



TL-3000 Wireless Touch Panel Operation Manual

Rev. 1.1

This document was prepared and written by the Technical Documentation Team of
Union Control Co., Ltd.

Table of contents

1 GENERAL	- 1 -
1.1 PRODUCT OUTLINE	- 1 -
1.2 HARDWARE COMPOSITION	- 1 -
1.3 CHARACTERISTICS AND FUNCTIONS	- 2 -
1.4 SPECIFICATIONS	- 2 -
1.5 PORT DESCRIPTION	- 3 -
2 INSTALLATION	- 4 -
2.1 EXTERNAL DIMENSIONS	- 4 -
2.2 ETHERNET NETWORK	- 5 -
2.3 POWER SUPPLY	- 5 -
2.4 SWITCH	- 5 -
3 PROGRAMMING	- 5 -
3.1 SETUP	- 6 -
3.2 PROGRAMMING PROCEDURES	- 7 -
3.3 COMMUNICATION ESTABLISHMENT	- 7 -
3.4 COMPILING AND UPLOADING	- 8 -
4 APPLICATION EXAMPLE	- 9 -
4.1 CONTROL CENTER	- 9 -
4.2 MEETING ROOM	- 9 -
5 TROUBLESHOOTING	- 10 -
5.1 TROUBLESHOOTING CHECKLIST	- 10 -
5.2 CORRESPONDENCE	- 10 -
6 WARRANTY	- 10 -

1 General

1.1 Product outline

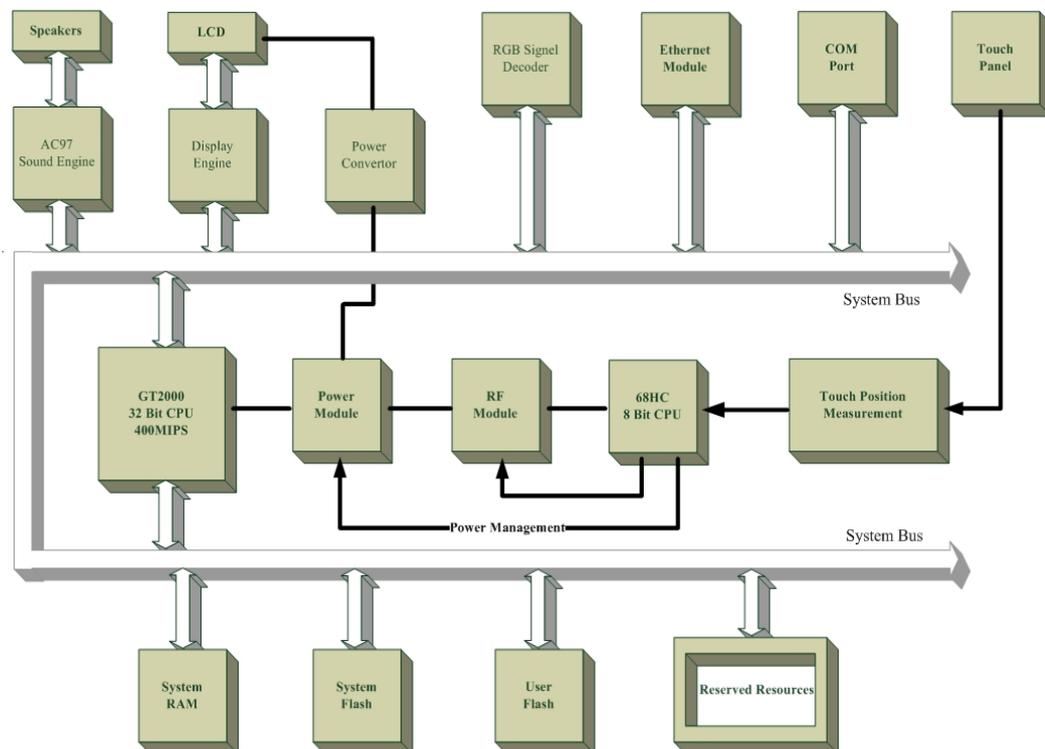
TL-3000 wireless touch panel is a programmable multipurpose wireless two-way controlled touch panel used in conjunction with TL-RFX wireless transceiver. It may be used as the user interface terminal for all types of man-machine systems.

When it is programmed with the integrated development software packages “Logic Master” and “Vision Master” in WINDOWS environment, the device may satisfy varied requirements for different applications.

The “Vision Master” software is intended for creation of display interface for the TL-3000 wireless touch panel. At the same time, the “Logic Master” software is used to compile control and operation commands for the TL-3000 wireless touch panel so that the device can exchange information with the TL-RFX wireless transceiver by RF means.

The TL-3000 wireless touch panel system runs an embedded LINUX operating system which is similar to that used on a traditional PC. The embedded LINUX OS receives the commands from control program and manages the I/O operations of all ports. Stored in FLASH, the OS requires no user’s intervention or deletion. Under the most circumstances, programmers do not need to set the OS as it has been properly done at factory.

1.2 Hardware composition



As shown in the diagram, the TL-3000 wireless touch panel comprises a series of high performance chips and IC's in clear and reasonable structure. The core of the system is a robust embedded 32-bit CPU and an auxiliary 8-bit CPU. The system expands its multifunctional interfaces through high-speed bus and offers the capacity of processing all types of information at high speed as image processing and network information is directly connected to the CPU bus

1.3 Characteristics and functions

When used in conjunction with a TL-RFX wireless transceiver, the TL-3000 wireless touch panel may serve as a self-sustaining system or a control and display terminal for diverse human-machine systems. It is designed for the applications in industrial, commercial or civil network control systems. The TL-3000 wireless touch panel communicates with the TL-RFX wireless transceiver by RF means. 16 frequencies near the common frequency range 433MHz can be configured for the TL-3000 wireless touch panel. It is possible to interconnect several TL-3000 wireless touch panels and TL-RFX wireless transceivers. One local ID address and several (up to 15) remote digital ID addresses can be assigned to the TL-3000 wireless touch panel or TL-RFX wireless transceiver respectively at the same frequency. 1 panel to multiple transceivers, one transceiver to multiple panels, multiple transceivers to multiple panels and other types of interconnection of several transceivers are possible by setting corresponding local digital ID address and remote digital ID address. Namely the TL-3000 wireless touch panel and TL-RFX wireless transceiver may be set to a wireless communication network up to 16 devices in any combinations.

The TL-3000 wireless touch panel uses a 32-bit GT2000 CPU whose superior display and drive capability, real-time, preemptive, multitask, multithreading program structure give powerful support to complicated applications, multi-file system, long file name, diverse displays of vector words and type fonts, built-in durable lithium batteries and intelligent power management module. Its characteristics of high speed, low power consumption, large-capacity storage and high liability extremely apply to the following applications: command center, control center, meeting room, building control, e-classroom, media management center, video meeting environment, remote education, home automation, etc.

1.4 Specifications

Specifications of TL-3000 wireless touch panel

Items	Description
CPU	32 Bit GT2000 Processor 400MIPS
CPU, auxiliary	8 Bit Motorola 68HC908AP32
Memory	192MB(128MB NAND flash, 64MB SDRAM)
Touch film	Four-wire resistance inductive

RF frequency range	433MHz
RF frequencies	16 selectable frequencies, interval 400KHz
RF wireless communication	Two-way
Range of RF wireless communication	Open area: 100m; indoor: 70m
AC97 audio	Programmable audio output
Display size Resolution Brightness Color	6.4" 640*480 250cd/m2 True-color, 18 bits, 2.6M
Contrast Viewing angle LAN Power supply Outside colors	300:1 Left and right: 45°45°; Up and down: 35°15° RJ45 10/100M Ethernet 24VDC 2A charge power supply input Sliver and black
Power consumption	5W (typical)
Ambient temperature Relatively Humidity (RH)	5°C to 45°C 10% to 90%
Dimensions	(See below)

1.5 Port description

The TL-3000 wireless touch panel is as shown in the following diagram. It is silver and black in color and all external interfaces and buttons are on the rear side of the device.



Front view of TL-3000 wireless touch panel

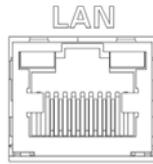
The functions of the ports are as follows:

- Power supply



The device is supplied with a 24VDC 2A external charge power supply which is used to charge the built-in lithium battery pack. It takes approximately 8 hours to charge it to maximum voltage.

■ LAN



10/100M Ethernet port and RJ45 terminal are supplied as standard to offer configuration, uploading, network communication and network control and other functions.

A standard cross network communication cable is supplied. The pins of the LAN port are assigned as follows:

PIN	SIGNALS
1	TD+
2	TD-
3	RD+
4	Connected to pin 5
5	Connected to pin 4
6	RD-
7	Connected to pin 8
8	Connected to pin7
1	TD+

2 Installation

2.1 External dimensions



(Unit: mm)

2.2 Ethernet network

The Ethernet port of the TL-3000 wireless touch panel is used to upload programs. Its factory default IP address is 192.168.0.111.

2.3 Power supply

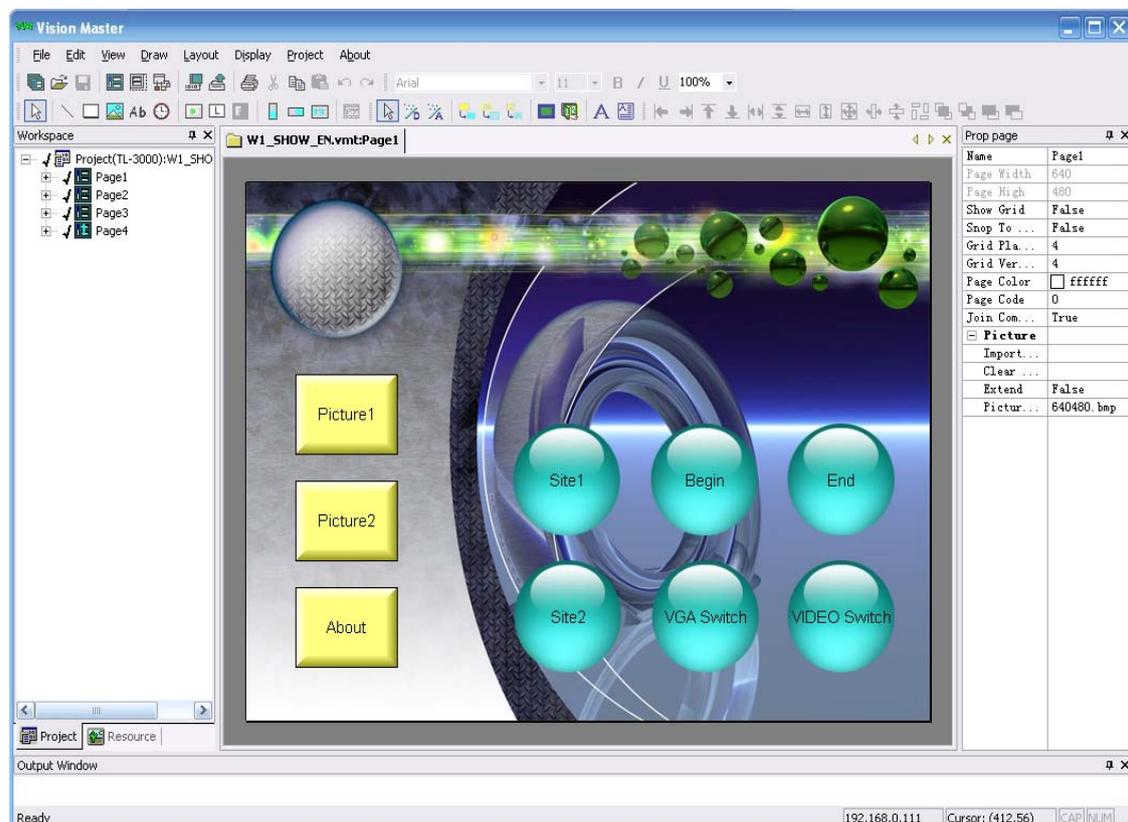
The power interface is used to input external power supply and charge the built-in lithium battery.

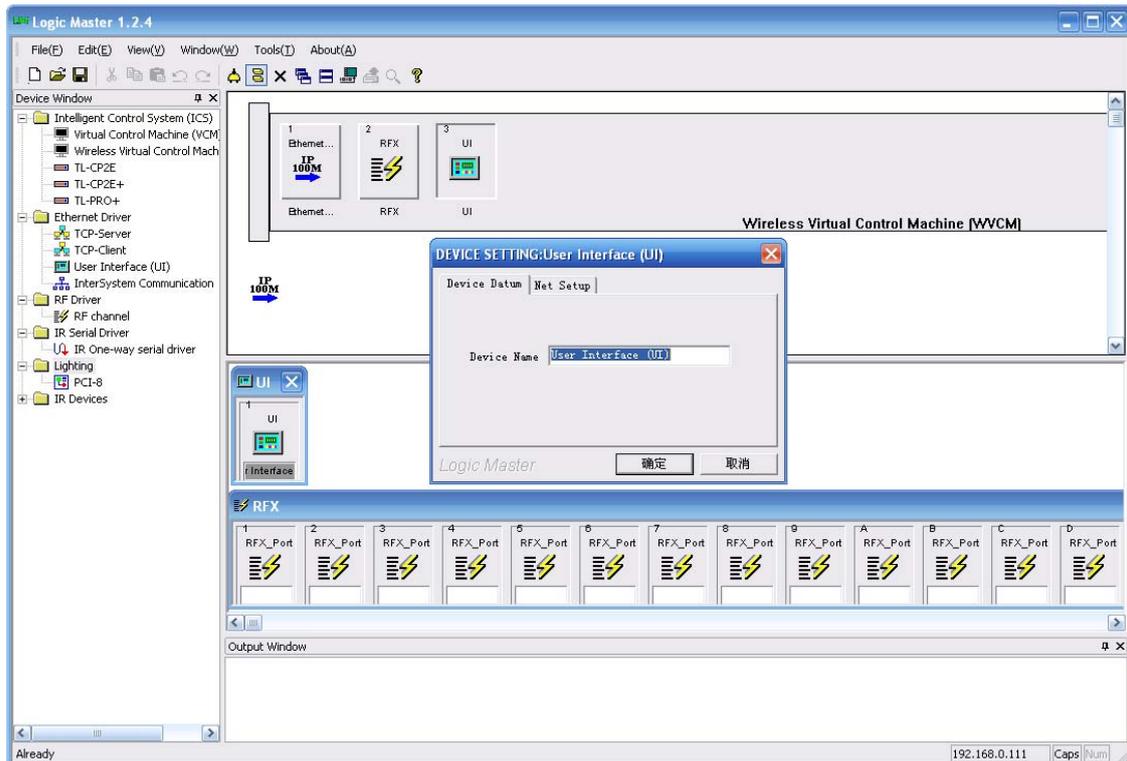
2.4 Switch

The touch panel enters into normal operating state when the switch is pressed. When it is left unused for an extended period of time or during long-distance transport, the switch shall be turned off in order to protect the battery and the related circuit. When the switch is turned on, the system takes approximately 30 seconds to start. It is not necessary to turn off the switch during normal operation.

3 Programming

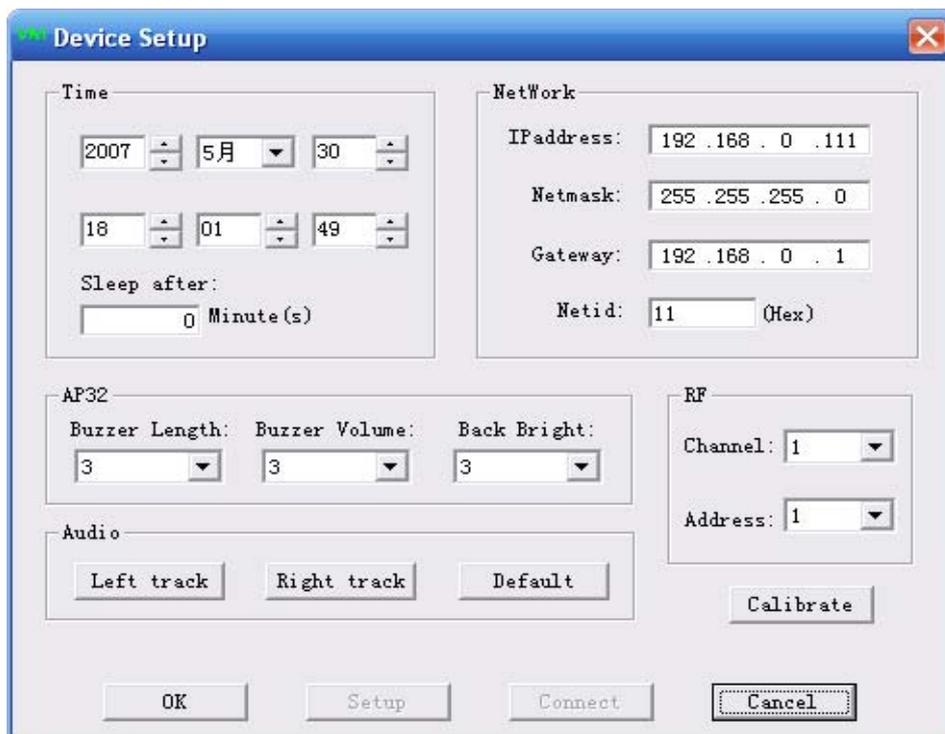
The software packages “Vision Master” and “Logic Master” is designed for the product series. It is a graphic integrated development environment (software package) based on WINDOWS interface. The “Vision Master” software is used to create viewing interface for the TL-3000 wireless touch panel. The “Logic Master” software is used to run the control programs including configuration logistic, time sequence and communication protocol.





3.1 Setup

All parameters of the touch panel can be set via the “Project/Device Setup” option in the menus of the software “Vision Master” or “Logic Master”. Before setup, an IP address shall be assigned to target device in the Setup option. If the IP address of the target device is unknown, it is possible to reset an IP address for it by following the descriptions in section “Communication establishment”.



For the TL-3000 wireless touch panel, the main settings of the device are as follows, including IP address, system clock, sleep time, length of buzzer, volume of buzzer, brightness of back light, volume of audio output (left and right channels), wireless frequency, local wireless ID address, etc.

3.2 Programming procedures

To program the TL-3000 wireless touch panel, at first create a viewing interface for it with the software “Vision Master”. The viewing interface is made in pages in which all type of control element can be created. Some control element can be assigned of join number and the others cannot. Two-way information transfer is possible between the control element that can be assigned of join number and control program. The assigned join numbers correspond to the signals in the control program one by one. The control elements that cannot be assigned of join number only function in display. Images or audio files may be attached to pages and some control element. Control tasks can be fulfilled by in more visual and direct way.

The viewing interface program may be compiled and uploaded after programming. Once it is successfully uploaded, the target device can run the graphic interface.

Then the “Logic Master” program compiles all controlling, displaying or running operations. Programming process is the interconnection of device module and logic module by selecting them depending on their functions. “Logic Master” Software provides adequate device modules and logic modules to satisfy the different requirements for all type of requirements.

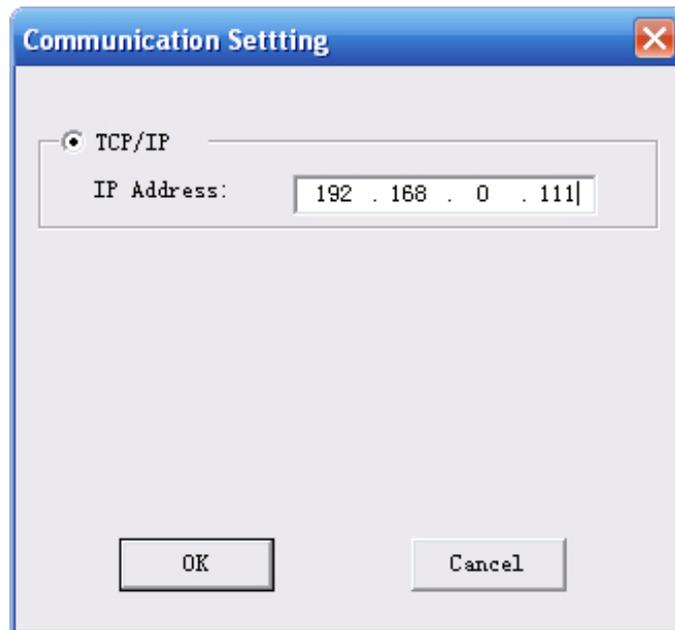
If you are good at using these two programs, you will find that one function can be fulfilled in many ways. The “Vision Master” and “Logic Master” offer you a flexible platform for representation of creativeness.

Refer to help documents of the “Vision Master” and “Logic Master” for more information.

3.3 Communication establishment

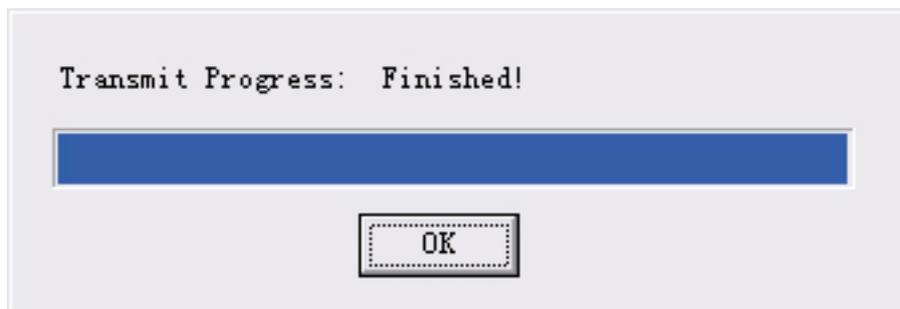
For whichever “Logic Master” or “Vision Master”, communication with the TL-3000 wireless touch panel must be established before unloading a program. At first, connect a PC to the TL-3000 wireless touch panel with the cross network cable. Then set the factory default IP communication address: 192.168.0.111. The PING command in the PC may be used to check that the communication network is established. It is also possible to directly connect it to a LAN through a HUB with the “straight through” network cable.

When the IP address of the current device is unknown, restart it and keep the touch panel pressed for approximately 5 seconds. The system will give five short beeps and automatically restore the factory settings when the settings are successfully recovered. The IP address is 192.168.0.111 by default.



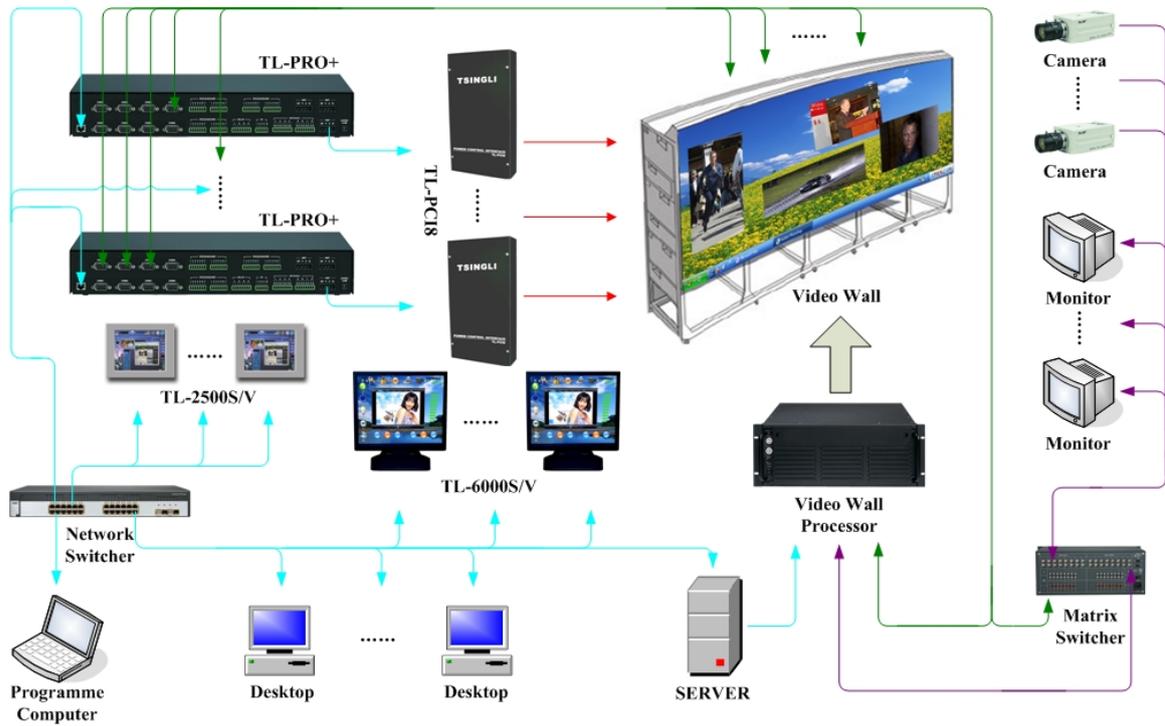
3.4 Compiling and uploading

For whether “Logic Master” or “Vision Master”, programs must be compiled before uploading them. The compilation of programs can be completed simply by pressing the “Project/Compile Project” menu or F12 hot key. Caution: The program with severe errors cannot be compiled or uploaded. The compiling process is indicated by a progress bar. After compilation, the system will ask you whether to upload the program or not. Select “YES” to upload the program. The uploading progress is also indicated by a progress bar. The uploaded program will be automatically stored in TL-3000 and will not be lost after each power-off. The uploaded program will automatically run.

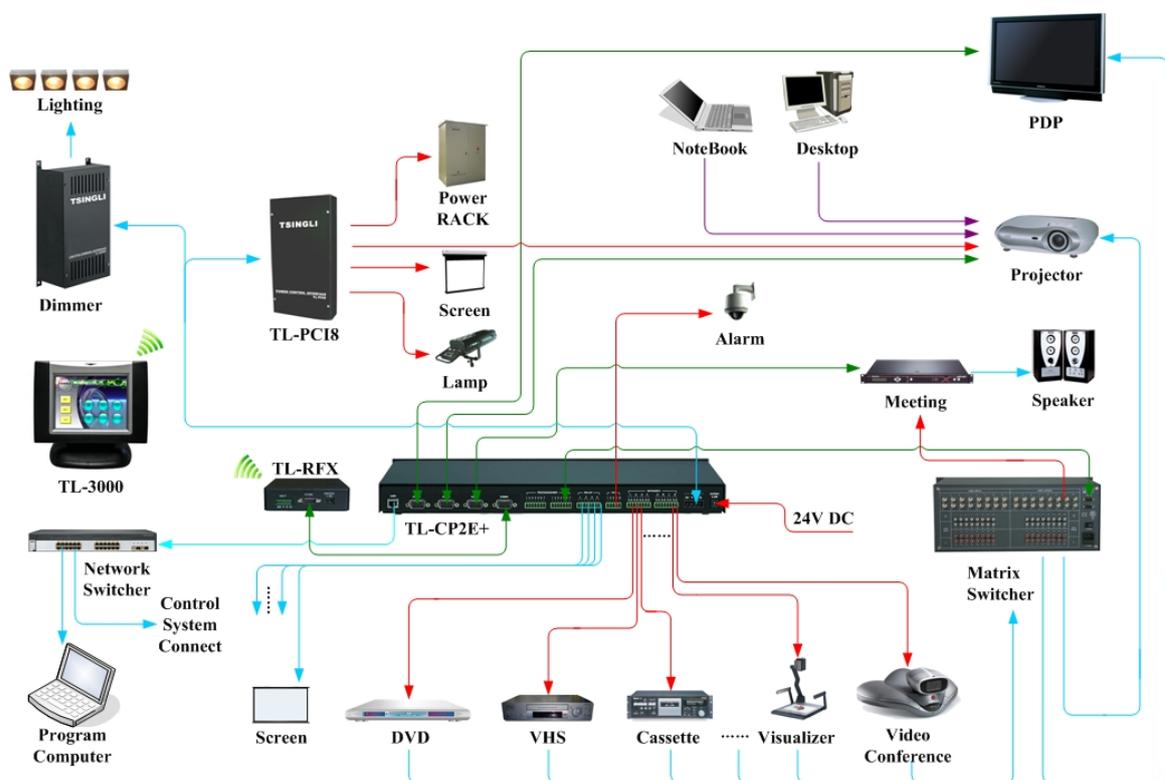


4 Application example

4.1 Control center



4.2 Meeting room



5 Troubleshooting

5.1 Troubleshooting checklist

Symptom	Possible cause	Solution
The touch panel does not display.	The switch button is not pressed down.	Press down the switch button.
	The touch panel is in sleeping state.	Gently touch the touch panel to exit from the sleeping state.
	Inadequate voltage.	Connect it to external power supply to charge the batteries.
The touch panel does not give any sound.	Erroneous program	Check and rectify the program.
	Excessively low volume	Adjust the output volume with software.
Communication cannot be established.	Communication cable not connected	Check that network cable is securely connected to target device.
Compiled program can not upload	The program is not saved.	Check and save the program.
	Erroneous program	Check and rectify the program.

Note: Contact your dealer for other troubles.

5.2 Correspondence

For further assistance, please email to public@unioncontrol.com or directly call us. Our service hotline is +86-10-62243207 62265816 62265186.

Our website: www.unioncontrol.com

6 Warranty

Union Control Co., Ltd. warrants the Products to be free of defects in materials and workmanship for a period of three (3) years from the date of shipment except the components stated below. We pledge to repair or replace defective disk drive or mechanical components requiring adjustment, power supply unit and display elements of touch panel within one (1) year and for touch elements of the touch panel and batteries within 90 days from the date of shipment.

The warranty period shall commence from the date of delivery to user, which shall be recorded in writing.

This warranty does not apply to any defects resulting from any action of Buyer, including but not limited to improper installation, misapplication and mishandling, accidental damage, unauthorized modification and intended damage. In no event will we be liable to you for any damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use or inability to use the products.

We will, at our sole option, repair or replace defective device or component. Any repaired device or component reserves 90 days of warranty and the warranty period prior to that will automatically become invalid.

We reserve the final right to interpret the section.