PROGRAMMABLE CENTER CONTROL SYSTEM

User's Manual

TS-9232

Please read this manual carefully before using.

Notification

⚠️ **Caution**

To ensure the reliability of the equipment and the safety of personnel, please observe the following when installing, using and maintaining:

● If any of the following conditions are found, please immediately turn off the power, plug out and quickly contact your nearest dealer. Do not continue using this unit, which may cause a fire or electric shock.

- If you find smoke or have a strange taste from the machine.
- If water or metal falls into the machine.
- If the unit is dropped or the case is damaged.
- If the wire is damaged (wire core exposure, broken wire, etc.).

● If the machine contains high-pressure parts, in order to avoid the fire or electric shock, absolutely don't open the case, if any questions please inform your nearest dealer.

● Do not place cups, bowls, vases or metal and other water-filled substances on the unit. Serious spilled liquid may cause a fire or electric shock.

● Never expose the unit to rain and any moisture or water, which may cause electric shock or fire.

● Do not place metal objects or flammable materials from the vents on the machine cover, nor place coins, which may cause fire or electric shock.

● Do not place heavy objects on the unit to avoid personal injury or property damage when the unit is slipping.

● Make sure that the volume is turned on at the beginning of the boot, and the high volume of the boot may cause hearing problems.

● Make sure that the volume is turned on at the beginning of the boot, and the high volume of the boot may cause hearing problems.

● For long-term accumulation of dust to be cleaned, please inform your dealer to regularly clean the machine, so as to avoid damage to the machine or cause a fire.

● The battery must be replaced with the same type of product and the correct installation should be made in order to avoid electrical damage and explosion hazard.

● The product is a Class I device. The device must be well connected to ground. The power plug must be connected to a power outlet with a grounding device to ensure

that the equipment is fully grounded.

● This product uses a power plug or appliance input socket as a disconnecting device with the power supply, and must be disconnected if necessary for safety reasons.

● This equipment is only suitable for safe use at altitudes above 2000 meters.

Precautions

1. The installation environment

When installing the unit, in order to ensure the normal cooling of the host, should avoid the poor ventilation of the place or high temperature environment, to avoid direct sunlight.

Recommend to install cabinet or other well-ventilated place indoor. If you use the machine in the outdoors, please pay attention to waterproof, moisture, lightning protection measures.

Avoid installing in a violent place of vibration; do not place other equipment on the machine.

Working temperature :-10℃~60℃,

Humidity is limited to 5% to 90% (non-condensing).

2. To avoid electric shock and fire

Do not touch the hands and the source with wet hands

Do not spill liquid on the machine, so as to avoid short-circuit or fire inside the machine.

Do not place other equipment directly on the top of the unit.

Non-professional service personnel Do not disassemble the unit yourself to avoid damage and electric shock.

3. Transport and handling

The packaging of the machine is designed and tested to ensure that the host will not be accidentally damaged during transport. It is best to use the original packaging when handling the unit.

Do not move the host device between the place or cold or over hot to avoid condensation inside the machine, affecting equipment life.

4. Please follow the warning instructions on this product, the warning signs on behalf of:

	Applicable to 2000 meters above sea level and below
	Safe use only in non-tropical climates

5. Agreement

Please strictly follow the instructions in this manual. The software, hardware and appearance of this product will be upgraded and updated continually. The above changes will be made without notice.

Non-professional maintenance personnel, do not remove the product, to avoid damage and electric shock.
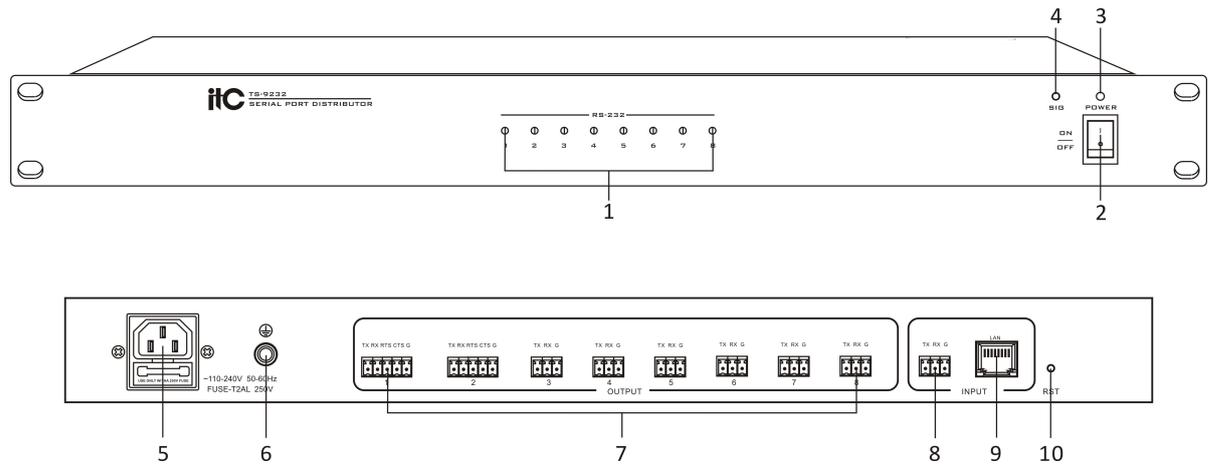
1. Descriptions

1 channel network communication port and 1 channel RS232 serial port input, 8 channel RS232 serial port outputs. RS232 data or network data that can be received is converted into the specified baud rate and output from the corresponding COM1~COM8 port. The 8 ports can be used to supplement the shortage of the central controller when the serial port is not enough for devices to control. The 8 serial port distributor also has a cascade function, which can be applied to various command and control centers, multimedia conference halls, multimedia classrooms and large-scale system engineering, etc.
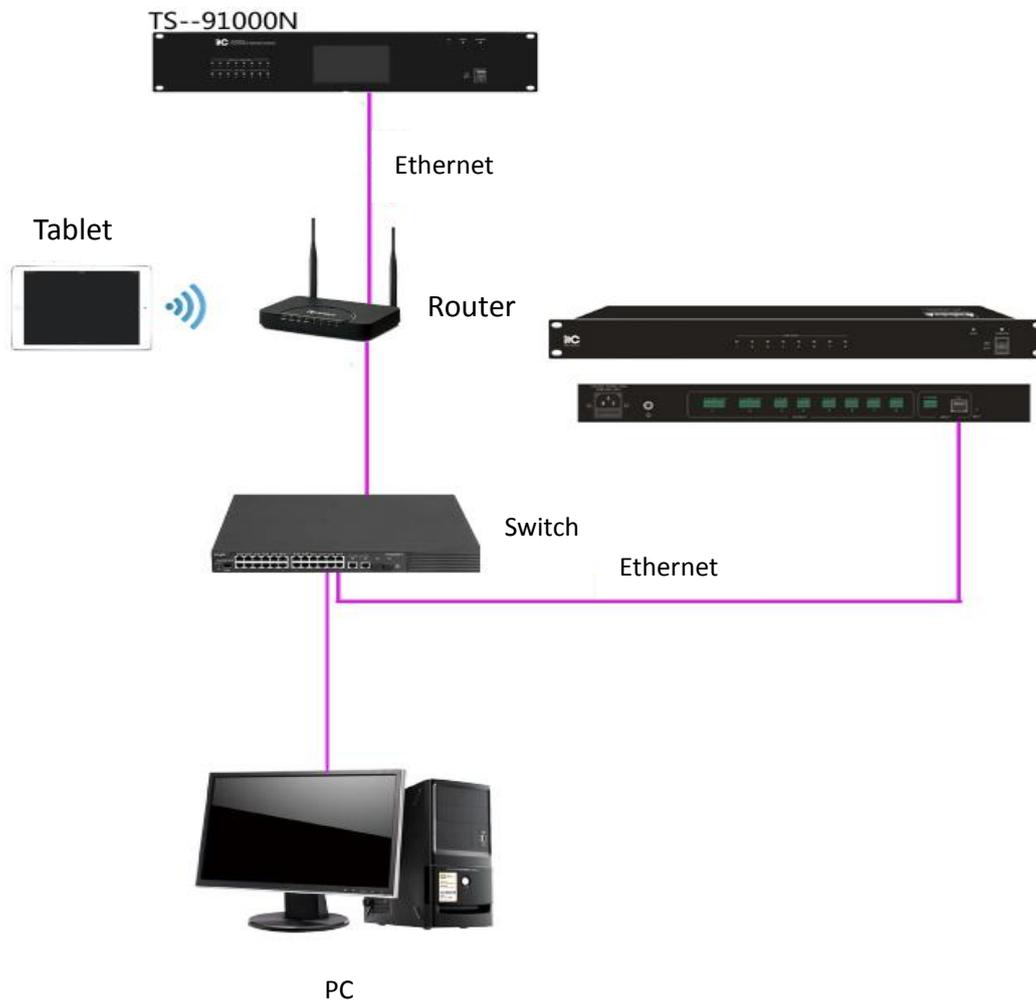
2. Features

1. 1 channel RS-232 serial port input, 8 channels RS-232 serial port output.
2. Input data can be assigned to switch to any one of 8 channels output.
3. Baud rate and verified method of output data can be set up.
4. It can expand the serial port outputs by cascading. The maximum number of cascading is 10, which can be extended to 80 serial port outputs.
5. The expansion does not interfere the use of the original central control RS-232 port;
6. Users can observe port operation clearly through the indication lights on the panel.
7. With high class center control, you can save the cost of port control.
8. The panel indicator can display the operation of the service port;
9. Standard 19-inch cabinet installation, 1U height.
10. Support network to 8 RS-232 serial port output.

3. Functions

1. Serial output signal indicator
2. Power switch
3. Power indicator
4. Network indicator
5. Power input
6. Grounding interface
7. Serial port 232 signal input and output port
8. Serial port 232 signal input port
9. Network port
10. Reset button

4. System connection diagram

TS--91000N

Ethernet

Tablet

Router

Switch

Ethernet

PC

5. Specifications

Model	TS-9232
Serial input	1 channel RS232 input, DB9 interface; serial port parameters: 115200, 8, 1, n
Serial output	8-channel RS232 extended outputs, DB9 interface; output baud rate, calibration mode can be set (see "Control Protocol" section for details)
Indicator light	SIG: Network transceiver data indicator
	OUT1~8: Serial input and output signal indicator
	POWER: Power indicator
Power supply	AC 220V 50Hz, 5W
Dimensions	484×225×44mm
Weight	2.36Kg

6. Control protocol

Input serial port

Baud rate: 115200bps, data bit: 8; stop bit: 1; check mode: no parity.

Protocol format: (hexadecimal)

CA+30+18+CMD+DATA+AC

Description: CA, 30, 18 are all hexadecimal number

            CMD is the command format byte, which occupies 3 bytes

            DATA is Forwardinging data

            AC is the end mark of data

Commands	Content (data are all hexadecimal bytes)
Sent by Port 1	CA 30 18 Data Length Byte 01 Forwarding Data AC
Sent by Port 2	CA 30 18 Data Length Byte 02 Forwarding Data AC
Sent by Port 3	CA 30 18 Data Length Byte 03 Forwarding Data AC
Send by Port 4	CA 30 18 Data Length Byte 04 Forwarding Data AC
Sent by Port 5	CA 30 18 Data Length Byte 05 Forwarding Data AC
Sent by Port 6	CA 30 18 Data Length Byte 06 Forwarding Data AC
Sent by Port 7	CA 30 18 Data Length Byte 07 Forwarding Data AC
Sent by Port 8	CA 30 18 Data Length Byte 08 Forwarding Data AC

Descriptions	
Data byte length	The value of the data byte is equal to the byte number of the forwarding data, and the length　content cannot be greater than 40 bytes.
Notes	The sending interval between commands cannot be less than 50ms.
Forward 90 AA 10 34 56 data by port 1. Format is 9600bps, 8 data bits, 1 stop bit, no	

parity	
Commands	CA 30 18 05 01 90 AA 10 34 56 AC
	Notes: 05 is the byte number of forwarding data; 30 is the byte format of the serial port (byte format corresponding table); 01 is the output port number 1.

Byte format corresponding table

Serial port formats	Serial format definitions	Serial port formats	Serial format definitions	Serial port formats	Serial format definitions
Baud rate 1200, no parity	00	Baud rate 1200, odd parity	01	Baud rate 1200, even parity	02
Baud rate 2400, no parity	10	Baud rate 2400, odd parity	11	Baud rate 2400, even parity	12
Baud rate 4800, no parity	20	Baud rate 4800, odd parity	21	Baud rate 4800, even parity	22
Baud rate 9600, no parity	30	Baud rate 9600, odd parity	31	Baud rate 9600, even parity	32
Baud rate 19200, no parity	40	Baud rate 19200, odd parity	41	Baud rate 19200, even parity	42
Baud rate 38400, no parity	50	Baud rate 38400, odd parity	51	Baud rate 38400, even parity	52
Baud rate 115200, no parity	60	Baud rate 115200, odd parity	61	Baud rate 115200, even parity	62
Note: The above data are hexadecimal data.					

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