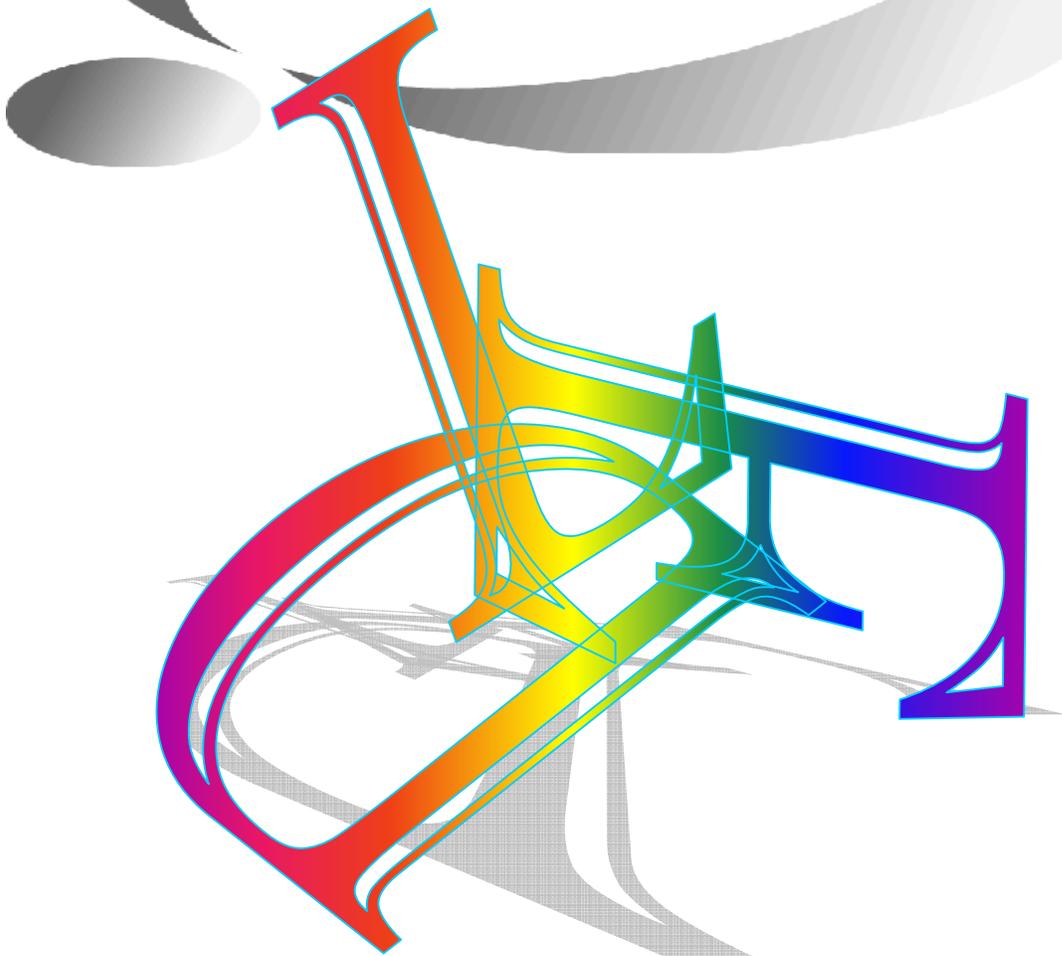


WZP2006 Series

USER MANUAL



LED ELECTRONIC DISPLAY

Version: **1.3**

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User Manual of WZP2006 LED Sign

Outline

WZP2006 series LED sign is a new type of LED sign product developed by our company. It is designed for larger size and low-cost LED sign. The maximal sign size (resolution) for without gray is up to 256(H)×2048(W)pixels, and the maximal sign size (resolution) for with gray is up to 256(H)×512(W)pixels. There are two standard communication modes RS232 and RS422, and some optional communication modes such as general Modem, GSM Modem, GPRS Modem and LAN(TCP/IP) for user select.

We developed powerful PC software to control WZP2006 series LED sign. It is “WZP Sign Software” program and designed for Windows(R) 9x/NT/2000/XP/7. The current version does not support infrared remote control programming.

User may choose WZP2006 for little LED sign as small as 8×32 pixels to obtain the outstanding features of this produce.

Features

Our company uses the latest achievements in WZP2006 LED sign.

- **Maximum resolution for without gray:** 256(H)×2048(W) pixels, maximum height is 256pixels, maximum width is 2048pixels, such as, 256(H)×2048(W), 128(H)×1024(W), 128(H)×512(W), 256(H)×256(W), 32(H)×512(W).
- **Maximum resolution for with gray:** 256(H)×512(W) pixels, maximum height is 256pixels, maximum width is 512pixels, such as, 256(H)×512(W), 256(H)×256(W), 128(H)×256(W), 128(H)×128(W), 32(H)×512(W).
- **Memory size:** 16MB.
- **Fonts:** All fonts in Windows(R) system.
- **Color:** Seven kinds of basic colors such as red, green, yellow, white, blue, cyan, purple, nineteen kinds of combined color and custom color.
- **OS:** Real-time Multi-tasks Operating System LMOS. The screen can be divided into several parts displaying individually.
- **Standard interface:** RS232, RS422.
- **Optional communication mode:** General Modem, GSM Modem, GPRS Modem, 3G Modem and LAN(TCP/IP).
- **Graphics:** bmp, gif, png.
- **Animation:** gif animation.
- **Symbol:** All Unicode symbol in Windows(R) system.

- **Date & Time format:** User-defined.
- **Temperature/Humidity/dew:** Can display temperature, humidity and dew point. The temperature and dew point unit is: Celsius, Fahrenheit or Kelvin, and the humidity unit is: %.
- **Decounter:** Count in days, hours, minutes, seconds.
- **Display methods:** 16 display methods. Auto, Immediate, Slide, Cover, Roll, Interlaced Slide, Interlaced Roll, Shutter, Jump, Snow, Random, Shoot, Explode, Twinkle, Flash, Pac man.
- **Message move speed:** 8 move speed from slowest speed 1 to fastest speed 8.
- **Pause Time:** 0~60 seconds pause time, or stop permanently.
- **Run in schedule:** 7 schedule modes. Run always, Run every year, Run every month, Run every day, Run every hour, Run on given date and time, Run on given time in given days.
- **System Upgrade:** Easily upgrade through RS232, RS422 interface.

■ *Thank you very much that you purchase our product*

After opens the packing box, please first inspects the fitting according to the detailed parts list. If there are something has damaged or lack, please contact your dealer as soon as possible!

■ *Statement*

Changes

Besides lists fitting along with the product disposition, the content of this manual contains doesn't represent pledge of the company. We reserve the right to make changes at any time in order to improve design and to supply the best product possible.

This manual may contain technical inaccuracies or typographical errors. Changes are periodically made to the information in this manual; these changes are included in new revision of this manual.

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All rights reserved. No content of this document may be copied, reproduced or translated. It should not be recorded, transmitted or stored in a retrieval system with other form without approbation of our company. Our company retains the authority that we can revise related documents of this series product at any time and not beforehand informs.

Return and repair

Parts that are replaced by spare parts can be returned to us for repair. Please enclose your name, address, phone number, and a clear description of symptoms. When getting returned parts, we will inspect, test and repair it and send it back as soon as possible. The repairing work is free for a period of two years from the date of shipment. Each will pay the transportation charges. This means, user will pay charges for transporting goods to us and we will pay charges for return.

We retain the right to refuse part that has been damaged due to the acts of nature or causes other than normal wear and tear.

If you have any other question to ask or need any other service, feel free to contact with us.

.CATALOG

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Foreword

In this part, described some information for this manual. Mainly includes:

- About this manual
- Reader for manual
- Content of manual

About This Manual

The manual is provided with WZP2006 LED signs. It described safety, installation, maintenance etc information for WZP2006 LED signs.

Reader of Manual

This manual is for the user, maintainer, technical personnel and whom need to purchase our product to write. Hope it will bring some help for you!

Mainly content of Manual

This manual includes six parts: Safety, Introduction, Mechanical Installation, Electrical Connection, Maintenance, and Appendix.

- Safety: Gives some safety indication.
- Introduction: Describes the basic information needed to use the system of WZP2006. Take time to read the entire introduction as it defines terms and explains concepts used through the manual.
- Mechanical Installation: Gives guidance on assembling and mounting.
- Electrical Connection: Gives guidance on terminating power, signal cable of the sign and communication mode of system.
- Maintenance: Describes such things as replacing basic display components or modules, troubleshooting the LED sign, performing general maintenance.
- Appendix: Lists the software, manuals referenced within this manual and other additional information.

Section 1: Safety

1.1 Safety guide

Personal protection

- ☺ Ensure you understand and follow all the safety guidelines, safety instructions, warnings and notes mentioned in this manual.
- ☺ Wear a hard hat to reduce the risk of personal injury.
- ☺ Be careful while working with heavy loads.
- ☺ Mind your fingers while working with heavy loads.

Installation personnel

The installation must be performed by authorized and qualified technical personnel only.

Accredited safety officers must ensure the safety of the site, construction, assembly, connection, use, dismantling, transport etc. of such safety critical systems.

Notes

Installation should be performed only after you are thoroughly familiar with all of the proper safety checks and installation instructions.

Do not modify and/or replace any component. We use specific materials and manufacturing processes in order to achieve part strength. Consult us for assistance with custom applications.

Always follow our installation manual. Contact us if you should have any question regarding the safety of an application.

Product care

Structural and mounting components should be kept clean and otherwise maintained in a manner consistent with part design. Our products must be used in a manner consistent with their design and inspected on a routine basis for security, wear, deformation, corrosion and any other circumstances that may affect the load handling capability of the part.

This product should be operated from the type of power source indicated on the marking label. If you are not sure of power available, consult your dealer or local power company.

We recommends inspections at regular intervals for all installations and increasing in frequency for more critical installations. If a part is found to have damage, which may cause a decrease in load capability, the part must be removed for service or replaced immediately.

1.2 Important Safety Precaution

- Read and understand these instructions.
- Heed all warnings.
- Follow all instructions.
- Personnel must be professional to installing and maintenance.
- Unplug this product from the electrical outlet before cleaning. Clean only with materials or chemicals that are inert, nonabrasive, noncorrosive and non-marking. Consult the manufacturer for further advice should any doubts exist regarding any cleaning procedure.
- Do not block ventilation openings.
- Avoid locations that are subject to direct sunlight (except outdoor models), excessive heat, moisture and dust such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Don't defeat the safety purpose of the polarized or grounding type plugs/sockets. If the provided sockets/plugs are damaged then replacement of the defective parts must be undertaken immediately.
- Protect the power/data cables from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. Replace damaged power/data cables immediately.
- Only use accessories specified by the manufacturer.
- Disconnect the power to this apparatus during lightning storms or provide suitable additional lightning protection. Unplug this apparatus when unused for long period of time.
- Refer all servicing to qualified service technicians/personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cable or plug is damaged, the apparatus does not working normally, or has been dropped.
- Use only with systems or peripherals specified by the manufacturer. Use caution during lifting/moving or transporting to avoid damage by possible tipping.
- Please check truss installation when you mounting the Sign.
- Must know the weight for this system before mounting.

1.3 Important Warning

Important warning:

1. Danger of electric shock

Don't open or touch! To reduce the danger of electric shock, don't remove cover.



The lightning flash with an arrowhead is intended to tell the user that parts inside the product may cause a danger of electrical shock to persons.

2. Danger of fire

To protect against danger of fire by overloading of power cables. Power cable may be connected in parallel. Each power source cable supplying for sign should be protected by a circuit breaker or fuses rated.

3. Working environment

Temperature: -10°C to +40°C.

Humidity: 15%~95% RH.

4. Electro-Static protect

LED components used in sign are Electro-Static discharge sensitive. To prevent the possibility of destroying LED components do not touch either in operation or while switched off. Servicing or maintaining must be with anti-static instrument (such as ESD hand/heel straps).

5. The equipment must be earthed

In order to protect against danger of electric shock, the installation should be properly grounded. We recommend a resistance to ground less than 10 ohms.

6. Power cables

The power cables delivered with this system have special properties for safety. They are not user serviceable. If the power cables are damaged, replace only with new ones. Never try to repair a power cable.

7. Data cables

The data cables provided with this system have special properties for safety. They are not user serviceable. If the data cables are damaged, replace only with new ones. Never try to repair a data cable.

8. Keep flammable materials away from the equipment (such as curtains). A lot of heat emanated from Sign while working. Proper ventilation must be provided.

Section 2: Introduction

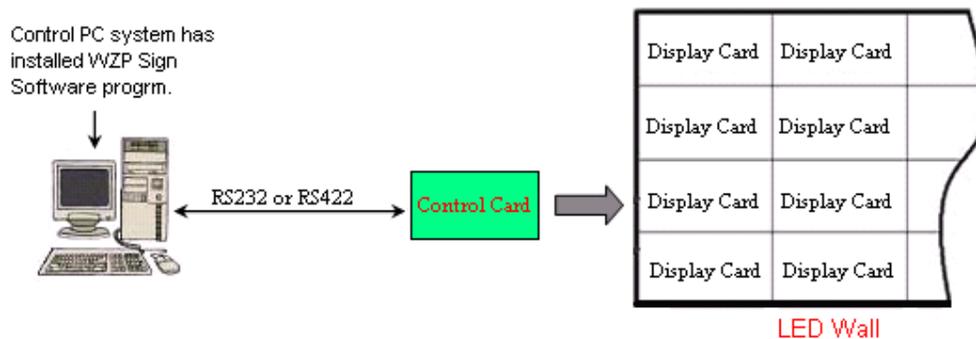
This system is WZP2006 LED sign for indoor use. In this part, we will describe some basic information for our WZP2006 LED sign.

2.1 System overview

The fundamental elements of WZP2006 LED sign are following:

- LED display card(build to LED display wall)
- Control card
- PC software

Following is the general block diagram of WZP2006 LED sign system.



[Fig2.1 Block diagram of WZP2006 LED Sign]

- 1) The control PC must install “WZP Sign Software” program.
- 2) In general, WZP2006 LED sign adopts RS232 or RS422 mode to communicate with control PC. And it needs the control PC to have at least a COM port. There are some optional communication modes such as Modem, GSM modem, and TCP/IP. These modes need Modem, or GSM modem, or other devices between control PC and sign. The more information of each communication mode will be described in latter content.
- 3) The control card is installed in LED sign.
- 4) Control card receives data/signal from control PC and transmits it to display cards after processing.
- 5) The LED sign system must be connected to earth-ground. Proper grounding is necessary for reliable equipment operation and protects the system from damaging

electrical disturbances and lightning. Grounding resistance must be less than 10 ohm. A proper grounding electrode must be pre-buried.

2.2 Technical Specification

Table1 lists the general technical specification of WZP2006 LED sign.

Table1 Technical Specification

Item	Technical Parameters
Color Displayed	Red, Green, Yellow plus 18 color combinations
Pixel Pitch choice(mm)	4.0mm, 4.75mm, 7.62mm, 8mm, 10mm
MAX. Display Resolution	256(H)×2048(W)Pixels
Viewing Angle of LED	Horizontal: 160°, Vertical: 160° or customized
Power Input	110/220V AC, 60/50Hz
Control Mode	Control by PC
PC Communication	RS232, RS422, Modem, GSM Modem, RF Modem or TCP/IP
Communication distance	MAX. 15meters for RS232, 1200meters for RS422
Memory Retention	Over one year
Continuous Working Time	Unlimited
Lifetime of LEDs	> 100,000 Hours
Working Temperature	-10 °C ~ +40 °C
Working Humidity	15% ~ 95%RH
Cabinet Material	Black Powder Coated aluminum

Note: Above table list the technical specification is about WZP2006 LED sign series. And the technical specification of different sign may have some difference, please refer to [Specification.doc](#) file for each sign.

2.3 Element identification

The following illustrations depict some of the more commonly accessed elements of WZP2006 LED Sign.

- **Display card**

Display card is an aggregation of some LED clusters/pixels and driver circuits. It may be a card with LED clusters/pixels and driver circuits or include driver card and lamp card. We call it as display card for expedience. It is a single functional unit that made up of a whole display wall.

- **Control card(WZPMAIN03-Ea)**

Control card is a mainboard of LED sign. It is used for receiving data/signal from control PC and transmitting it to scan card or LED display cards after processing. Fig2.2 shows it.

- **Temperature sensor**

Temperature sensor is used for getting temperature of environment or internal. It is needed when display temperature on sign. It is an optional element for system. So in some system, it may be no temperature sensor. Fig2.3 shows it.

- **Power Supply**

It is AC/DC adapter. Convert AC line voltage from the load centre to low DC voltage, and provides power for control cards and display cards. All the power supplies are switching power supply. Fig2.4 shows a power supply.



[Fig2.2 Control card]



[Fig2.3 Temperature sensor]



[Fig2.4 Power Supply]

2.4 PC Software

There is powerful PC software which named “WZP Sign Software” to manage WZP2006 LED sign. It is designed for Windows 9x/NT/2000/XP/Win7 by our company.

WZP Sign Software is a Windows application program designed for the WZP2006 LED sign. The main function of WZP Sign Software is message editor/manager and control LED sign.

The running file of this software is “Wzpsoft.exe” which saved in “bin” folder. User may double click the icon of Wzpsoft.exe to run this program.

It is allowed to control one and more WZP2006 LED sign simultaneously from a control centre through network connection.

Key features of “WZP Sign Software”:

1. Edit text file
2. Edit graphic (general image) file: *.bmp, *.png, *.gif
3. Edit animation file: animation “*.gif” graphic
4. Set data and time format
5. Set temperature type
6. Set decounter
7. Edit running descript file
8. Adjust the time on the sign
9. Read the information of sign
10. Change baud rate of sign
11. Configure the sign
12. Insert OS and font on the sign
13. Turn on/off power of sign
14. Restart sign
15. Clear memory of sign

System requirement:

The WZP Sign Software program has following minimum system requirements:

- Personal computer running Windows 9x/NT/2000/XP Home/Professional/Win7 with the most current updates installed.
- Personal computer using a Pentium 4 class, 2.0Hz or higher microprocessor.
- 512MB RAM or up (1GB RAM is recommended).
- CDROM Drive.
- Mouse or other pointing device.

- 100MB hard disk space or up.
- With display mode of 800×600, 16, 24 or 32 bit colors (1024×768, 32 bit colors is recommended).
- 10M Network or up

How to operate software?

“Wzphelp.exe” introduces operation for “WZP Sign Software” program. The “Wzphelp.exe” file is saved in the same root directory with “Wzpsoft.exe”. User may double click on the icon of “Wzphelp.exe” to open it. Or open it by “Help | Content” menu of “WZP Sign Software” window when running “WZP Sign Software” program.

Section 3: Mechanical Installation

3.1 Overview

Because every installation site is unique, there is no standard method of mounting. As manufacture of LED sign, we don't supply support structure, we can only provide recommending for the support structure design. It is customer's responsibility to ensure that the structure and mounting hardware are able of supporting the Screen, and according with local laws.

Support structure design depends on the mounting methods, screen size and its weight. The structure design is critical and should be done only by a qualified individual and organization.

The following must be considered first before installation:

- Design support structure and groundwork; calculate carefully the needed strength according to local codes; especially note the wind load and the issue of seismic zone.
- The mounting structure will provide a straight and square-mounting framework for the sign.
- If LED Sign is enclosed in an enclosure or casing, air-conditions are needed for cooling when the environment temperature reach 30 °C.
- Keep enough space for maintains.
- Prepare for routing power lines and signal/data cable connection. It is best to route power lines and signal/data cables in two separate conduits for safety and maintenance easily.
- Grounding consideration, we recommend grounding resistance must be less than 10 ohms.
- The relations of the LED sign's size with the distance of installing. The LED sign's size and the viewing distance should have the suitable proportion relations. The ordinary circumstances viewing distance may take the LED sign opposite angle line length 2~20 double, and the effect is better when the viewing distance is in 6~10 doubles.
- The angle of installing: When the LED sign installs, you should pay attention to the direction of LED element's light. When the LED sign installs at highly, should make the LED sign to maintain the certain inclination angle, that in order to causes the direction of shines direct to best viewing position.

- When the LED sign installed, we should pay attention to the influence of outside electromagnetic radiation to the LED sign.

3.2 Cabinet assemble

A LED sign is made up of one or many cabinets. A cabinet is also composed of small module elements, such as display card, power supply etc. Each cabinet has an exclusive label. All cabinets make up of the whole sign according as an arrangement rule. Following fig shows the arrangement rule.

Single face Moving Sign:

X _n	.....	X ₂	X ₁
⋮	⋮	⋮
B _n	.....	B ₂	B ₁
A _n	.....	A ₂	A ₁

Front View

Double-face Moving Sign:

MX _n	.....	MX ₂	MX ₁
⋮	⋮	⋮
MB _n	.....	MB ₂	MB ₁
MA _n	.....	MA ₂	MA ₁

(Master Sign)
Front View

SX _n	.....	SX ₂	SX ₁
⋮	⋮	⋮
SB _n	.....	SB ₂	SB ₁
SA _n	.....	SA ₂	SA ₁

(Slave Sign)
Front View



[Fig3.1 Cabinet arrangement]

Note: “X” denote a discretionary letter.

Assemble all cabinets into a whole display wall according as above arrangement rule.

Then fix them by bolt.

3.3 Common mounting method

The shape and size of LED sign are different; the use of them is diverse and the method of mounting is most changeful. There isn't the unification standard of the mounting. Following we introduced several commonly used method of mounting.

1) Hang type

Hang type include two types. One is hanging up at the ceiling or other beam (fig3.2a shows). The LED sign is hanging up at ceiling by the bracket. Another is hanging at wall (fig3.2b shows). The LED sign is hanging at wall by the bracket.

2) Swing type

Swing type is an especial of hang type. This method is hanging LED sign at wall by a bracket too. But the bracket have a suspend arm for Swing. Fig3.5 shows it.

3) Desktop installation

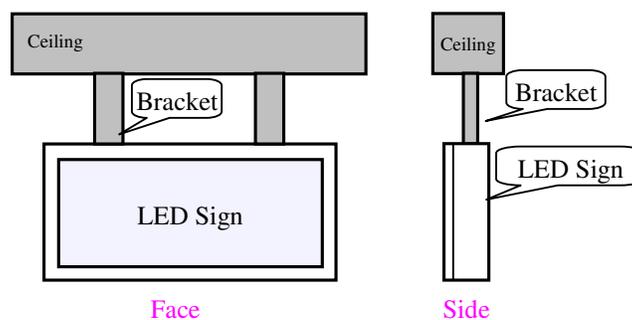
This method must design a pedestal to support the LED sign. And the LED sign is installed on the pedestal. Fig3.3 shows it.

4) Movable structure

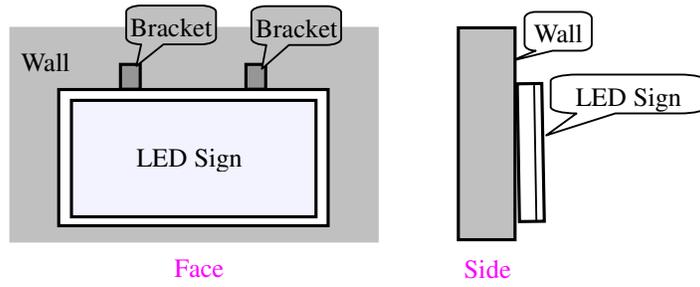
This method is base on desktop installation. It is different from desktop installation there are some wheels on the pedestal. So it can move easily. Fig3.4 shows it.

5) Insert type

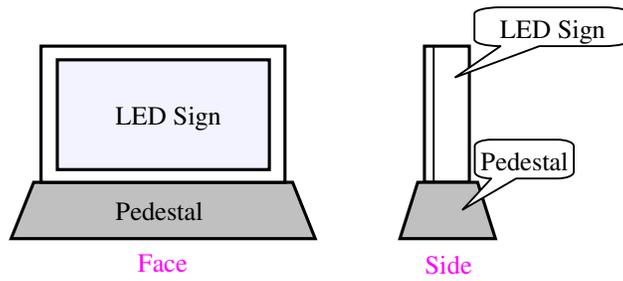
Insert type is a method that the LED sign is inserted in wall or other object. Fig3.6 shows it.



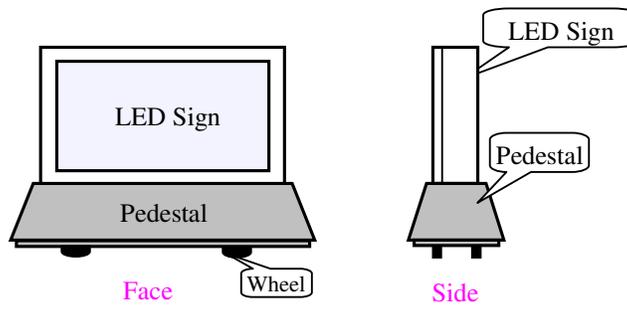
[Fig3.2a Hang type I]



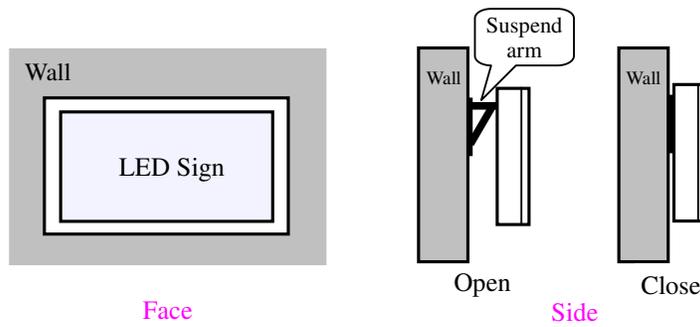
[Fig3.2b Hang type II]



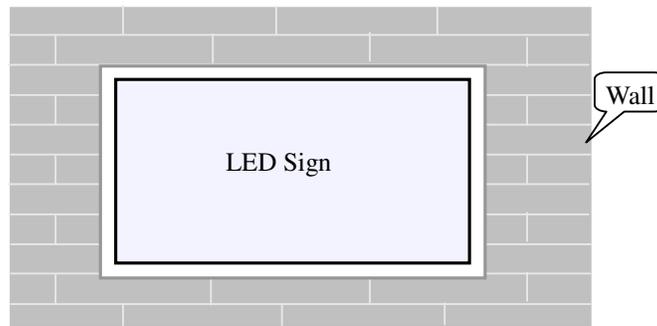
[Fig3.3 Desktop installation]



[Fig3.4 Movable structure]



[Fig3.5 Swing type]



[Fig3.6 Insert type]

Above mentioned methods is several commonly used method of mounting. About the small LED sign, we commonly use hang type or swing type. About the large LED display, we commonly use desktop installation or insert type. If the LED sign needs move frequently should use movable structure. Certainly, there are many other methods of mounting. We impossibility introduce all methods. User can choose an appropriate method of mounting according as your idiographic circs. And you can give your idea about mounting to us.

Warning:

All the mounting methods must be examined the backstop at first. And know the weight of whole display and accessory. User must sure the backstop can support the weight of the LED sign while mounting.

3.4 Mounting Process of LED Sign

Above content described some common mounting method simply. In general, we only supply hanging mounting and (or) wall mounting if consumer doesn't have any especial requirement. Following content will introduce the two methods.

3.4.1 Hanging mounting method

This mounting method is hanged the Sign on beam (ceiling) or truss. There are two hanging mounting methods for indoor LED sign. In general, most of indoor LED sign is small. And we provide the hanging mounting method 1 for these signs. But about few big sign used indoor, we may provide the hanging mounting method 2.

➤ **Hanging mounting 1**

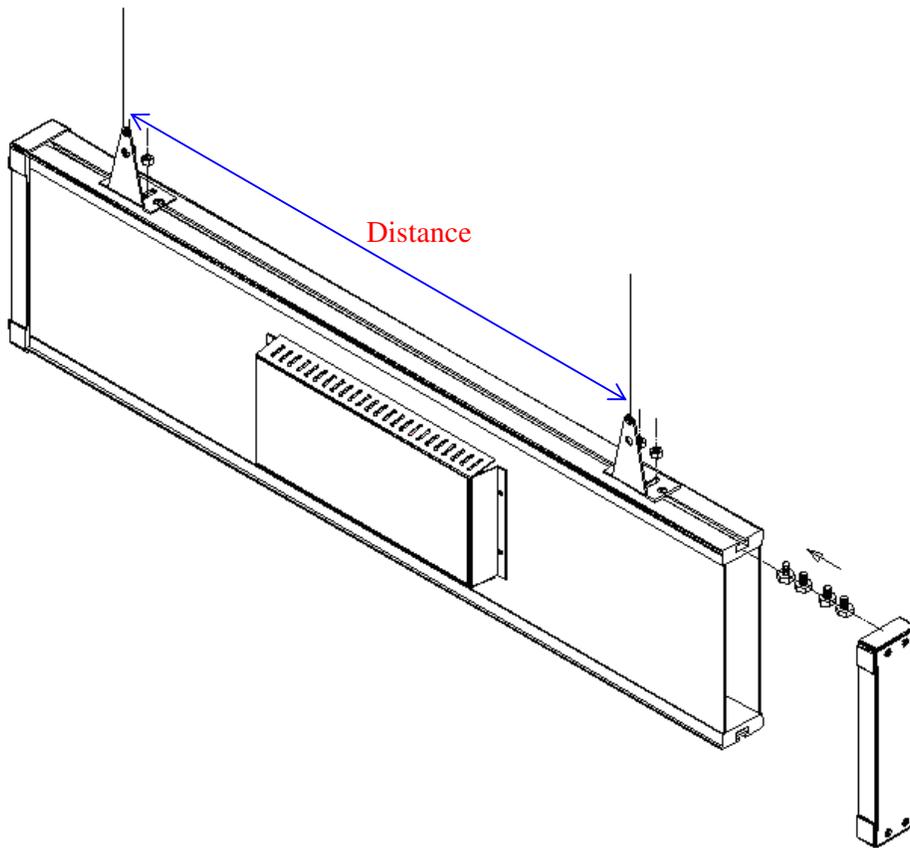
This mounting method is hanged the Sign on beam (ceiling) or truss. It needs two brackets and sling to mounting. The general mounting process is as following example described. It may be different from the factual operation.

Mounting process:



1. Fixed the two brackets onto the LED sign by screws, measure the distance between hang hole and hang hole on the two brackets.
2. On the ceiling or other truss install sling according to the distance measured in step 1.
3. Lift up the sign to the appointed height.
4. Hanging the sign at the ceiling or other truss by pegs.

User can refer to the following figure for mounting.



[Fig3.7 Hang mounting 1]

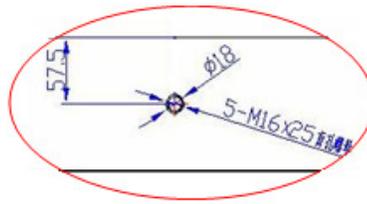
➤ **Hanging mounting 2**



Pothook



Stationary rings



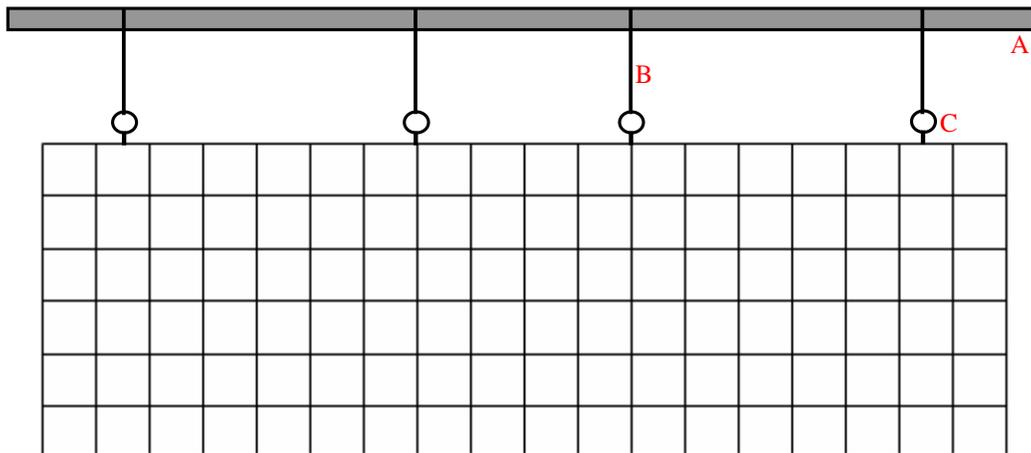
Top of cabinet

This mounting method is hanged the Sign on beam (ceiling) or truss. The general mounting process is as following example described. It may be different from the factual operation.

Mounting process:

1. Build up the truss installation or installing pothook.
Warning: Be sure that the truss installation complies with the local regulations regarding such installations and that the truss installation (or pothook) will be able to support the complete load of the LED sign.
2. Set up stationary rings on the top of cabinet.
The stationary ring is an eyebolt. User only tweaks the stationary ring into the screw on top of cabinet.
3. Lift up the Sign to the desired height.
4. Place a hoist steel cable or chain around the truss installation or pothook above the sign, and through the stationary rings on the truss beam. Use one hoist steel cable or chain per stationary rings.

Following fig shows the view of this mounting method.



A: Truss installation B: Hoist steel cable C: Stationary rings

[Fig3.8 Hang mounting 2]

3.4.2 Wall mounting method

This mounting method is mounted the LED sign on wall by bracket. There are two wall mounting methods for indoor LED sign. In general, most of indoor LED sign is small. And we provide the wall mounting method 1 for these signs. But about few big sign used indoor, we may provide the wall mounting method 2.

➤ **Wall mounting 1**

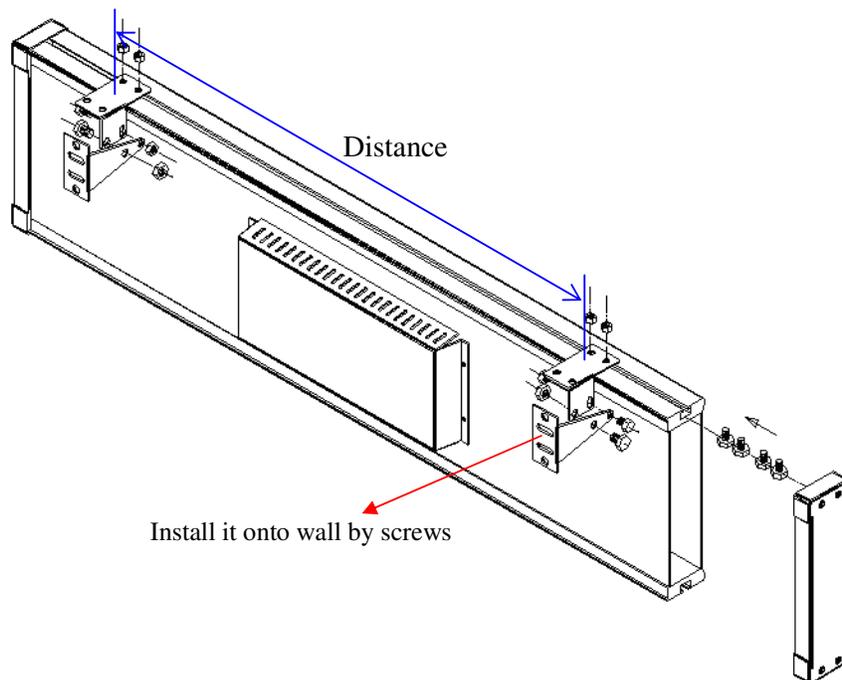
This mounting method needs two type brackets. We marked them as bracket-A and bracket-B for easy describing. The general mounting process is as following example described. It may be different from the factual operation.

Mounting process:



1. Fixed two brackets-B onto the LED sign by screws. Measure the distance between hang hole and hang hole on these two bracket-B.
2. On the wall or other truss install two bracket-A according to the distance measured in step 1. **Note:** Please confirm the high that you want to mounting before mounting.
3. Lift up the LED sign to the appointed height.
4. Fixed bracket-B to bracket-A by pegs or bolts. Now, the LED sign has fixed on wall.

User can refer to the following figure for wall mounting 1.



[Fig3.9 Wall mounting 1]

➤ **Wall mounting 2**

This mounting method used semicircular bracket to hang LED sign on wall. In general, it applies to big indoor LED sign that made up of aluminium cabinets. Following we will introduce the general mounting process of this method by an example. It may be different from the factual operation

Mounting process:

1. Build up the truss installation for fixing semicircular bracket onto wall.

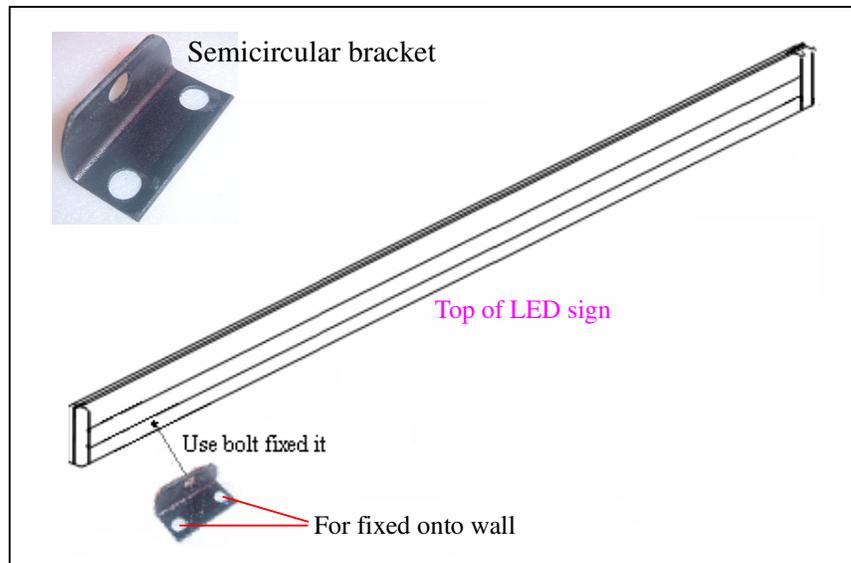
Warning: Be sure that the truss installation complies with the local regulations regarding such installations and that the truss installation will be able to support the complete load of the LED sign.

2. Assemble cabinets into a whole sign.
3. Installing the bracket on the cabinet (fig3.10 shows).

Use bolts to fix the semicircular bracket on the moving sign with semicircle side facing.

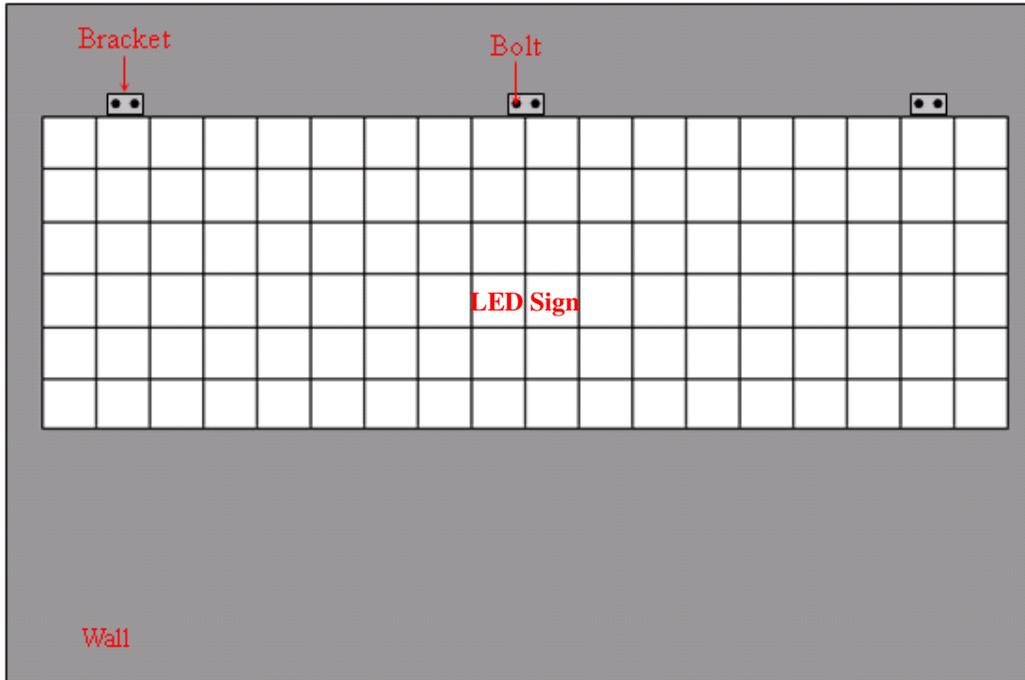
4. Lift up the Sign to the appointed height.
5. Use bolt to fix the bracket onto wall with rectangle side facing wall so that the moving sign is fixed on the wall.

Warning: User must confirm the distance between each bolt before fixed moving sign onto wall.



[Fig3.10 Installing bracket onto sign]

Following fig shows the view of wall mounting 2.



[Fig3.11 Wall mounting 2]

Note:

Before mounting, user must know the weight of whole LED sign and accessory. User must sure the backstop can support the weight of moving sign while mounting it. In fact, the number and size of bracket may be different with different sign. So figure of example may has some different of actual situation. But the operating process is as similar as it.

Section 4: Electric Connection

Electric connection includes power cable connection and data/signal cable connection. Safety firstly, please read the safety indication in section 1, and understands configuration of the system and the routing flow of power and signal.

4.1 Common connector & cable

The power and data/signal connections in the LED sign use many different types of connectors. Take special care when disengaging any connectors so as not to damage the connector, the cable, or the circuit board.

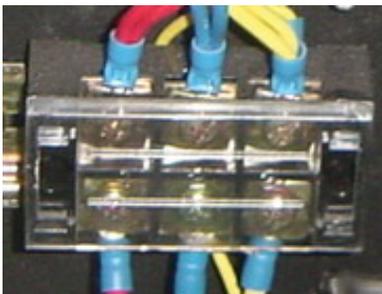
When pulling a connector plug from a jack, do not pull on the wire or cable; pull on the jack itself. Pulling on the wires may damage the connection.

The following information presents some common connectors encountered during LED sign installation and maintenance.



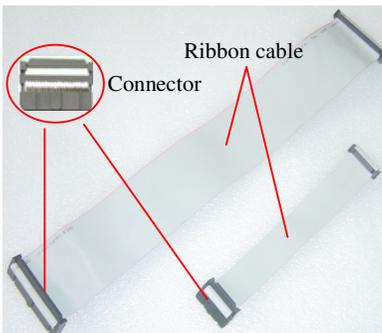
DB9 connector:

Usually used for external data or signal cable connection for communication.



Termination Block:

Usually used for internal power wires to wires of the same type coming into the cabinet from an external source.



Ribbon cable:

Usually used for internal data or signal connection. For example, between Display cards connection uses ribbon cables.



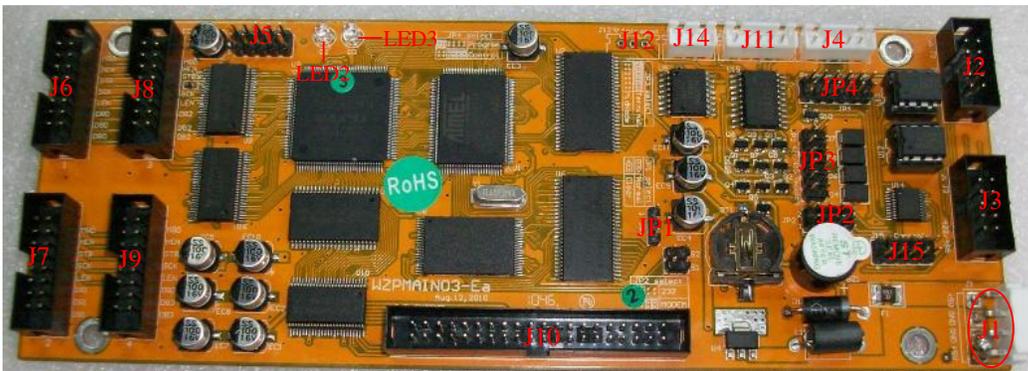
Power cable:

Usually used for internal power cable connection. The power supply connects to cards or Display cards by this cable. It is made up of four cables with two colors; red cable connects to “VCC”, and black cable connects to “GND”.

4.2 Card information

In general, WZP2006 LED sign mainly includes display cards, control card, power supply etc.. User needs to know the control card before connecting.

1. Control card (WZPMAIN03-Ea):



[Fig4.1 Control card]

Mainly port information of control card:

- J1:** Power input port, connect with +5V DC.
- J2:** RS232/Modem communication port.
- J3:** RS422/485 communication port.
- J4:** Light_Sensor port, for connecting light sensor.
- J5:** PLD_JTAG port. For download CPLD file from PC.
- J6:** Data output port 1.
- J7:** Data output port 2.
- J8:** Data output port 3.
- J9:** Data output port 4.
- J10:** Extend port. For connect with receiver-scan card while height of sign is large enough.
- J11:** Humidity port. For connect with outside humidity sensor.

J12: Infra-red port. Reserved port used for connect with IR receiver. It is disabled at present.

J14: TEMPER port. For connect with outside temperature sensor.

J15: Control port. Reserved port used for control external programming. It is disabled at present.

JP1: Jumper 1, for setting work mode. Connected Pin1 and Pin2() to set control card normal working. Connected Pin2 and Pin3() to set clear memory. No connected JP1 is normal working. The default setting is work mode. If set control card clear memory mode, the all contents in control card will be cleared after power on over again, the control card will resume to factory default settings. In general, we don't recommend setting control card clear memory mode, unless the sign has very serious fault.

JP2: Jumper 2, for setting J2 port as RS232 or Modem mode. Connected as "" ("1-2", "3-4") to set J2 port as RS232 mode. Connected as "" ("5-6", "7-8") to set J2 port as Modem mode.

JP3: Jumper 3, for setting terminal resistance of RS422/RS485 communication. Connected as "" ("1-2", "3-4", "5-6", "7-8", "9-10", "11-12") to set have terminal resistance. Connected as "" ("3-4", "5-6", "9-10", "11-12") to set MidNode mode. If there are many signs connected in network, the last sign must set have terminal resistance, and other signs must set MidNode mode.

JP4: Jumper 4, for setting load program or adjust time. Connected as "" ("1-2", "3-4") to set as load program mode. Connected as "" ("5-6", "7-8", "9-10", "11-12") to set as adjust time mode. The default setting is "adjust time" mode.

LED2: Communication status indicator.

LED3: Working status indicator.

4.3 Power cable connection

All power comes into LED sign through a power inlet, and connects with power supplies to supply power for display cards and cards.

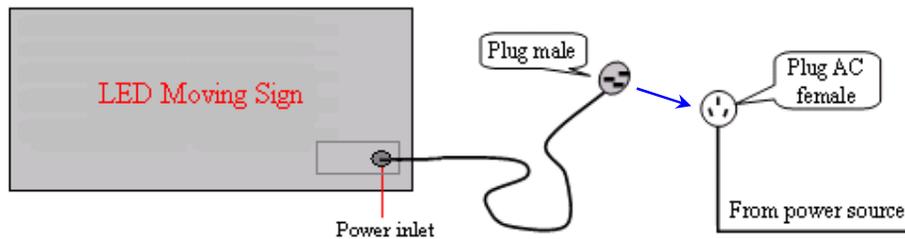
Power cable connection includes two parts: power cable connection of external and power cable connection of internal.

4.3.1 External power cable connection

The power cable connection of external is very simply. It needs to have electrical outlet (a Plug AC female) near the LED sign.

We use special designed sockets for power, data connection. And there is a special power cable with plug for connecting to power input socket.

User only needs to plug the plug male onto the electrical outlet (plug AC female). The plug male is connected with LED sign by power cable from the power input port on cabinet. The electrical outlet (plug AC female) is from power source. Following fig shows the power cable connection.



[Fig4.2 External power cable connection]

Warning: To protect against risk of fire by overloading of power cables, please know the load of power source cable and the power of sign. And must assured the power source cable can load the power of LED sign. It is best never connects other high-power equipment with a power source cable while it connect with LED sign.

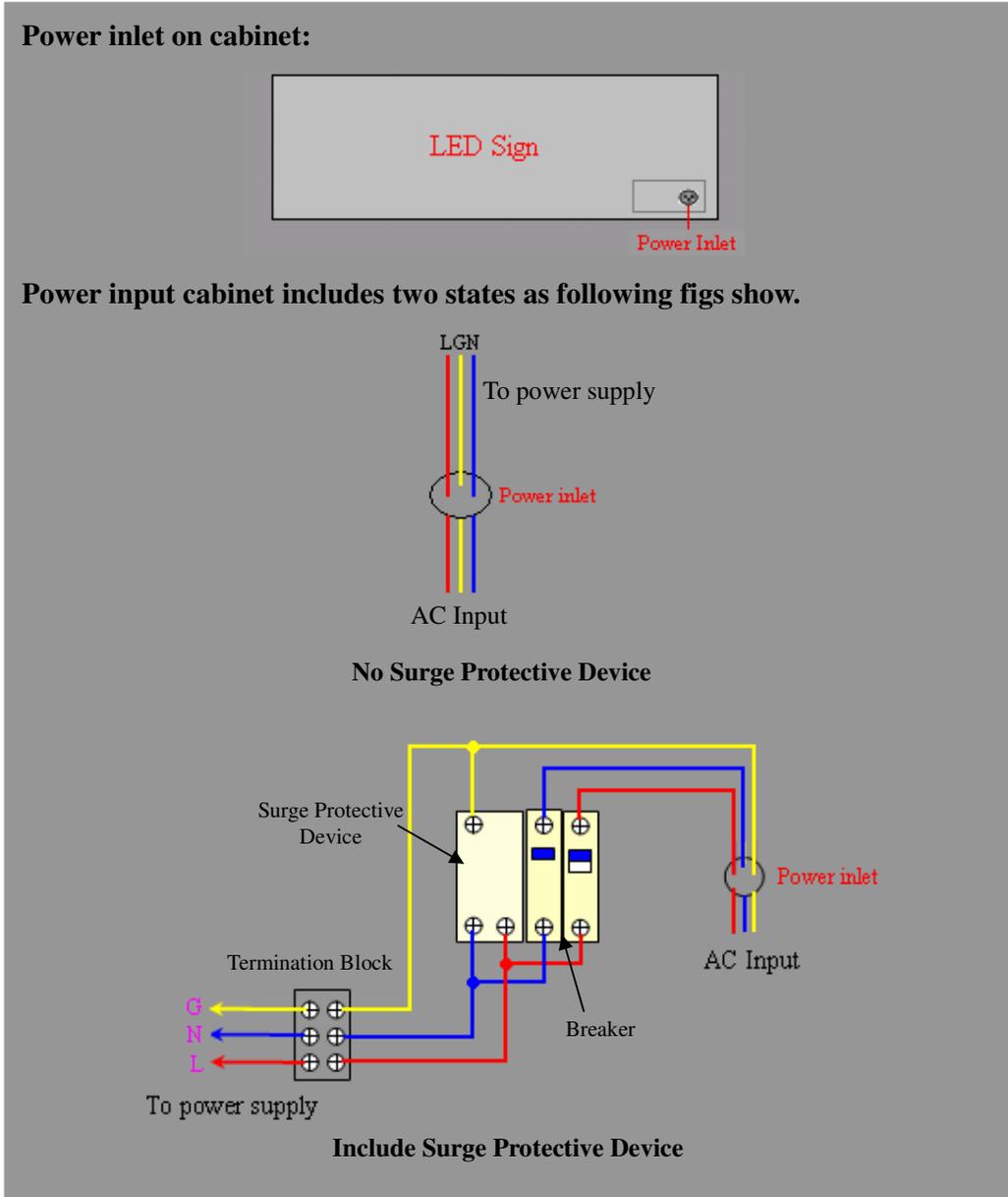
4.3.2 Internal power cable connection

In LED sign, display cards, control card, and other element need to be provided power by power supply. All power comes into LED sign through power inlet on cabinet. After power input cabinet, it always connects with surge protective device for safe, then connect to power supplies by power cable (Sometimes it connects to power supply without surge protective device). Power supply provides power for display cards and control cards so that it need connect power supply to display cards or cards

by power cable. One power supply may provide power for many display cards. In general, each row's cabinets need one route power line.

Following, we will introduce how to connect power cable in LED sign. It may have some difference in fact such as in cable's color, number of power supply etc.. But their connection is similar to following described.

Power input guide

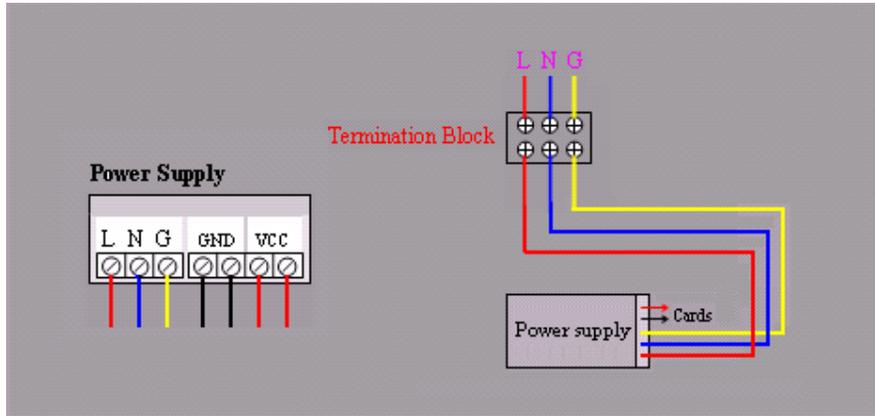


Note: Most of indoor LED sign doesn't have surge protective device.

Power supply connecting guide

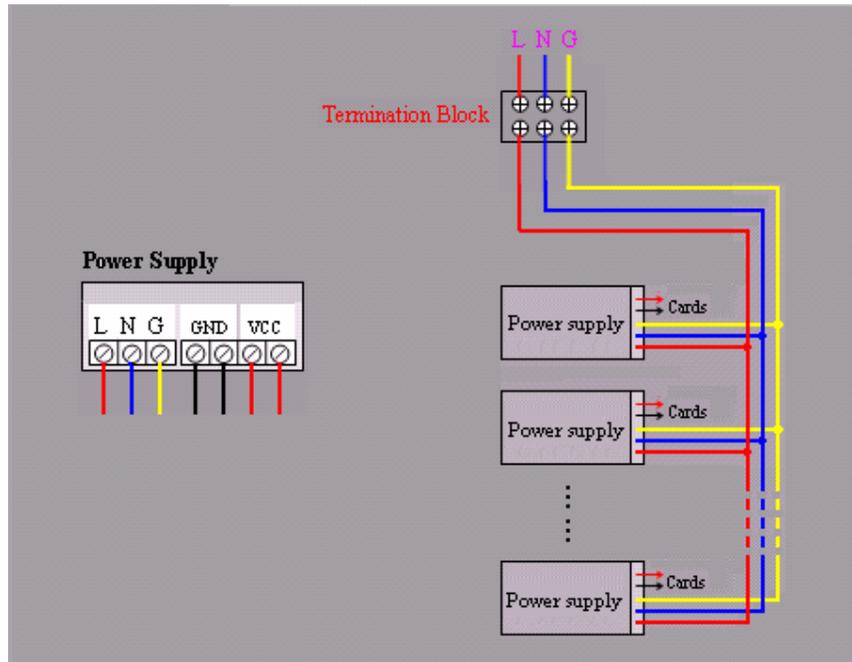
Cable connecting of power supplies may be different with different LED sign. One power supply may provide power for many display cards and control cards. In general, it may be divided three statuses.

- 1. Only one power supply:** It only have one power supply to provided power when LED sign is small. In this status, cable connecting is very simply. Following fig is a schematic diagram of cable connecting of power supply.



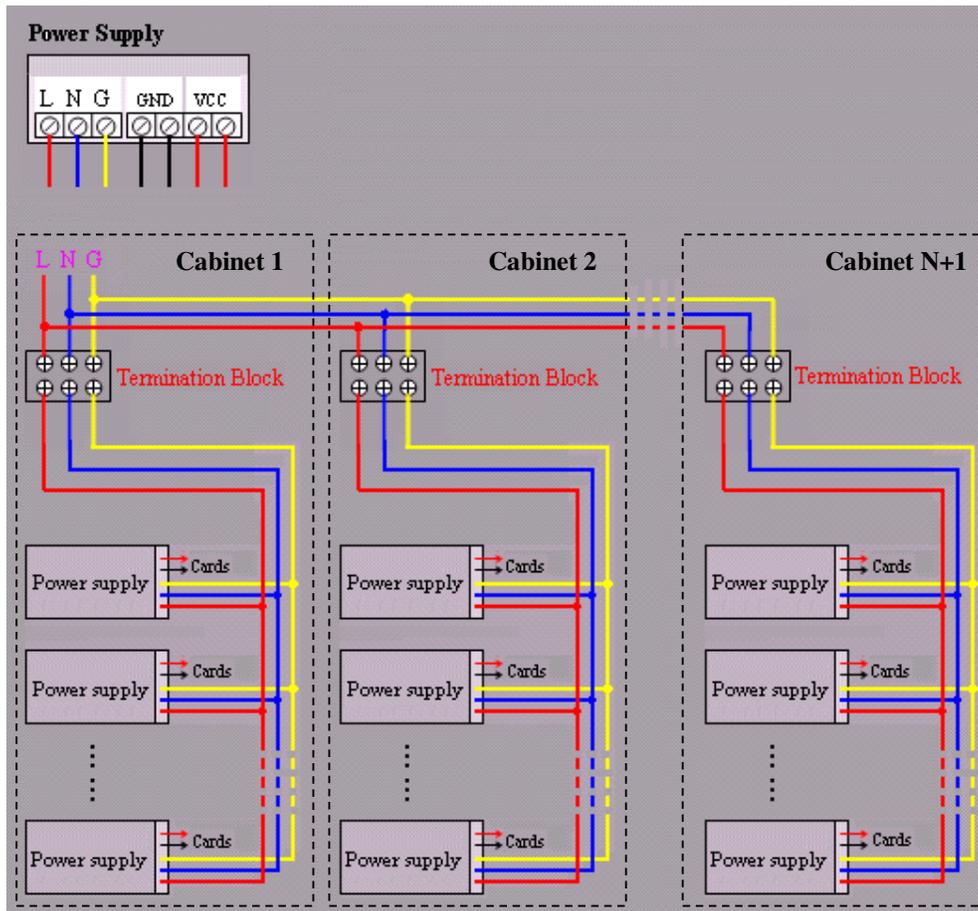
Remark: The color of cable may be different from fact.

- 2. More than one power supply:** Some LED signs may need more than one power supplies to provided power. In this status, all power supplies are connected in series. Following fig is a schematic diagram of cable connecting of power supply.



Remark: The color of cable may be different from fact.

3. More than one LED cabinet: Some LED sign is made up of many LED cabinets, And it may need one or more power supplies to provided power in each cabinet. Sometimes, the LED sign is so big that includes many rows cabinets. In general, each row's cabinets need one route power line. Power cable connecting of each row cabinets is all same. In this status, power supply connection is as similar as forecited two statuses. And the power supplies in adjacent cabinets of one row are connected by power cable. There are designed hole on cabinet in horizontal for through power and data cables. Following fig is a schematic diagram of cable connecting of power supply in one row cabinets.

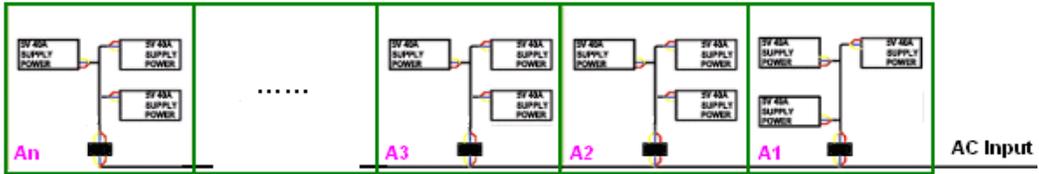


Remark: The color of cable may be different from fact.

Note: In general, The control card need +5V DC power. If it doesn't have power supply that output voltage is +5V DC, a power transform card is needed between power supply and control cards.

Example for power supply connection

The example below shows a big LED sign. It includes many cabinets, each cabinet installed three power supplies.



[Fig4.3 Example for power supply connection]

In fact, the LED sign has some different from above example, but the connection is as similar as it.

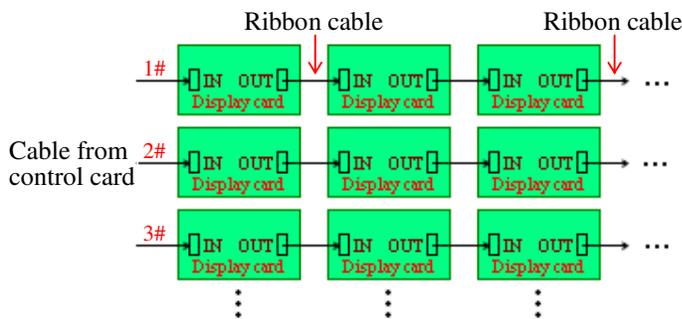
4.4 Data/Signal cable connection

Data/signal cable connection in LED sign includes display cards, control card, and so on.

First, we will describe data/signal cable connection between display cards. In foregoing content, we know data/signal transmit to display cards must be processed by control card. Data cables(it is ribbon cable in here) need connected between the output port of control card and the first display card's input port. Display cards in one row are connected by ribbon cables too. If there are many cabinets, between two adjacent cabinet has hole for through cables in horizontal and data cables may coming into next cabinet through the hole.

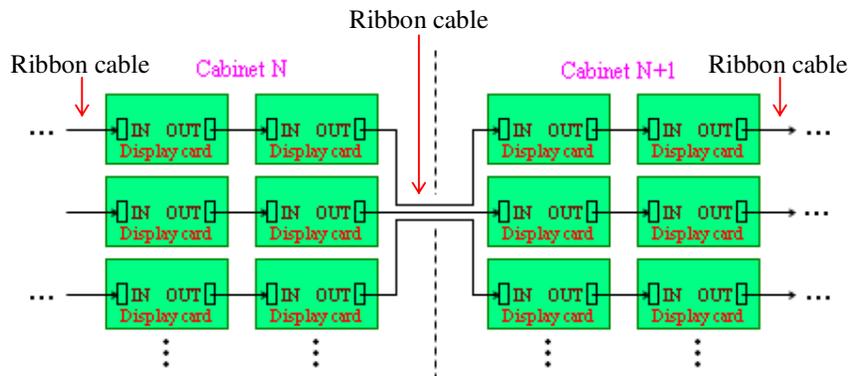
Example for Display cards connection

The first cabinet(installed control cards) data cable connection:



[Fig4.4 Display cards connection(I)]

Between two cabinets data connection:

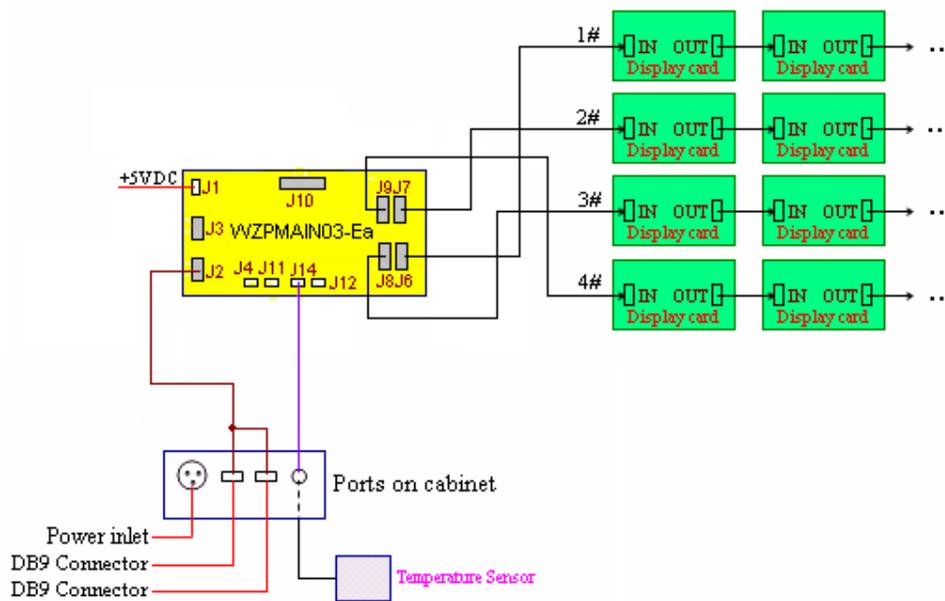


[Fig4.5 Display cards connection(II)]

Above contents has described data cables connection for display cards. Following will introduce control system connection in LED sign. The control system connection has some difference with different communication mode and different LED sign. In general, system uses RS232 communication mode or RS422 communication mode. There are standard interface for RS232 and RS422 connection on control card. Following give a schematic diagram for two modes connection.

RS232 connection

In general, the indoor LED-sign only has control card and display cards. Following fig shows an example to explain the general connection for RS232 communication.



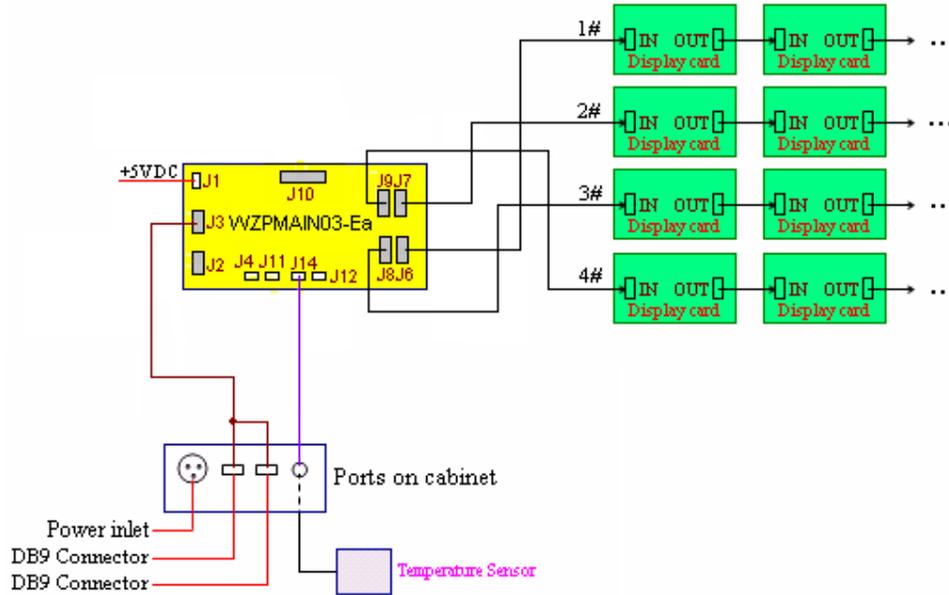
[Fig4.6 Data cable connection for RS232]

Note:

1. Temperature sensor is an optional device. And many signs may not have it. But it should be needed if the sign want to display temperature.
2. It must set port J2 as RS232 mode by setting jumper “JP2”(connected “1-2”, “3-4”) such as .

RS422 connection

This communication mode is as similar as RS232 communication. The only different from RS232 mode is communication with PC by RS422(J3) port. Following fig shows the general schematic connection for RS422 communication.

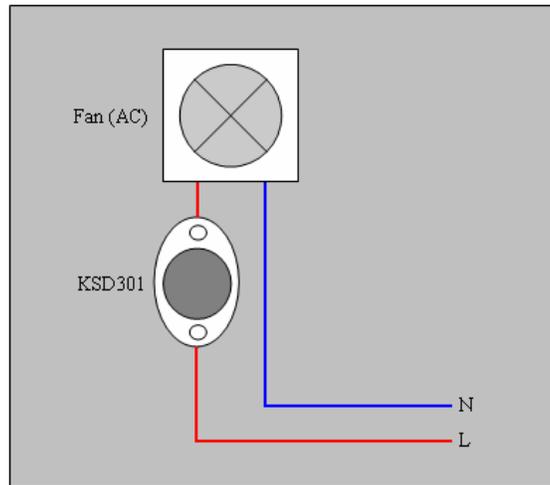


[Fig4.7 Data cable connection for RS422]

Note: Temperature sensor is an optional device. And many signs may not have it. But it should be needed if the sign want to display temperature.

4.5 Fan connection

In LED cabinet, it has designed a space for installing fan. User only needs fixed the fan on that space by bolt. Then connect it with a thermal switch (KSD301) by power cable. The thermal switch is installing on the plate that has installed power supply. Following fig shows the connection diagram.



[Fig4.8 Fans connection diagram]

KSD301--- Thermal switch that control fans turn on/off. When temperature is more than a defined temperature, fans will work automatically.

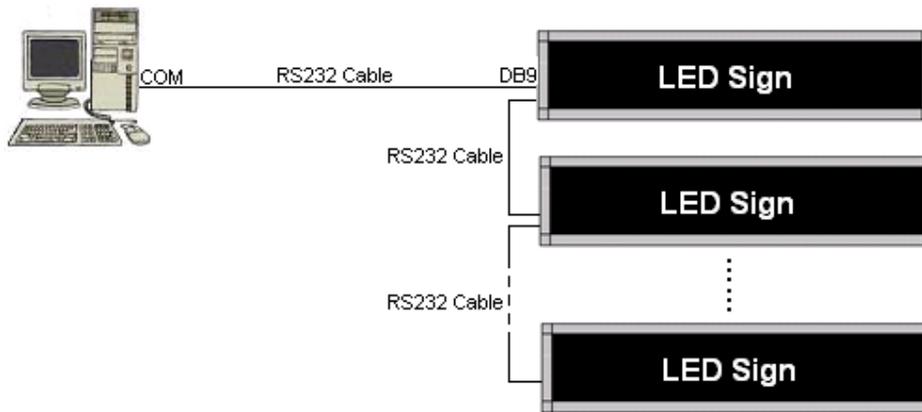
4.6 System connection

WZP2006 LED sign may communicate with control PC through RS232, RS422, Modem, GSM modem, or TCP/IP(LAN). In this part, we will describe how to connect cable for each communication mode.

4.6.1 RS232 communication

RS232 is a standard communication mode of WZP2006 LED sign system. The sign has RS232 interface and may connect to PC simply by a RS232 cable. It requests the control PC must have a RS232(COM) port. If there is no RS232 port, you may use a “USB to RS232” adapter to instead of RS232 port.

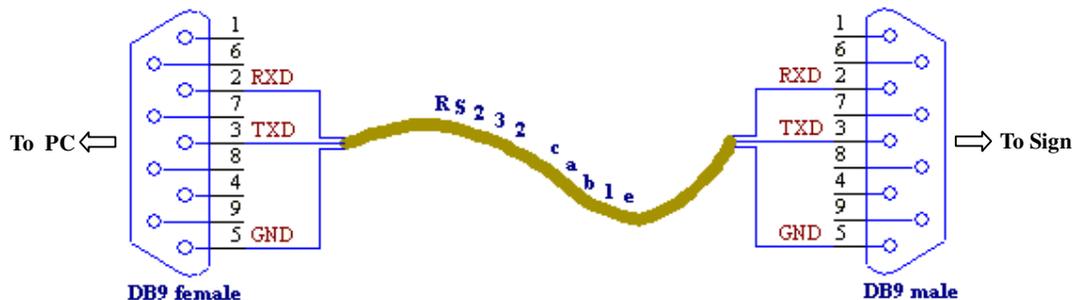
Following fig shown is the general connection of RS232 communication.



[Fig4.9 RS232 communication]

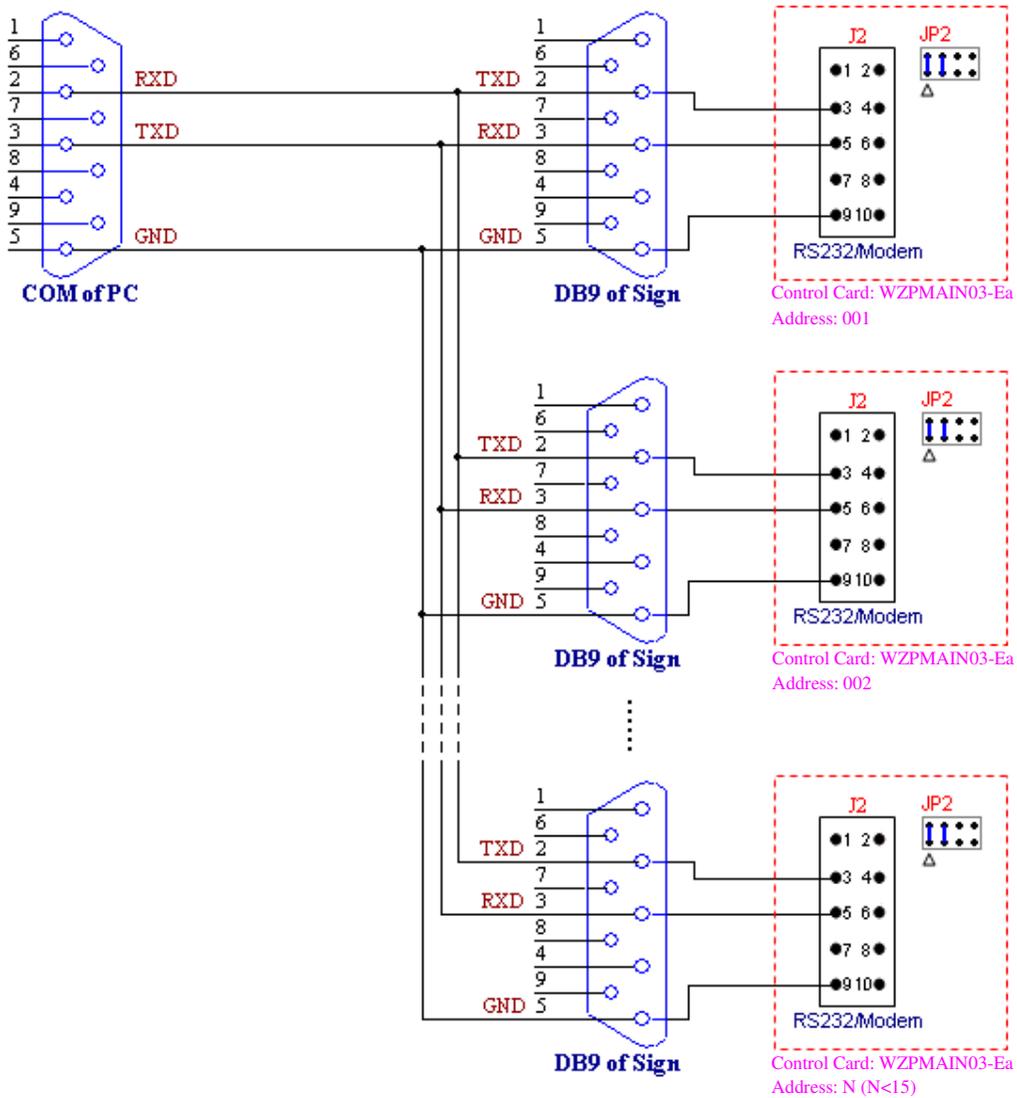
Note: RS232 cable had better not exceed 15 meters. And we don't recommend cascade LED signs to network by RS232 mode. You had better adopt RS422 communication mode while many LED signs need work in a network.

RS232 DB9 cable:



[Fig4.10 RS232 DB9 Cable]

Following give the circuit diagram of RS232 connection.



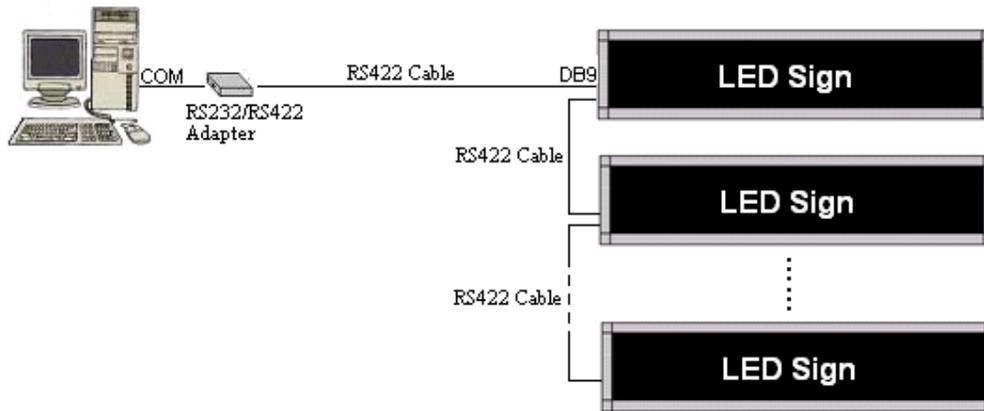
[Fig4.11 Circuit diagram of RS232 connection]

Note:

1. Cable is twisted-pair.
2. Cable length must be less than 15 meters.
3. Don't connect too much LED signs by RS232 mode.
4. Must set port J2 as RS232 mode by setting jumper "JP2"(connected "1-2", "3-4").

4.6.2 RS422 communication

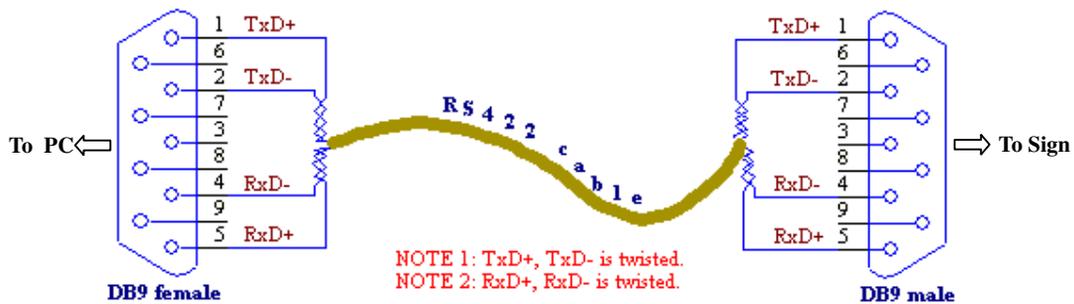
RS422 is a standard communication mode of WZP2006 LED sign system too. The sign has RS422 interface and may connect to PC simply by a RS422 cable. In general, RS422 communication need have a “RS232 to RS422” adapter, for PC does not have RS422 port. It requests the control PC must have a RS232(COM) port. If there is no RS232 port, you may use a “USB to RS232” adapter to instead of RS232 port, or use a “USB to RS422” adapter to instead of “RS232 to RS422” adapter. Following fig shown is the general connection of RS422 communication.



[Fig4.12 RS422 communication]

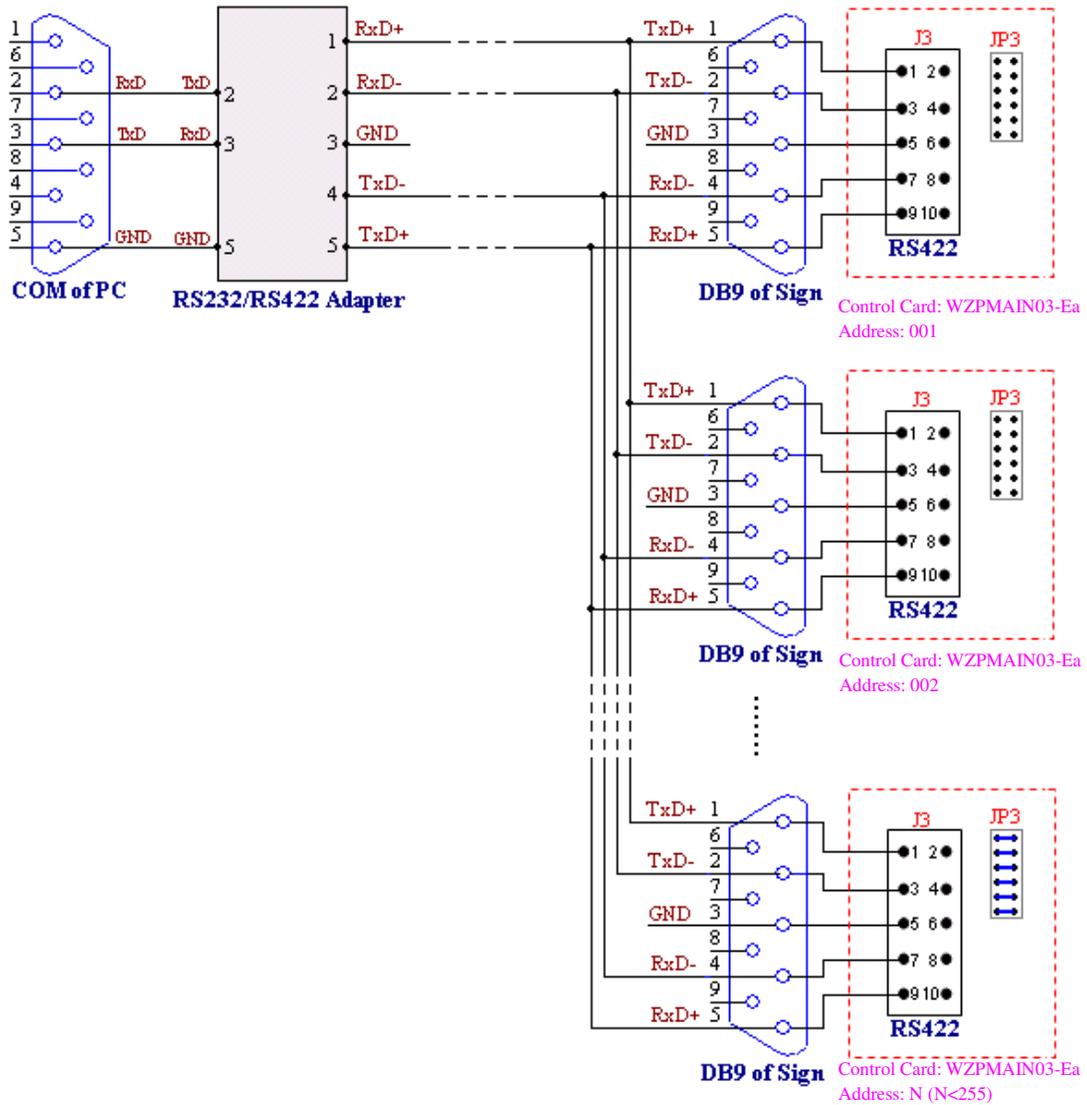
Note: RS422 cable had better not exceed 1200 meters. You must set terminal resistance for LED sign by jumper “JP3” on control card when system uses RS422 communication. If there are many LED signs cascaded to network, it only need set terminal resistance for the last LED sign.

RS422 DB9 Cable:



[Fig4.13 RS422 DB9 cable]

Following give the circuit diagram of RS422 connection.



[Fig4.14 Circuit diagram of RS422 connection]

Note:

1. Cable is twisted-pair; Tx/D+ and Tx/D- is a pair, Rx/D+ and Rx/D- is a pair.
2. Cable length must be less than 1200 meters.
3. Must set terminal resistance for the last LED sign by setting jumper “JP3”.
4. The number of LED signs can’t exceed 255.

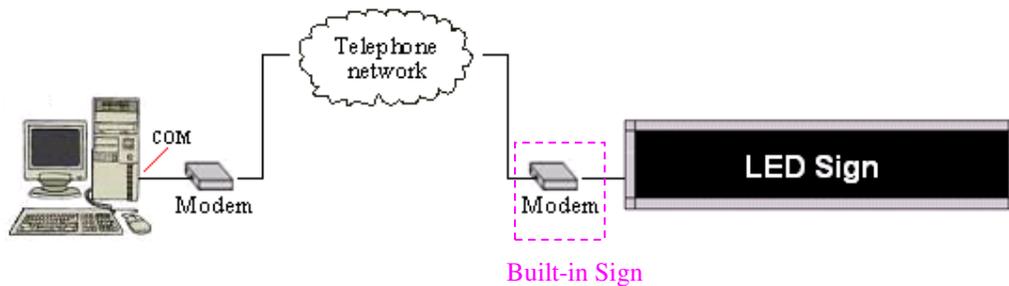
4.6.3 General modem communication

General modem communication mode is an optional communication of WZP2006 LED sign system. It is an expansion of RS232.

General modem mode is remote communication. It should use the telephone network so that the communication distance is not restricted.

This communication mode needs two general modems, one connects with control computer, and another connects with LED sign.

Following fig shown is the general connection of the general modem communication.

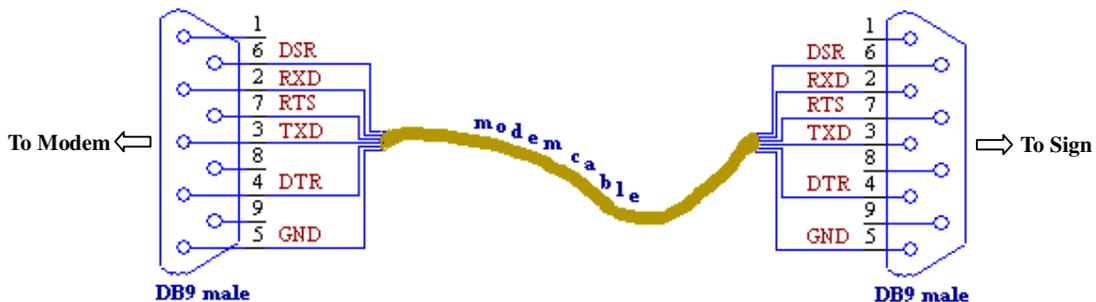


[Fig4.15 Modem communication]

Modem includes two types: one's port is DB9, another one's port is DB25. In PC end, the modem connecting is very simply. It only need connect to PC's COM port by the cable(standard RS232 cable) that provided with modem. In LED sign end, the cable used for connect modem with sign must make it special.

Modem DB9 cable:

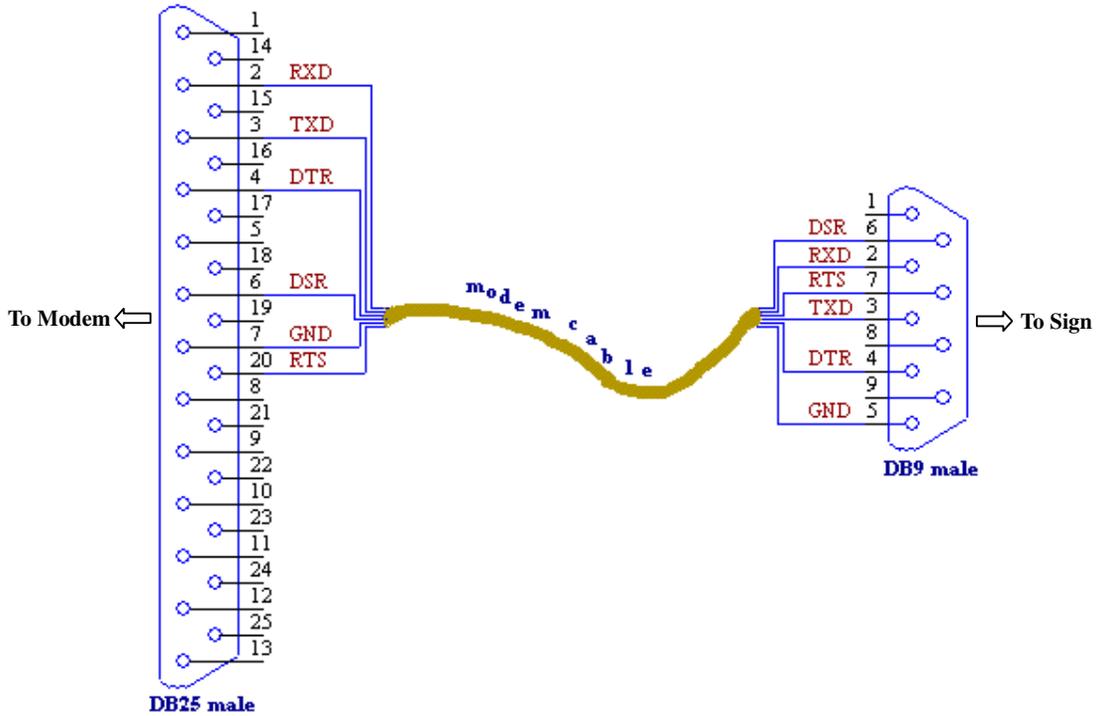
Use this cable to connect modem with sign. Don't use this cable to connect modem with PC.



[Fig4.16 Modem DB9 cable]

Modem DB25 cable:

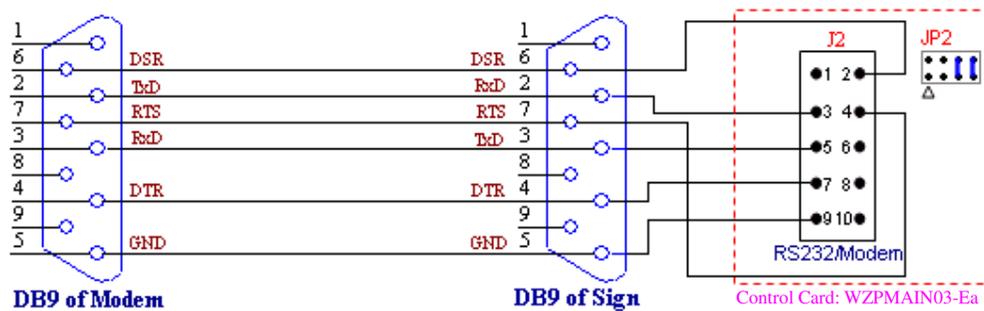
Use this cable to connect modem with sign. Don't use this cable to connect modem with PC.



[Fig4.17 Modem DB25 cable]

Following give the circuit diagram of general modem connection.

DB9 port type modem



[Fig4.18 Circuit diagram of DB9 modem connection]

Note: It must set port J2 as Modem mode by setting jumper JP2 (“5-6”, “7-8”).

DB25 port type modem is as similar as DB9 port modem, we don't describe it again.

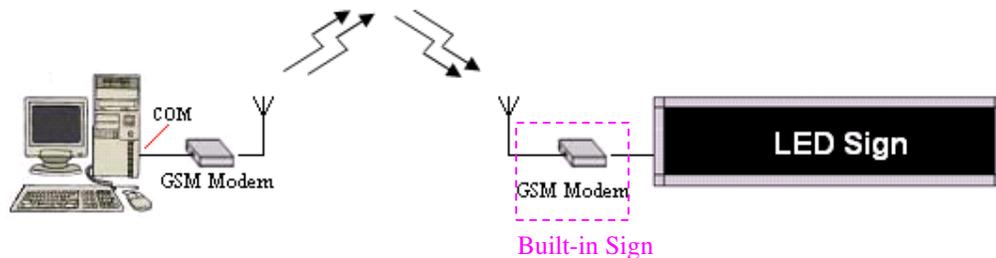
4.6.4 GSM modem communication

GSM modem communication mode is an optional communication of WZP2006 LED sign system. It is an expansion of RS232.

GSM modem mode is remote communication. It should use the mobile telephone network so that the communication distance is not restricted.

This communication mode needs two GSM modems, one connects with control computer, and another connects with LED sign.

Following fig shown is the general connection of the GSM modem communication.



[Fig4.19 GSM modem communication]

In PC end, the modem connecting is very simply. It only need connect to PC's COM port by the cable(standard RS232 cable) that provided with modem. In LED sign end, the cable used for connect modem with sign must make it special.

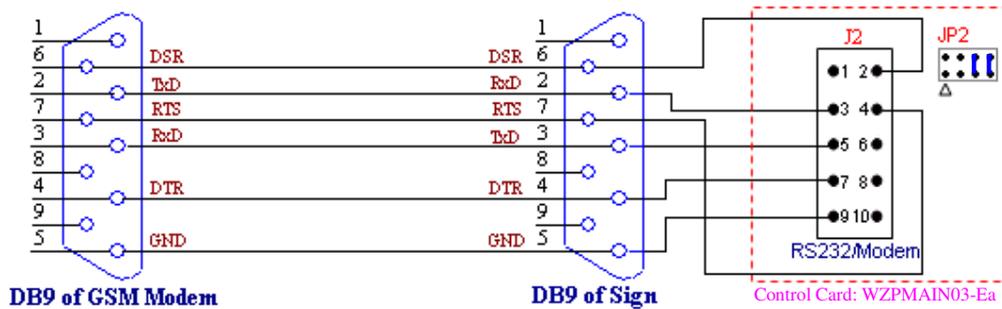
GSM Modem DB9 cable:

Use this cable to connect modem with sign. Don't use this cable to connect modem with PC.



[Fig4.20 GSM Modem DB9 cable]

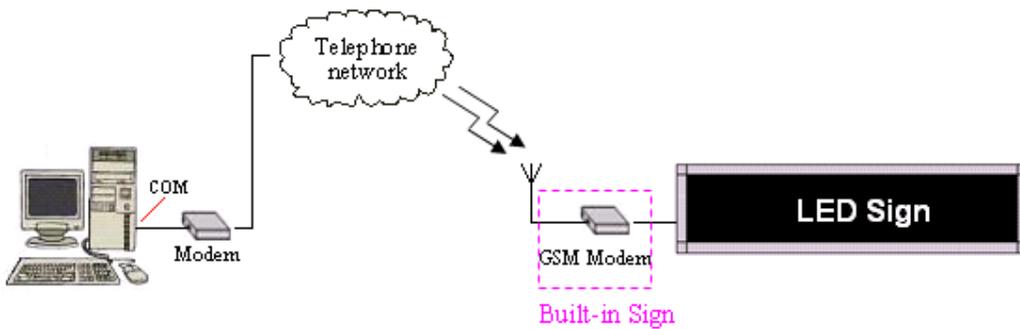
Following give the circuit diagram of GSM modem connection.



[Fig4.21 Circuit diagram of GSM modem connection]

Note: It must set port J2 as Modem mode by setting jumper JP2 (“5-6”, “7-8”).

In sometimes, the general modem and GSM modem may mix used in one system. In PC end, it uses general modem. In LED sign end, it uses GSM modem. In this status, the cable connection is as same as general modem and GSM modem. Following fig shown is the schematic connection diagram for this status.

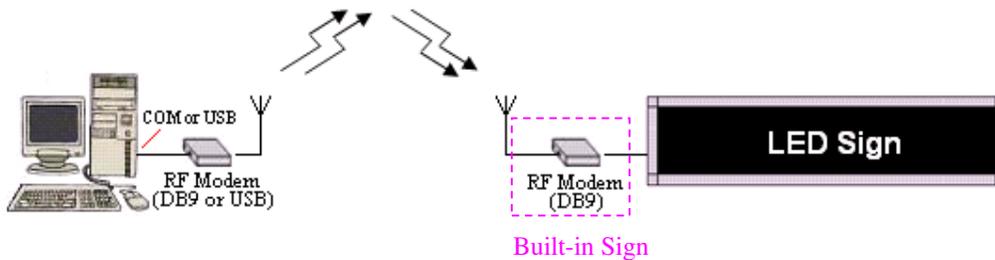


[Fig4.22 Mixed modems connection]

4.6.5 RF modem communication

RF modem communication mode is an optional communication of WZP2006 LED sign system. It is an expansion of RS232.

In fact, RF modem is a RF connector. It includes two types: USB port type and DB9 port type. This communication mode need two RF modems, one connect with PC and another one connect with LED sign. In PC end, user can select using USB port type or DB9 port type. But in LED sign end, we used the DB9 port type. Following fig shown is the schematic connection diagram for RF modem.



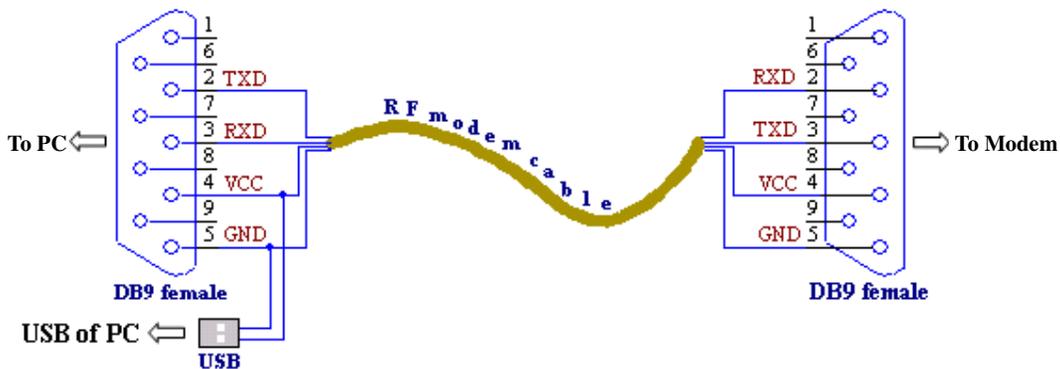
[Fig4.23 RF modem communication]

1. Cable connection of PC end

If use USB port type RF Modem, user only need plug it to PC's USB port through the cable(standard RS232 cable) that provided with RF modem. If use DB9 port type RF Modem, the cable used for connects RF modem with PC must make it special. Following content will describe how to connect DB9 port type RF Modem with PC.

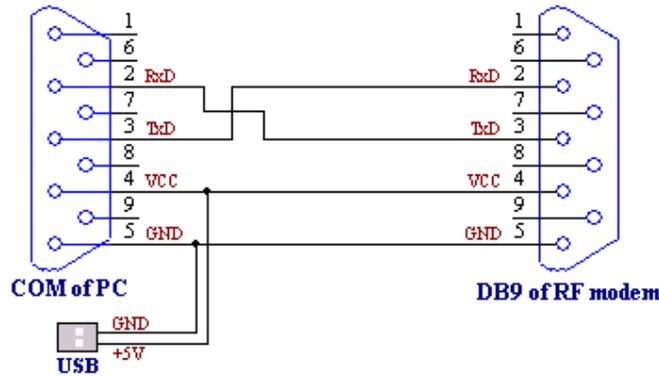
RF modem DB9 cable 1:

Use this cable to connect modem with PC. Don't use this cable to connect modem with LED sign.



[Fig4.24 RF modem DB9 cable 1]

Following give the circuit diagram of RF modem connection in PC end.



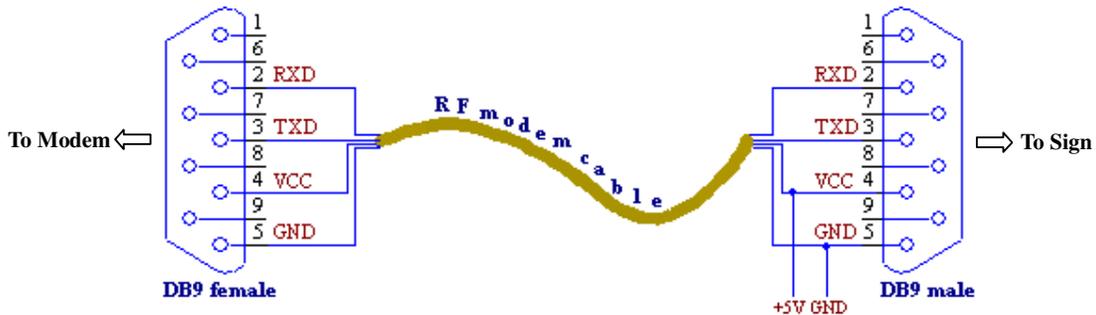
[Fig4.25 DB9 RF modem connect with PC]

2. Cable connection of LED sign end

In LED sign end, it must use DB9 port type RF Modem, and the cable used for connects RF modem with sign is a normal RS232 DB9 cable with power wire. Following content will describe how to connect DB9 port type RF Modem with LED sign.

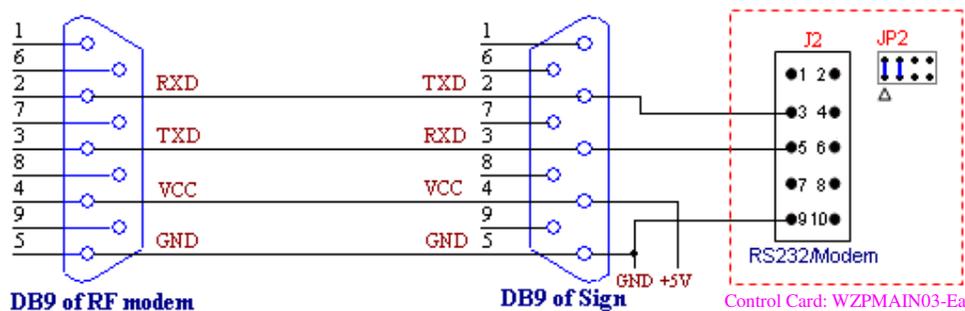
RF modem DB9 cable 2:

Use this cable to connect modem with LED sign. Don't use this cable to connect modem with PC.



[Fig4.26 RF modem DB9 cable 2]

Following give the circuit diagram of RF modem connection in LED sign end.



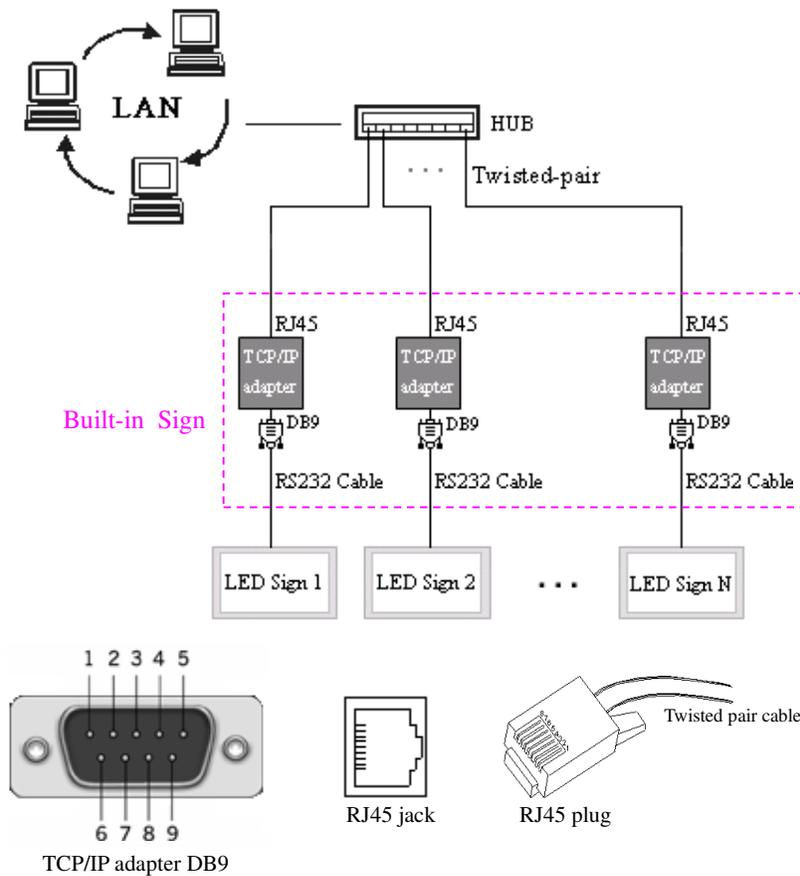
[Fig4.27 DB9 RF modem connect with LED sign]

Note: Must set port J2 as RS232 mode by setting jumper JP2(“1-2”, “3-4”).

4.6.6 TCP/IP network(LAN) communication

TCP/IP network communication mode is an optional communication of WZP2006 LED sign system. It is an expansion of RS232 too.

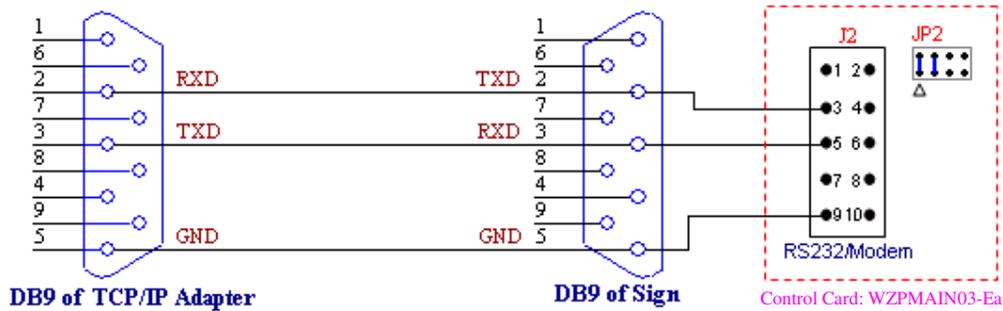
In this communication mode, the LED sign is connected in LAN through a “TCP/IP to RS232” adapter. Each sign need a “TCP/IP to RS232” adapter when there are many LED signs connection. Following fig shown is the general schematic connection diagram for TCP/IP network communication.



[Fig4.28 TCP/IP network communication]

Note: The cable used to connect HUB with TCP/IP adapter is the standard network cable(twisted-pair). And the cable used to connect TCP/IP adapter with LED sign is RS232 DB9 cable(fig4.10 shown). It must set the IP address before use “TCP/IP to RS232” adapter. User may set the IP address by select menu Comm\Config NetJet (TCP/IP Box) of WZP Sign Software program. More information refers to help of WZP Sign Software program.

Following give the circuit diagram of “TCP/IP to RS232” adapter and LED sign connection.



[Fig4.29 TCP/IP adapter connect with LED sign]

Note: Must set port J2 as RS232 mode by setting jumper JP2(“1-2”, “3-4”).

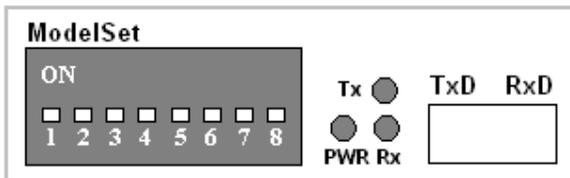
4.6.7 Optical modem communication

Optical modem is fiber optic modem that used to convert RS232/RS422/RS485 communication to fiber medium. In our system, we only use it as a converter of RS232 to fiber medium.

In general, we use optical modem communication mode when the environment is bad for communication. The connection of this communication mode has many types. This part will introduce a common connection.

Setting communication model for fiber optic modem

Panel switch(ModelSet) view:



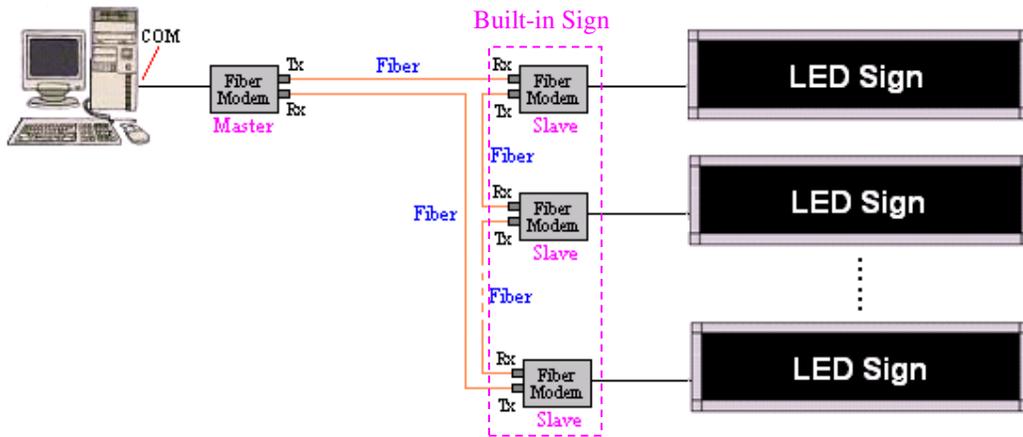
ModelSet switch to set communication mode:

Switch Model	1	2	3	4	5	6	7	8
RS232	OFF	OFF	OFF	OFF	OFF	OFF	OFF	NULL
RS422	ON	OFF	OFF		OFF	OFF	OFF	NULL
RS485	OFF	ON	OFF		ON	ON	OFF	NULL

Note:

1. Master model: set switch 4 is ‘OFF’;
Slave model: set switch 4 is ‘ON’.
2. Switch 8 is not need setting. It is ‘NULL’.

Following fig is the schematic connection of this communication mode.



[Fig4.30 Fiber optic modem communication]

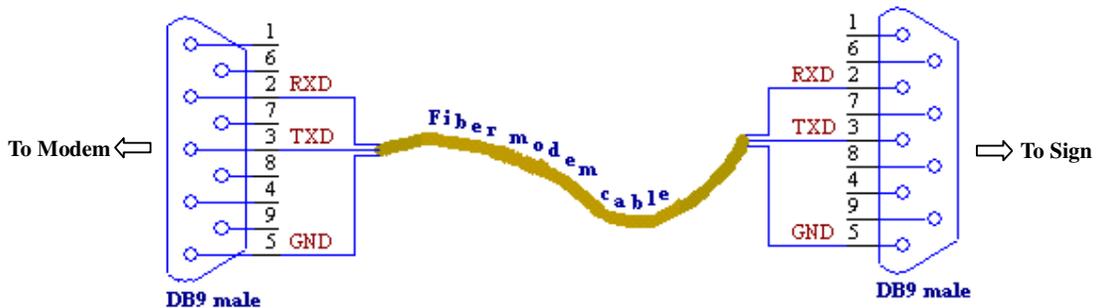
Note:

1. Set all fiber optic modem as RS232 communication mode by “Modelset” switch.
2. Set the fiber optic modem connected with PC as the master model; and set the fiber optic modem connected with LED sign as the slave model.

In PC end, the fiber optic modem connecting is very simply. It only need connect to PC’s COM port by the cable(standard RS232 cable) that provided with modem. In LED sign end, the cable used for connect modem with sign must make it special.

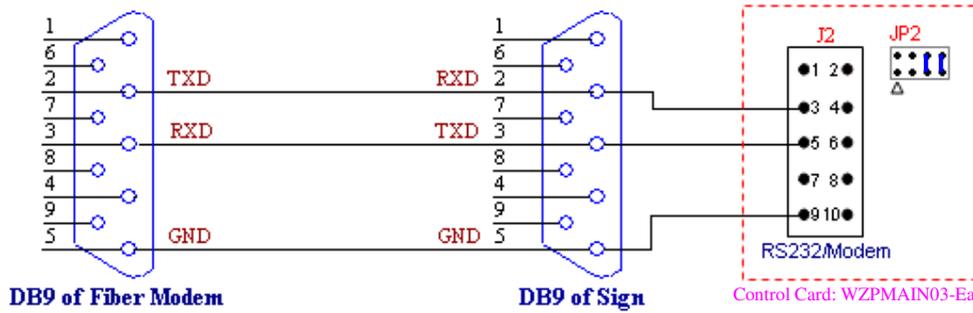
Fiber optic Modem DB9 cable:

Use this cable to connect modem with sign. Don’t use this cable to connect modem with PC.



[Fig4.31 Fiber optic Modem DB9 cable]

Following give the circuit diagram of fiber optic modem connection with LED sign.



[Fig4.32 Circuit diagram of fiber optic modem connection]

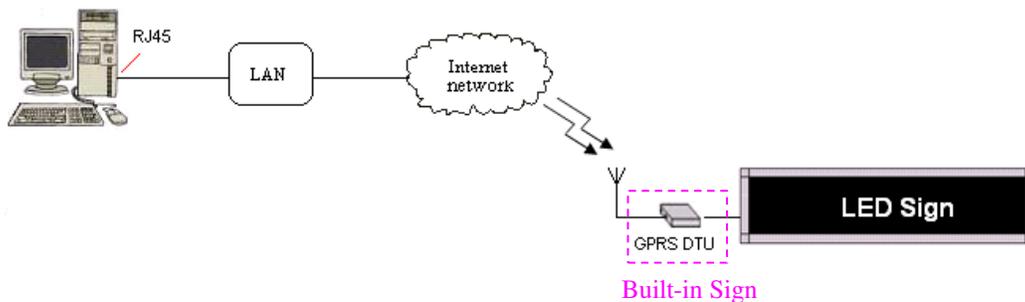
Note: Must set port J2 as modem mode by setting jumper JP2(“5-6”, “7-8”).

4.6.8 GPRS modem communication

GPRS modem communication mode is an optional communication of WZP2006 LED sign system.

GPRS modem mode is remote communication. It should use the Internet network so that the communication distance is not restricted. This communication mode just needs one GPRS modem which connects with LED sign.

Following fig shown is the general connection of the GPRS modem communication.

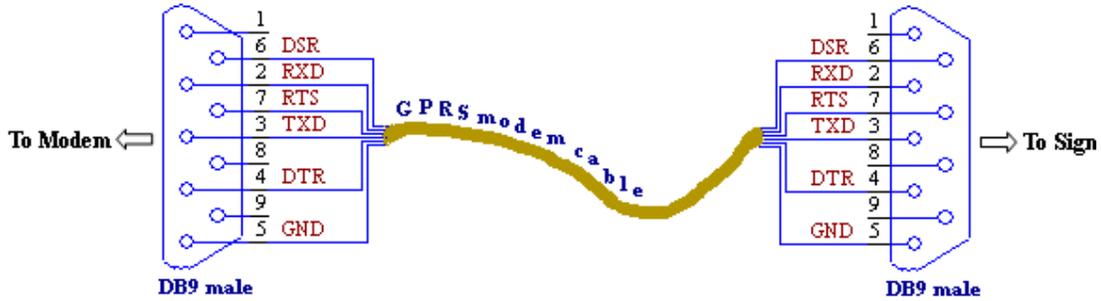


[Fig4.33 GPRS modem communication]

NOTE: Before using the GPRS modem communication, user has to configure the parameter of the GPRS modem. More information refers to help of WZP Sign Software program.

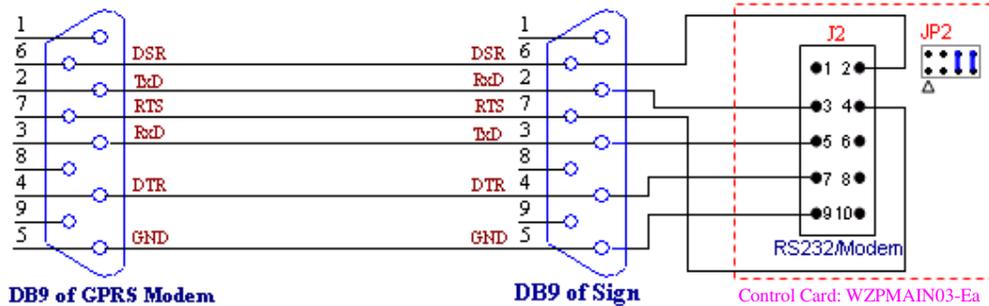
GPRS Modem DB9 cable:

Use this cable to connect modem with sign.



[Fig4.34 GPRS Modem DB9 cable]

Following give the circuit diagram of GPRS modem connection.



[Fig4.35 Circuit diagram of GPRS modem connection]

Note: It must set port J2 as Modem mode by setting jumper JP2 (“5-6”, “7-8”).

★ Remark: We suggest that user should use computer with COM port to operate WZP LED Sign preferentially; if use USB-RS232 adapter, please use the adapter produced by our company firstly; if use USB-RS232 adapter, and the communication is not normal, please select another computer to try, maybe your USB-RS232 adapter is problematic.

Section 5: Maintenance

Important Notes:

- Power must be turned off before any repair or maintenance work is done on the sign.
- Qualified service personnel must make any access to internal sign electronics.
- Study foregoing sections to understand configuration of the sign and the routing flow of power and signal/data.
- Servicing or maintaining must be with anti-static instrument (such as ESD hand/heel straps).

5.1 Maintenance overview

A yearly inspection should be completed to maintain safe and dependable display operation. This inspection should address the following issues:

- **Loose hardware** Verify fasteners, such as bolts and rivets, have not come loose. Fasteners should be checked and tightened or replaced as required.
- **Excessive Dust Buildup** Occasionally it may be necessary to vacuum the inside of the LED sign to remove dust/dirt buildup that may interface with airflow.
- **Water Intrusion** Indoor LED sign's cabinet designed isn't waterproof. Water can enter the LED sign where fasteners has come loose allowing gaps in the panels or where moisture may be entering around hardware. Be sure to check around the lift eyes and bolts to ensure that water has not entered there. If so, replace hardware immediately and prevent more water from entering the sign. Also, check electronic components for possible corrosion.
- **Corrosion** Check the paint, and look for possible corrosion especially at footings, structure tie points and ground rods.
- **Cables** Check power cables and signal/data cable of system. If power or data cables are damaged, replace only with new ones.
- **Fans Failure** About some big sign, we provide many fans to discharge heat. Every fan installed on the backdoor of cabinet is controlled by a thermal switch and is turned on when the surface temperature of the cabinet reaches about 50°C. Fans should be checked more often if the LED sign is located in a dusty environment. Fan blades and filters must be kept clean.

5.2 LED sign Cleaning

Due to long-term use the LED sign are exposed to all kinds of weather conditions. Dust, smog and other dirt adhere on the LED sign and because of that the performance of the sign is reduced. So we recommend cleaning LED sign at regular intervals.

Necessary tools

- Damp cloth with a non aggressive detergent.
- Soft hand brush with long hair.
- Compressed air.

Cleaning process

1. Seal up the data and power sockets of the cabinet with a power and data cable.
Make sure that all plug holder clamps are locked firmly.
2. Ensure that the unused output ports of sign are sealed with a dummy plug.
3. Use damp cloth with a non aggressive detergent to clean faceplate or LED's.
Warning: Don't use industrial grease removers. Use only materials or chemicals that are inert, nonabrasive, noncorrosive and non-marking.
4. Brush down all dirt of the faceplate or LED's using a soft hand brush.
Warning: Don't use a hard bristled brush.
5. Repeat from step 3 until the sign is clean.
6. Blow the surface dry with compressed air.

5.3 Replacement

Replacing LED Display cards

1. Read follow the safety instruction in section 1.
2. Disconnect the power and data cables and all the cable strings from display cards.
3. Loose these screws that fixed display cards on grid of cabinet.
4. Pushing the display cards forward out of the grid.

Warning: Ensure you have a good grip on the display card while releasing the display card. We recommend there has one people hold the display card at the same time while pushing.

5. Hand over the released display card.

Note: It's possible to pull back the display card through the grid opening if required.

6. Snap in a new display card.

Warning: Ensure to orient the display card correctly while snapping in.

7. Use screws fixed new display cards onto grid.

Warning: The display card should be firmly seated against the grid of cabinet.

8. Connect the new display cards with cables.

Warning: Ensure to fasten the captive lock of the plug.

Note: Above described how to replace display card for some big indoor sign.

Replacing control card

There is no special handwork to replace the card but loose screws for fixing and disconnect the cables and wires attached, then you can take out it easily.

When installing a new card, reverse the previous steps.

Replacing power supply

The power supply is fixed on a plate by bolt. And the plate is installed on cabinet. Loose these screws that fixed plate on cabinet, then you can take out the plate from cabinet. Now, you only need loose screws for fixing and disconnect the cables and wires attached of power supply, then you can take out the power supply easily. When installing a new power supply, reverse the previous steps.

5.4 Troubleshooting

For WZP2006 LED sign, we have a special indication for simple trouble. User can judge where those problems are and find way to solve the problems from the LED indicator on control card.

LED indicators on control card(WZPMAIN03-Ea)

Status of LED indicators information:

LED 2 --- Communication status indicator

When send content to the sign:

Flash – Communication normal; Not light – Communication abnormality.

LED 3 --- Working status indicator

When power on the sign:

After power on the sign about 6s and the buzzer sounds 3 times, the LED flash (flash one time each 0.5s) – Reset is normal; No flash – Reset is failed.

When working:

Flash(flash one time each second) – Working normal; No flash – Abnormality.

The below sub-section contains some symptoms that may be encountered in the sign. This list does not include every possible symptom, but does represent common situations that may occur.

Table2: Common symptom remedy

Symptom/Condition	Possible Cause/Remedy
One or more LEDs on a single display card fail to light or fail to turn off.	· Check/replace the LED display cards.
Two rows (included in one row cabinets) that extend from left to the right of the sign are not working.	· Check/replace the DC power supply installed in the cabinet. · Check the power wire connection. · Verify proper use of the software.

Continue table2:

<p>One or two neighbor rows of LED display card do not work or garbled.</p>	<ul style="list-style-type: none"> · Check/replace power supply or power wires connected to the end display card that are not working. · Replace the end display card that is not working on the right side. · Replace the adjoining display card that is on the right side of the end display card (maybe it does not export data). · Replace the input ribbon cable connected to the end display card on the right.
<p>Entire sign fails to work.</p>	<ul style="list-style-type: none"> · Check the power cables that entered into the sign.
<p>One or few rows of sign do not update information.</p>	<ul style="list-style-type: none"> · Check internal data cable. · Replace CPU board (control card).
<p>Can not send or receive message</p>	<ul style="list-style-type: none"> · Check if the ring communication path has broken node.

5.5 Return and Repair

Parts that are replaced by spare parts can be returned to us for repair. Please enclose your name, address, phone number, and a clear description of symptoms. When getting returned parts, we will inspect, test and repair it and send it back as soon as possible. The repairing work is free for a period of two years from the date of shipment. Each will pay the transportation charges. This means, user will pay charges for transporting goods to us and we will pay charges for return.

We retain the right to refuse part that has been damaged due to the acts of nature or causes other than normal wear and tear.

If you have any other question to ask or need any other service, feel free to contact with us.

Section 6: Appendix

Appendix A: Jumper for card

➤ Control card: WZPMAIN03-Ea

JP1: Jumper 1, for setting work mode. Connected Pin1 and Pin2() to set control card normal working. Connected Pin2 and Pin3() to set clear memory. No connected JP1 is normal working. The default setting is work mode. If set control card clear memory mode, the all contents in control card will be cleared after power on over again, the control card will resume to factory default settings. In general, we don't recommend setting control card clear memory mode, unless the sign has very serious fault.

JP2: Jumper 2, for setting J2 port as RS232 or Modem mode. Connected as "••••"

("1-2", "3-4") to set J2 port as RS232 mode. Connected as "••••" ("5-6", "7-8") to set J2 port as Modem mode.

JP3: Jumper 3, for setting terminal resistance of RS422/RS485 communication. Connected as "••••••" ("1-2", "3-4", "5-6", "7-8", "9-10", "11-12") to set have terminal resistance. Connected as "••••••" ("3-4", "5-6", "9-10", "11-12") to set MidNode mode. If there are many signs connected in network, the last sign must set have terminal resistance, and other signs must set MidNode mode.

JP4: Jumper 4, for setting load program or adjust time. Connected as "••••••"

("1-2", "3-4") to set as load program mode. Connected as "••••••" ("5-6", "7-8", "9-10", "11-12") to set as adjust time mode. The default setting is "adjust time" mode.

Appendix B: Some cables define

➤ **Power cable**

The power cable used for external or input/output are mad up of three wires. This power cable connector has three pin. Wiring standard for power cable as following:

Pin1 --- L Pin2 --- N Pin3 --- GND

➤ **Temperature sensor cable**

The temperature sensor cable contains three colored wires: yellow, green, and red.

Wiring rule as following:

Pin1 --- Red wire --- VCC

Pin2 --- Yellow wire --- GND

Pin3 --- Green wire --- Signal

Appendix C: PC software list

WZP2006 LED sign can be controlled by PC software.

PC Software: WZP Sign Software(Path: bin\Wzpssoft.exe)

Software manual: WZP2006 Help(Path: bin\Wzphelp.exe)

