Software Configuration

WECON LEVI series industrial panel PC can pre-install WINCE system and LINUX system according to users' needs.

A7 Series WINCE system configuration:

- WINCE 5.0 system
- NET Framework 2.0 (also support NET Framework 3.5)
- IE browser (optional)

- RDP function (Remote Desktop) (optional)
- OPC SERVER (optional)
- WIFI wireless Ethernet (optional)
- Serial Drivers (RS232/RS485/RS422), can support up to 921600 baud rate
- USB mouse, keyboard, ergonomic devices (e.g. scanner)
- USB mini printer (South Korea SEWOO brand) (optional)
- FTP SERVER (optional)
- CITRIX client (optional)
- HTTP SERVER (optional)
- Media Player (optional)
- Support Chinese & English dynamic switch
- CEPC System built-in configuration tool
- ACTIVESYNC dynamic debugging tool

Note: Optional represents that WINCE system kernel-image can be customized according to users' needs.

A7 Series LINUX System Configuration:

- Don't support LINUX system yet

A7 Series ANDROID System Configuration

- Don't support ANDROID system yet

2.3 Model and Parameters

| Model/specification | LEVI430T | LEVI700L | LEVI777A | LEVI102A | LEVI910T |
|----------------------------|---|----------|----------|-----------|-----------|
| Display and Input | | | | | |
| LCD Type | TFT LCD | | | | |
| Display Size | 4.3 inch | 7 inch | 7 inch | 10.2 inch | 10.4 inch |
| LCD aspect ratio | 4:3 | | | | |
| Colors | 65536 colors | | | | |
| Resolution | 480*272 | 800*480 | 800*480 | 800*480 | 800*600 |
| Backlight Type | LED Backlight | | | | |
| Backlight Brightness | 250 lumens (adjustable as per software) | | | | |
| Backlight lamp life | 50,000 h | | | | |
| Touch Panel | High precision four-line resistance | | | | |
| Mouse | Can support USB mouse | | | | |
| Hardware parameters | | | | | |
| CPU | ARM9 2416 400MHZ | | | | |
| Power supply | DC24 | | | | |
| Voltage range | DC12-28V | | | | |
| Rated power | <5w | | | | <10w |
| Operating temperature | -10°C-60°C | | | | |
| Storage temperature | -30°C-70°C | | | | |
| FLASH | 128 MB | | | | |
| DDR memory | DDRII 64 MB | | | | |

| Interface parameters | | | | | |
|---|--|-------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| COM1 | RS232/RS485/RS422 | RS232/RS485/RS422 | | | |
| COM2 | Nonsupport | RS232/RS485 | | | |
| COM3 | Nonsupport | Nonsupport | Extensible, model is LEVI777A-E | Extensible, model is LEVI102A-E | Extensible, model is LEVI910T-E |
| Ethernet | Nonsupport | Nonsupport | Extensible, model is LEVI777A-N | Extensible, model is LEVI102A-N | Extensible, model is LEVI910T-N |
| SD card | Nonsupport | Nonsupport | Support | Support | Support |
| USB HOST | 1 | 1 | 1 | 1 | 1 |
| USB DEVICE | 1 | 1 | 1 | 1 | 1 |
| WIFI | Nonsupport | Nonsupport | Extensible, model is LEVI777A-W | Extensible, model is LEVI102A-W | Nonsupport |
| CANOPEN | Nonsupport | Nonsupport | Extensible, model is LEVI777A-C | Extensible, model is LEVI102A-C | Nonsupport |
| Video input | Camera supporting USB interface | | | | |
| Apparent parameters | | | | | |
| Dimension W*H*Dmm | 138*86*37 | 212*146*36 | 212*146*36 | 272*200*47 | 299*222*54 |
| Mounting dimension W*Hmm | 131*79 | 192*138 | 192*138 | 260*179 | 288*212 |
| Shell | ABS engineering plastics (flame-retardant level) | | | | |

3. A8 Series Industrial Panel PC

3.1 A8 Series Hardware Features

- ARM Cortex A8 720Mhz
- TFT true color LCD, with 65536 colors and brightness of up to 250 lumens; supporting 7-inch, 10.2-inch and 10.4-inch (4:3 LCD)
- TI 3359 cpu built-in PowerVR 3D/2D acceleration
- Flash large capacity storage, support 4G EMMC
- DDR3 with up to 256 memory
- Support Ethernet, ethercat, CAN bus
- Support 5 serial ports, RS232/RS485/RS422
- Support CAN bus
- Support Ethernet
- Wireless Ethernet (optional)
- sound card (optional)
- Support U disk, SD card

3.2 A8 Series Software Configuration

WECON A8 Series Embedded Industrial panel PC can pre-install WINCE system, LINUX system and ANDROID system according to users' needs.

3.2.1 WINCE System Configuration

Pre-install WINCE system (all product quotations in our company are free of license fees); the standard system configuration is as

follows:

- WINCE 7.0 system
- Support. NET Framework3.5
- IE browser (optional)
- RDP function (Remote Desktop) (optional)
- OPC SERVER (optional)
- WIFI wireless Ethernet (optional)
- Serial Driver (RS232/RS485/RS422), can support up to 921600 baud
- USB mouse, keyboard, ergonomic devices (e.g. scanner)
- USB mini printer (South Korea SEWOO brand) (optional)
- FTP SERVER (optional)
- CITRIX client (optional)
- HTTP SERVER (optional)
- Media Player (optional)
- Silverlight for Windows Embedded (optional): the powerful functions of Silverlight provides some tools for developers and UI designers; the separation between UI and business logic is conducive to iterative processing device and application program UI, and also does not affect the core development tasks.
- Flash 10.1 (optional): Flash 10.1 integrated in browser supports playing Flash, and can run Flash content full-screen without the presence of browser UI.
- Connection Manager and Windows Device Stage (optional): Connection Manager provides the basic framework technology for a variety of network transmission of management devices. By using Windows Device Stage, users can easily transfer media and content between devices and PC.
- Microsoft Office and PDF viewer (optional): updated application can render Microsoft Office Word, PowerPoint, Excel and Adobe PDF content, and also support Microsoft Office 97, 2000, 2003, XP and 2007.
- Support the dynamic switch between English and Chinese
- CEPC System built-in configuration tool
- ACTIVESYNC dynamic debugging tool

Note: Optional represents that WINCE system kernel-image can be customized according to users' needs.

3.2.2 LINUX System

LINUX system can be installed in advance based on users' needs; the standard system configuration is as follows:

- Operation system version: Linux-3.2.0 version
- CAN bus
- Sound card driver (optional)
- TCP/IP
- Programming tools such as QT or X11 (optional)
- CHROME browser or FIREFOX (optional)
- System desktop
- Available for multiple languages (Chinese, English, Japanese, etc.), can be switched online
- JAVA Support Package (optional)
- FTP SERVER/HTTP SERVER (optional)
- Built-in standard printer driver
- Network printing (optional)
- USB mouse, keyboard and other ergonomic devices (scanner, etc.)
- GDB dynamic debugging tool
- SSH Remote Terminal Tool

3.2.3 ANDROID System

ANDROID system can be installed in advance based on users' needs; the standard system configuration is as follows:

- Operation system version: ANDROID 4.2 version
- Sound card driver (optional)
- TCP/IP
- CHROME browser (users can install other browsers by themselves)
- Support multiple languages (Chinese, English, Japanese, etc.), can be switched online

- JAVA Support Package (optional)
- FTP SERVER/HTTP SERVER (optional)
- Built-in standard printer driver
- Network printing (function)
- ADB dynamic debugging tool
- Support U disk, SD card
- Users can install other applications on their own
- Support USB keyboard, mouse, and other ergonomic equipment

Note: Optional represents that ANDROID system kernel-image can be customized according to users' needs.

3.2.3 A8 Series Model and Parameters

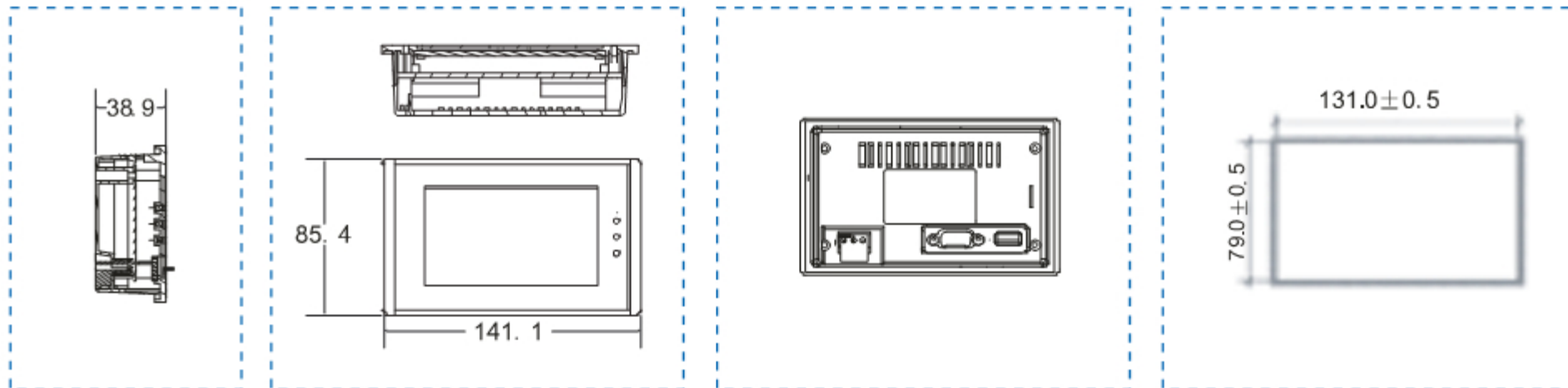
| Model/specification | LEVI8708 | LEVI8108 | LEVI8104 |
|-----------------------------|---|-----------|-----------|
| Display and Input | | | |
| LCD Type | IPS LCD | | |
| Display Size | 7 inch | 10.2 inch | 10.4 inch |
| LCD aspect ratio | 16:9 | 16:9 | 4:3 |
| Colors | 65536 colors | | |
| Resolution | 480*272 | 800*480 | 800*600 |
| Backlight Type | LED backlight | | |
| Backlight Brightness | 250 lumens (adjustable as per software) | | |
| Backlight lamp life | 50,000 h | | |
| Touch Panel | High precision four-line resistance | | |
| Mouse | Can support USB mouse | | |
| Hardware parameters | | | |

| | | | |
|------------------------------|---------------------------------|------------------------|------------------------|
| CPU | CORTEX A8 720MHZ | | |
| Power supply | DC24 | | |
| Voltage range | DC12-28V | | |
| Rated power | <5w | | |
| Operating temperature | -10°C-60°C | | |
| Storage temperature | -30°C-70°C | | |
| FLASH | 4 GB | | |
| DDR memory | DDR3 256 MB | | |
| Interface parameters | | | |
| COM1 | RS232 | | |
| COM2 | RS485/RS422 | | |
| COM3 | RS232 | | |
| COM4 | RS485 | | |
| COM5 | RS485 | | |
| Ethernet | Standard configuration | Standard configuration | Standard configuration |
| SD card | Support | Support | Support |
| USB HOST | 1 | 1 | 1 |
| USB DEVICE | 1 | 1 | 1 |
| WIFI | Optional | Optional | Optional |
| CANOPEN | Optional | Optional | |
| Video input | Camera supporting USB interface | | |
| Apparent parameters | | | |
| Dimension W*H*Dmm | 212*146*45 | 272*200*48 | 286*222*54 |

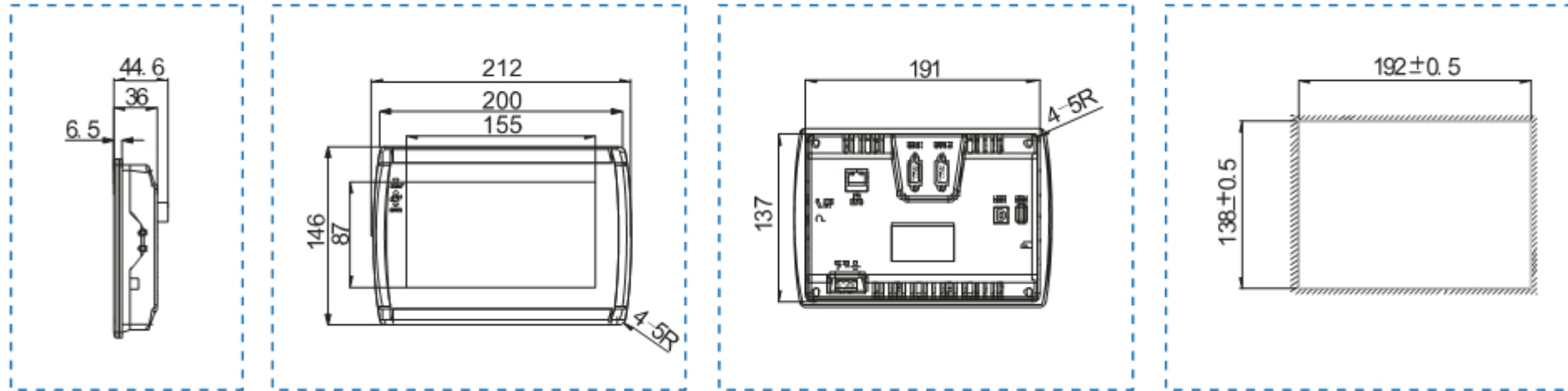
| | | | |
|-------------------------------------|--|---------|---------|
| Mounting dimension W*Hmm | 192*138 | 260*179 | 288*212 |
| Shell | ABS engineering plastics (flame-retardant level) | | |

4. Installation Dimension and Physical Maps

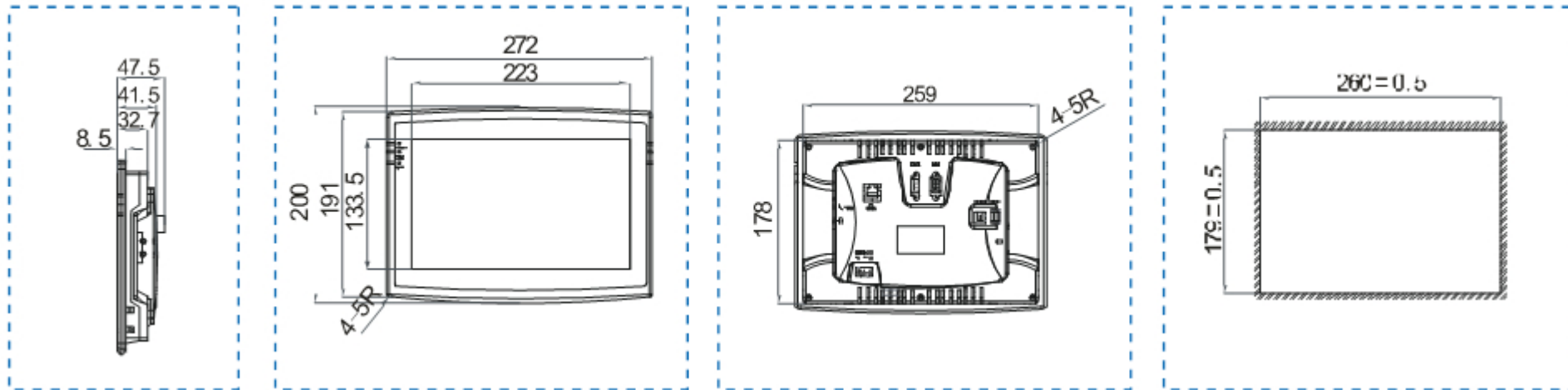
4.1 Installation Dimension Maps



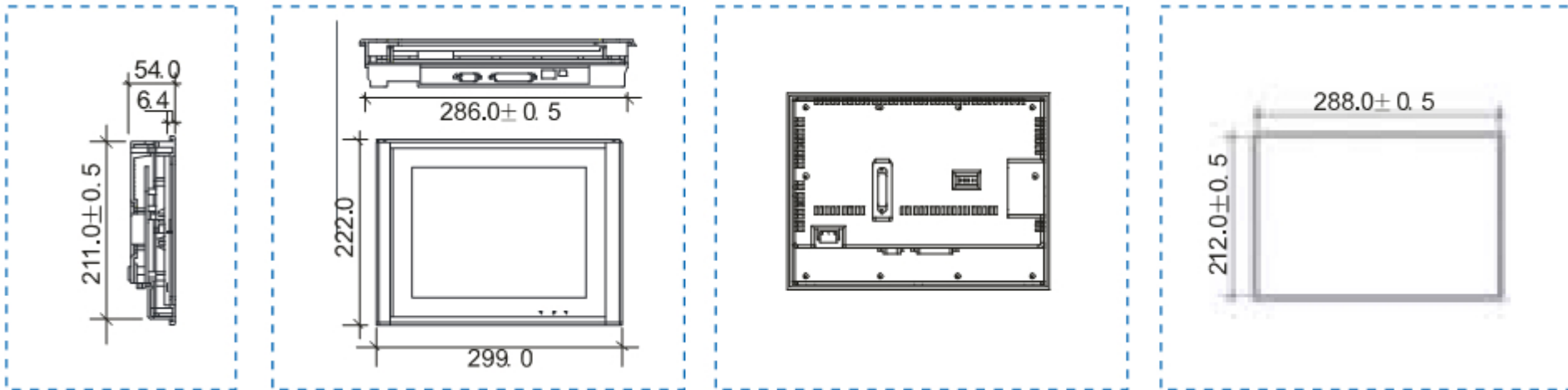
4.3-inch Installation size map



7-inch Installation size map



10.2-inch Installation size map



10.4-inch Installation size map

4.2 Physical Maps



10.2-inch physical map



4.3-inch physical map



10.2-inch physical map



10.4-inch physical map

5. Solutions and Applications

The industrial panel PCs preloaded with the WINCE system and the LINUX system, as researched and developed in our company, have been widely applied due to complete interfaces, good open platform, fast operation, stable and reliable performance. The major applications include:

Production line management: management and operation terminal for production station is used for number statistics, quality analysis or performance appraisal, and station training, etc. That is, it requires not only communicating directly with some devices to obtain production data but also coordinating with information systems in factories to complete data collection and other functions.

Information management: act as plant informatization and display control terminal, with no need to directly control; it improves production efficiency and resource utilization of plants, reduce production costs effectively, which should be used in conjunction with information systems.

Device control: industrial panel PC based on the WINCE system or the LINUX system allows users to independently develop configuration software or purchase third-party configuration software. It can communicate with control devices through configuration software, such as PLC, DCS, control modules or other control products.

It can be applied in intelligent buildings, new energy automobile industries, etc.

5.1 Application Case of Production Line Operation Terminal in Garment Dry-cleaning Plant

User needs:

The user is a garment dry cleaning plant. Dry-clean production line includes the following procedures: unpacking, rough wash, sperm washing, drying, ironing, sorting, and packing. Each process is taken charge by one worker, who scans the bar codes on clothes through the scanner connected to the operation terminal (industrial panel PC) in the USB port. Based on barcodes, the operation terminal checks garment information and process requirements from the database. Workers operate in accordance with the process requirements. After

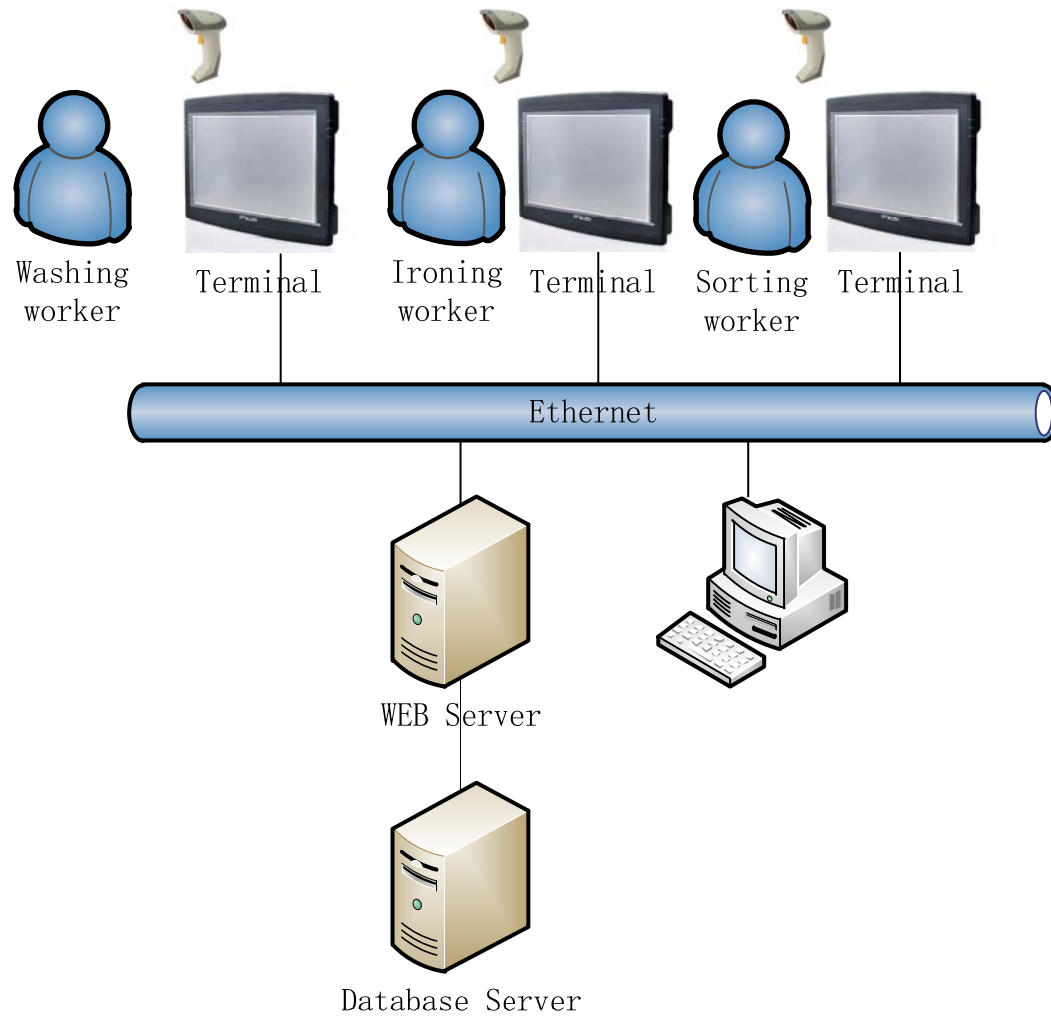
the operation is completed, they perform the scanning procedure again and then enter into the next process.

Users require the system to achieve:

1. The process has a demonstration function so as to train workers to follow the process specification;
2. The responsibility of recourse: users can quickly track the entire operation process as per barcode on the clothes. Users are responsible for any problem occurred.
3. Performance appraisal: according to staff number, calculate employees' performance pay.

6. WINCE Configuration Software Tools-CEPC.exe

If users select WINCE system, we provide configuration software CEPC for free. And you can ask our technical support engineer for the document of CEPC



Scheme Structure of Garment Dry-cleaning Plant

Implementation:

1. Use A9 Series 10.2-inch industrial panel PC, built-in WINCE system 5.0 version, and built-in Web browser;
2. Connect scanner through the USB interface for employees' identity identification and login, and garment barcode scanning;

- 3. The system uses B/S structure and users can enter WEB server through a web login;
- 4. WEB server and database can directly communicate, inquire, enter and get access to relevant data.

洗涤工序管理

注 销
去 渍

条码：9383888
打开键盘
本批件数：259件
已处理：259件

| | | |
|---|--|--|
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| <div style="display: flex; justify-content: space-between; align-items: center;"> 员工：张三 处理总数：2000件 2010-04-28 10: 05 </div> | | |

Achieve the above application architecture through webpage

5.2 Application Case of Intelligent Dispatching Terminal for Forklift

The plant is an auto part factory, and the mould warehouse has a large number of auto parts moulds. Necessary moulds for the injection molding workshop can be acquired from the specified location of the mold warehouse through forklifts; meanwhile, moulds that have been used are to be placed to the original position in the warehouse by forklifts again, so the dispatching efficiency of forklifts determines the overall working efficiency.

Applications:

1. Each forklift is equipped with an industrial panel PC (7 inch);
2. The industrial panel PC is installed on forklifts, and communicates with the server via WIFI;
3. The forklift dispatching software is combined with the factory map, which allows users to intuitively know the position of moulds on the warehouse; and users can know the specific location of each forklift from the total dispatching room;
4. Dispatching efficiency can be maximized through these programs.

5.3 Textile Operating Interface

Users can use configuration software developed on their own or purchase third-party configuration software by RS232/RS485/RS422 interfaces of embedded industrial panel PCs, and by communicating with the controller (may be microcontroller control panel, PLC or control module). The application method has many benefits, since the software encryption is good and cannot easily be copied by other manufacturers. Because it is customized, users can enjoy many managerial features, which is not available for common configuration software.