VigilLink™

Universal Control System

VLCT_USC888

User Manual

VER 1.0

Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Table of Contents

1. Introduction

The Integrated Controller is designed to be utilized in the sectors of commanding center, automated office system, multi-media room and smart home. With a programmable interactive user interface over configuration protocols, the integrated system provides intelligent networking service, ideal for the establishment of modern commanding and control center. The Controller features 8 two-way serial ports, 8 IR outputs, 8 Relay ports, 8 digital I/O ports and 1 Gigabit Ethernet port, suitable for large-scale application systems to control multiply devices.

The Controller is used in a diverse range of installations and applications across industries including emergency alarming centers, C4ISR solutions, governmental administration centers, smart buildings, multi-media conference rooms, multi-functional halls, training centers, showroom, broadcasting studios, and industrial automation.

2. Features

- ☆ 8 two-way serial ports to connect matrixes, projectors or other A/V devices
- ☆ 8 IR outputs/one-way serial ports to connect DVD, TV sets, or other home appliances
- ☆ 8 relay ports to control lights, doors or curtains
- ☆ 8 digital inputs to receive sensor signals
- ☆ Capable of connecting with Ethernet-control devices for Ethernet monitoring and control
- ☆ IR learning
- ☆ Provide a superb-performance Web server, supporting on-line firmware upgrade
- ☆ Compliant with standard network communication protocols
- ☆ Password protection against unauthorized accesses
- ☆ Built-in sync clocks
- ☆ Standard 1U rack mounting
- ☆ 220V AC power supply
- ☆ Support factory reset

3. Package Contents

① 1 × Integrated Controller
② 4 × 3-pin Phoenix Connectors
③ 1 × 4-pin Phoenix Connector
④ 2 × 5-pin Phoenix Connectors
⑤ 4 × 8-pin Phoenix Connectors
⑥ 4 × 9-pin Phoenix Connectors
⑦ 2 × Mounting Ears
⑧ 6 × Machine Screws
⑨ 1 × 220V/10A AC Power Cord
⑩ 1 × User Manual

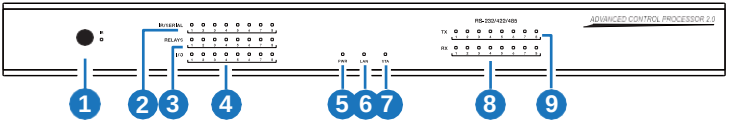
4. Specifications

Technical	
CPU	ARM Cortex-A53 1.8GHz
Operation System	Android 9
RAM	2GB DDR4 RAM
Flash Memory	8GB EMMC Flash
LEDs	1 × IR Learning LED 1 × Power LED 1 × LAN LED 1 × Status LED 8 × TX LEDs 8 × RX LEDs 8 × IR/Serial LEDs 8 × Relay LEDs 8 × I/O LEDs

Connection	
COM1/2/3/4	4 × 9-pin Phoenix Connectors, for two-way RS-232/422/485 serial data communication
COM5/6/7/8	4 × 3-pin Phoenix Connectors, for RS-232 serial data communication
IR-SERIAL OUTPUT	2 × 8-pin Phoenix Connectors, for IR transmitting or one-way RS-232 serial data communication
RELAY OUTPUT	2 × 8-pin Phoenix Connectors, low-voltage relays, isolated, normally open, switching up to 30VDC, 2A / 125VAC, 1A
DIGITAL I/O	2 × 5-pin Phoenix Connectors, for digital signal inputting
LAN	A standard 10M/100M/1000M Ethernet RJ45 interface
USB	1 × USB TYPE A (function reserved)
COMPUTER	1 × USB TYPE B
H-NET	1 × 4-pin Phoenix Connectors, private bus interface (function reserved)
RESET	1 × RESET, for restoring factory default
IR	1 × IR learning Window
Mechanical	
Housing	Metal enclosure with aluminium alloy front panel
Color	Black
Dimension	440mm (W) × 200mm (D) × 44mm (H)
Weight	2.1kg
Installation	Standard 19-inch cabinet (with mounting ears) or flat installation
Power Supply	AC110~220V 50/60Hz
Power Consumption	55W (48W for external power supplies connected via the H-NET port.)
Operation Temperature	0°C ~ 40°C / 32°F ~ 104°F
Relative Humidity	10~90% RH (non-condensing)

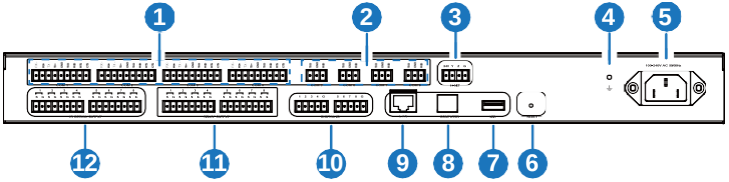
5. Operation Controls and Functions

5.1 Front Panel



No.	Name	Function Description
1	IR Learning Window & LED (Yellow)	The yellow LED blinks when the IR wave is received; If not, the LED is off.
2	IR/Serial LEDs (Yellow)	8 LEDs, each of which blinks in yellow to indicate that the corresponding IR/serial port is transmitting data; If not, the LED is off.
3	Relay LEDs (Yellow)	8 LEDs, each of which illuminates in yellow to indicate that the corresponding relay port is closed; If not, the LED is off.
4	I/O LEDs (Yellow)	8 LEDs, each of which blinks in yellow to indicate that the corresponding I/O port has got signal level fluctuation; If not, the LED is off.
5	Power LED (Red)	The red LED illuminates when the device is powered on.
6	LAN LED (Green)	The green LED illuminates when the Controller connects to the network, blinks when it uses network protocols for data communication.
7	STA LED (Blue)	The blue LED illuminates when the device functions properly after booting, blinking for factory resetting.
8	TX LEDs (Yellow)	8 LEDs, each of which blinks when the corresponding TX port is transmitting data; If not, the LED is off.
9	RX LEDs (Yellow)	8 LEDs, each of which blinks when the corresponding RX port is receiving data; If not, the LED is off.

5.2 Rear Panel



No.	Name	Function Description
1	COM1/2/3/4	The controller features 4 sets of programmable two-way multi-mode serial ports, each of which is a 3.5mm 9-pin phoenix connector (male), compliant with RS232, RS232+Hardware Flow, RS485 and RS422 communication protocols, and capable of configuring 8 baud rates in the range of 2400-115200bps. More information on the pin-outs of the connector, see table 5-1.
2	COM5/6/7/8	The controller provides 4 sets of programmable single mode serial port, each of which is a 3.5mm 3-pin phoenix connector (male), compliant with RS232 communication protocol, and capable of configuring 8 baud rates in the range of 2400-115200bps. The pin-outs of the RS232 ports are PIN1 for TXD, PIN2 for GND, and PIN3 for RXD.
3	H-NET	The reserved private bus interface.
4	Ground Terminal	Used for connecting the ground or the earthing conductor of the rack.
5	100-240V AC 50/60Hz	The power supply port, used for connecting with external 220V/10A AC power.
6	RESET (1)	**Reboot:** When the device boots up, press and hold the RESET button for more than 1s less than 5s, then release it, the STA LED on the front panel will flash for five times, indicating that the device is going to reboot. The user projects won't be auto-uploaded to the controller after rebooting.

No.	Name	Function Description
6	RESET (2)	**Reset:** When the device boots up, press and hold the RESET button for more than 5s, then release it, the STA LED on the front panel will flash for 5 times, the device will reset the user configuration information, the IP will be restored to DHCP state, the login password of the management page will be initialized to “admin”, the device time will be initialized to automatic acquisition mode, but user projects won’t be deleted by factory initialization.
7	USB Port	The reserved port for function extension.
8	COMPUTER	The reserved port for test debugging.
9	LAN	The Controller provides a standard 10M/100M/1000M Ethernet RJ45 interface with default auto-negotiated speed for device connection, projects uploading & downloading, network communication and debugging. The controller boots up with DHCP enabled by default. After powering on, when the Controller connects to a network where there is no router present to assign IP addresses, the Controller will take the pre-set IP address: 192.168.0.101. If there is a router present on the same network, the router will assign an IP address to the Controller in three minutes and the pre-set IP address will be invalid. **Note**: *When the controller is DHCP enabled after power on, the router (if connected to the same network) will assign an IP address to the Controller. If network is disconnected at this time, the Controller won't be able to pre-set an IP address and its IP address would be 0.0.0.0. If a pre-set IP address is needed, you need to power off the Controller and then power it on again. If it is in static IP mode after power on, the Controller won't preset an IP address either. If there is no router present, you can connect your PC to the LAN port of the Controller and modify the PC's IP address in the range of 192.168.0.X, then the PC will pre-set an IP address to the Controller in three minutes for data communication.*
10	Digital I/O	8-CH GPIO dry contact input interface, with a voltage range of 0~24V, for collecting digital level signals, capable of low level signal sensing.

No.	Name	Function Description
11	Relay OUTPUT	The Controller features 8 sets of relay 2-PIN phoenix connectors; each relay is isolated and normally open, and can switch up to 2A 30VDC / 1A 125VAC peak. The connector does not support voltage output.
12	IR-SERIAL OUTPUT	The Controller features 8 sets of multi-mode 2-PIN phoenix connectors for IR transmitting or one-way serial signal outputting. The ports can connect to devices with signal level 0-5V in RS232 mode. The left pin is for IR/serial data, the right for GND. The IR-Serial working mode is programmable: In **IR transmitting** mode, the outputting IR wave length ranges within 20K-60KHZ. In **one-way serial data outputting** mode, the left pin is for TXD, the right for GND, and both are configurable in the program.

Table 5-1: Pin-outs of the 9-pin phoenix connector for COM1/2/3/4

PIN1	RX- (used in RS422 and RS485)
PIN2	RX+ (used in RS422 and RS485)
PIN3	TX- (used in RS422 and RS485)
PIN4	TX+ (used in RS422 and RS485)
PIN5	GND
PIN6	TXD (used in RS232 and RS232+hardware flow)
PIN7	RXD (used in RS232 and RS232+hardware flow)
PIN8	RTS (used in RS232+hardware flow)
PIN9	CTS (used in RS232+hardware flow)

Note: *In RS485 mode, the wires connecting to PIN1 and PIN3 should be stranded as one, PIN2 and PIN4 as another one.*

6. Application Example