



Simply Better Connections

ATEN VanCryst™

VK1200 / VK2200

Control Box Gen. 2

Setup Guide

Compliance Statements

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Warning

Operation of this equipment in a residential environment could cause radio interference.

Achtung

Der Gebrauch dieses Geräts in Wohnumgebung kann Funkstörungen verursachen.



KCC Statement:

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이 기기는 업무용 (A 급) 전자파적합기기로서 판매자 또는 사용자는 이
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합니다.

Industry Canada Statement

This Class A digital apparatus complies with Canadian ICES-003.

CAN ICES-003 (A) / NMB-003 (A)

RoHS

This product is RoHS compliant.

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Overview

The VK1200 / VK2200 Control Box is an Ethernet-based controller device that connects and integrates a spate of devices to provide single-access configuration and convenient remote control for a room setting, such as boardrooms and lecture halls.

It offers multiple bidirectional serial ports, relays, IR/serial ports, digital I/O, and 12 V DC power output ports, as well as a dedicated control LAN port, separate from the corporate LAN, for IP device management within a secure subnetwork. In addition, it also supports a range of ATEN Expansion Boxes in providing versatile scalability.

Once successfully connected, users will be able to configure all in-room devices using the ATEN Configurator software — VK6000, and allow remote control using ATEN Touch Panel, ATEN Keypads, and Android / iOS / Windows mobile devices via the ATEN Control System app.

For a centralized management, the VK1200 / VK2200 can be connected to ATEN Unizon, a global AV management platform software, allowing users to control and monitor multiple ATEN Ethernet-based solutions across different locations, including but not limited to ATEN Control Boxes, at the same time.

Package Contents

Make sure the following are present and in working condition:

- 1 VK1200 / VK2200 Control Box Gen. 2
- 1 power cord
- 1 foot pad set (4 pcs)
- 1 rack mount kit (VK2200 only)
- 1 user instructions
- 1 terminal block kit

Terminal Block	VK1200	VK2200
2-Pin	7	20
3-Pin	2	6
5-Pin	1	4

Before You Start

The following is a checklist of the items to prepare / consider before you start:

- Go through the numbers and types of ports available, and see if it satisfies all of the devices you want to be controlled within your room setting.

Interface		VK1200	VK2200
Bidirectional RS232/422/485 Serial	3-Pin RS-232	1	6
	5-Pin RS-232/422/485	1	2
Unidirectional IR/Serial		2	8
Relay		4	8
Digital I/O		2	8
12 V DC Output		1	4
Ethernet		2	2

Note: For more control port interfaces, up to 8 ATEN Expansion boxes per expander model can be connected to the VK1200 / VK2200. See *Compatible Products* on the product web page for details.

- Consider the recommended maximum length of each interface cable, as listed below, and choose an appropriate installation location for the VK1200 / VK2200.

Interface	Length (m)
RS-232	15
RS-422/485	350
Relay	30
I/O	30
IR	30

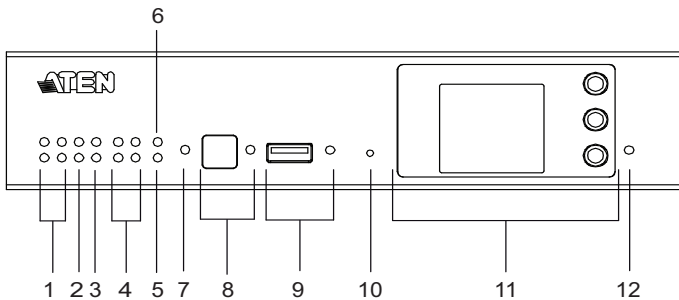
Note: The maximum allowed length of each interface cable may vary depending on the cable quality.

- ❑ Prepare a PC with the following specifications, which may be used to set the system settings of the VK1200 / VK2200 and run VK6000.
 - ◆ Windows 7 / 8 / 8.1 / 10
 - ◆ Installed with .Net Framework V4.5 or later

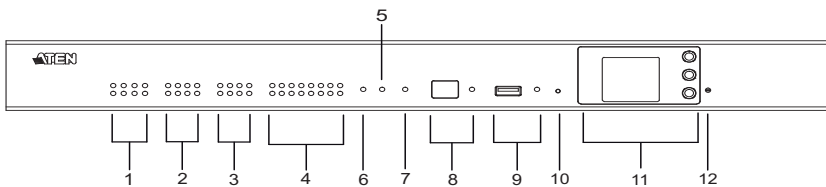
- ❑ Take note of the network information and login credentials of each IP device that will be connecting to and managed by the VK1200 / VK2200, if any.

Front Panel

VK1200



VK2200

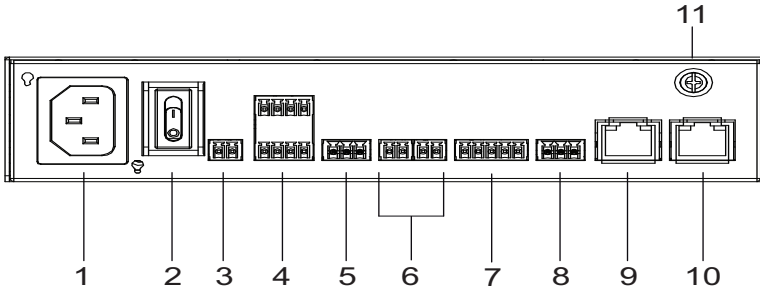


No.	Component	Description
1	relay LEDs	<ul style="list-style-type: none"> ◆ Lights green to indicate an active device connection or signals being transmitted. ◆ Blinks green once to indicate system startup, with the buzzer beeping once
2	I/O LEDs	
3	IR / serial LEDs	
4	serial LEDs	

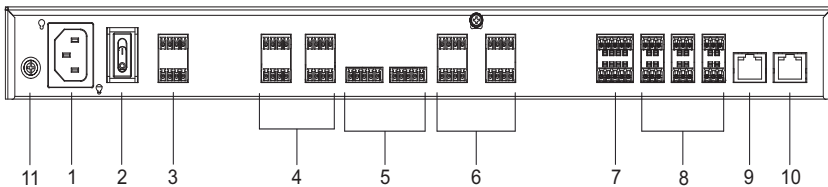
No.	Component	Description
5	LAN LED	Lights green to indicate successful connection to the network.
6	Control LAN LED	
7	DC output overload LED	<p>Lights orange to indicate DC output exceeding the maximum output threshold, with the buzzer beeping for 3 seconds.</p> <p>Note: Please unplug any of the connected devices to keep its total output under 12 V DC, 1 A / 2A for VK1200 / VK2200 and restart the controller unit.</p>
8	IR receiver / LED	<p>Passes the functions of a remote control to the VK1200 / VK2200 in learning mode. The distance between the IR remote and the receiver window should be kept under 10 cm with a direct line of sight.</p> <ul style="list-style-type: none"> ◆ The LED blinks green to indicate the unit is receiving signals from an IR remote control ◆ The LED lights green to indicate entering learning mode, or IR learning success with the buzzer beeping once.
9	USB port / LED	<p>Plugs in a USB device to upload Viewers (configured by the VK6000) to the VK1200 / VK2200.</p> <ul style="list-style-type: none"> ◆ The LED blinks green to indicate that Viewers are being uploaded, and lights green to indicate a successful upload, with the buzzer beeping once upon USB plug-in and once upon upload success. ◆ The LED lights orange to indicate upload failure, with the buzzer beeping 3 times for no available file found or upload failure.
10	reset button	<ul style="list-style-type: none"> ◆ Clear all settings but network: Press and hold until the front panel LEDs blink once, with the buzzer beeping once (about 8 seconds). The LEDs and buzzer will trigger once more when the reset is complete. ◆ Reset network settings: Short press once. <p>Note: For more reset functions, please refer to the user manual.</p>
11	LCD panel and buttons	Use the <i>Up</i> , <i>Down</i> , and <i>Enter</i> buttons to display the unit's system information, and set its controller ID.
12	power LED	Lights green when the unit is turned on.

Rear Panel

VK1200



VK2200



No.	Component	Description
1	power socket	Plugs in the power cord from an AC power source.
2	power switch	Powers the unit on or off.
3	12 V DC output ports	1 / 4 DC output port(s) providing a total output of 12 V DC, 1 / 2 A from the VK1200 / VK2200.
4	relay channels	4 / 8 channels; normally open, isolated relays with a contact rating of 24 V DC, 2 A max.
5	I/O channels	2 / 8 channels that can be configured as digital inputs or outputs, with the first pin being ground and the rest being number pins. <ul style="list-style-type: none"> ◆ Digital Input: <ul style="list-style-type: none"> ◆ VDC Mode: 0 - 24 V DC; programmable range of 1 - 24 V DC ◆ Dry Contact Mode: Pull-up 2k Ω to +12 V DC ◆ Digital Output: 300 mA sink from 24 V DC

No.	Component	Description	
6	IR / serial ports	2 / 8 IR ports that can also be configured as RS-232 TX ports. pin 1: Signal / pin 2: Ground.	
7	RS-232/422/485 serial ports	1 / 2 5-pin RS-232/422/485 serial ports by pin assignment.	
8	RS-232 serial ports	1 / 6 3-pin RS-232 serial ports with Tx, Rx and GND.	
9	Control LAN	Connects the unit to a secure subnetwork, separate from the corporate LAN, for managing IP devices and configuration by the ATEN Configurator VK6000, as well as for remote control by ATEN Keypads, Touch Panel or the ATEN Control System app on mobile devices.	Default network settings when no dynamic IP address is assigned, by a DHCP server, after 30 seconds: IP: 192.168.0.60 / mask: 255.255.255.0
10	LAN	Connects the unit to the corporate LAN for remote access and centralized management by ATEN Unizon.	Default network settings when no dynamic IP address is assigned, by a DHCP server, after 30 seconds: IP: 192.168.1.60 / mask: 255.255.255.0
11	grounding terminal	Connects to the grounding wire.	

Overall Installation Procedure

The installation of the VK1200 / VK2200 shall be done in the following order:

- ♦ **Step 1 — Mounting the VK1200 / VK2200**
see *Placement*, page 8.
- ♦ **Step 2 — Powering the VK1200 / VK2200**
see *Powering the VK1200 / VK2200*, page 11.
- ♦ **Step 3 — Controller ID Setting and Initialization**
see *ID, Network & License Configuration*, page 12.
- ♦ **Step 4 — Wiring and Connecting Devices**
see *Wiring and Connecting to Devices*, page 16.
- ♦ **Step 5 — Adding the VK1200 / VK2200 on VK6000**
see *ATEN Configurator — VK6000*, page 27.

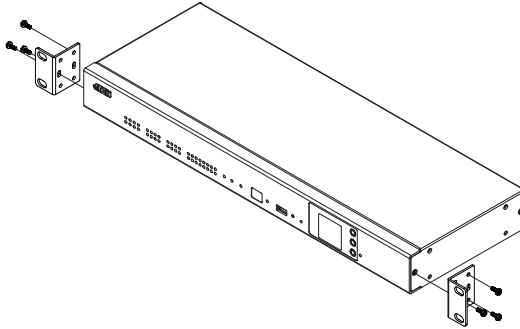
Placement

Rack Mount

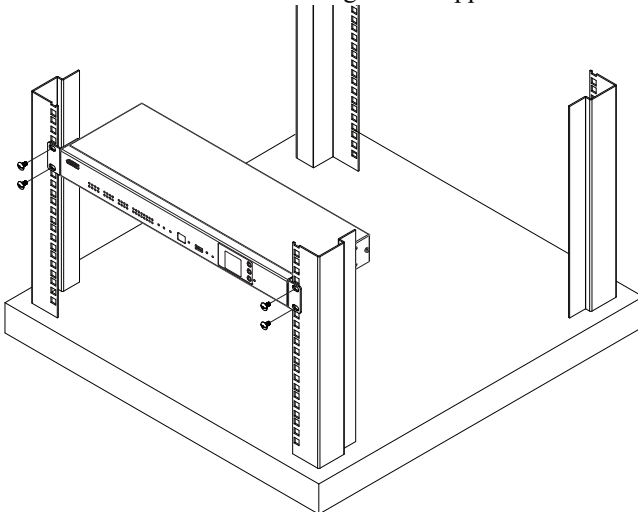
The VK1200 / VK2200 can be mounted onto a 19" (1U) system rack.

VK2200

1. Using the rack mount kit, attach the 2 mounting brackets onto the sides of the unit with the 6 screws (M3x6) included.



2. Align the mounting brackets' screw holes with that of the front of the rack, and secure the unit onto the rack using 4 self-supplied screws.

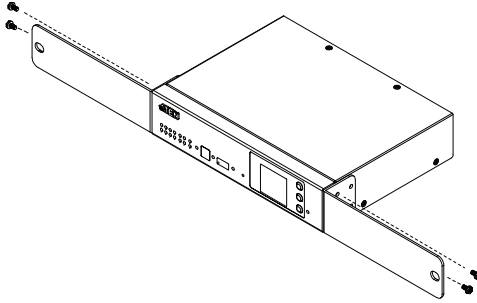


VK1200

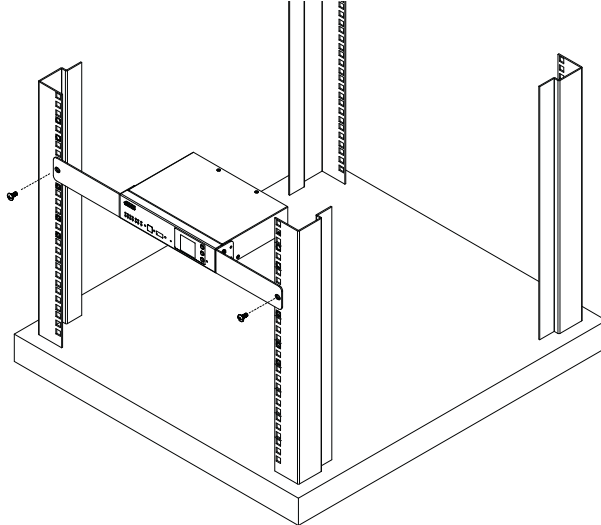
Note: For VK1200, the rack mount kit (2X-021G / 2X-049G) must be purchased separately.

■ 2X-049G (single rack mount)

1. Using the rack mount kit, attach the 2 mounting brackets onto the sides of the unit with the 4 screws (M3x6) included.

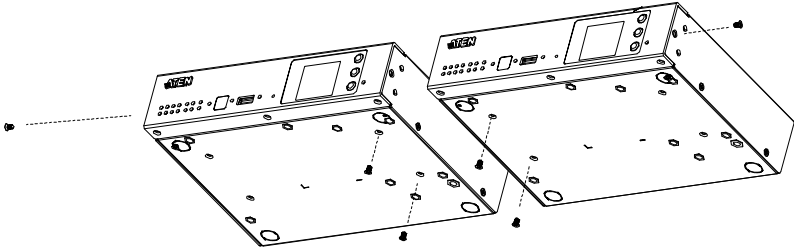


2. Align the mounting brackets' screw holes with that of the front of the rack, and secure the unit onto the rack using 2 self-supplied screws.

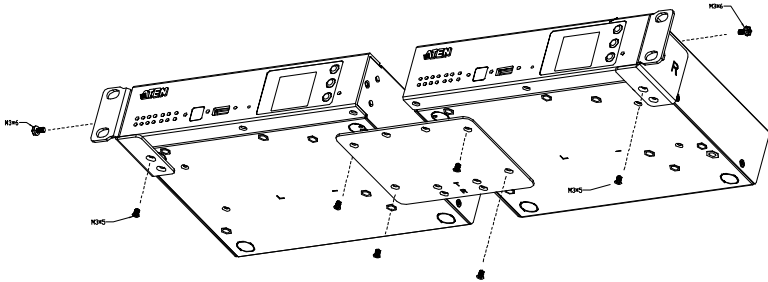


■ 2X-021G (dual rack mount)

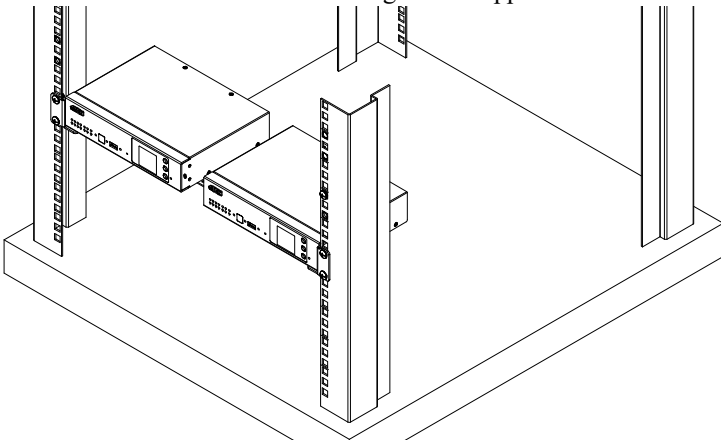
1. Remove 2 screws at the bottom and 1 screw at the side from each of the two VK1200 units, as shown below.



2. Use 4 of the screws from step 2 to secure the two VK1200 units together with the link bracket. Then install the left and right mounting brackets onto the sides of the units using 2 of the M3x5 and M3x6 screws included.



3. Align the mounting brackets' screw holes with that of the front of the rack, and secure the units onto the rack using 4 self-supplied screw.



Desktop

To place the VK1200 / VK2200 on a flat surface, such as a desk, simply attach the foot pad set provided onto its 4 corners and place it on the surface.

Powering the VK1200 / VK2200

1. Use a grounding wire to ground the unit by connecting one end to the grounding terminal (No. 1, *Rear Panel*, page 5) and the other end to a suitable grounded object.

Note: Do not omit this step. Proper grounding helps prevent damage to the unit from power surges and static electricity.

2. Plug the power cord into the unit's power socket (No. 2, *Rear Panel*, page 5), and connect it to an AC power source.
3. Using a self-supplied Cat 5e/6 cable, connect the unit to a secured subnetwork via its Control LAN port (No. 9, *Rear Panel*, page 5).
4. (Optional) Using another Cat 5e/6 cable, connect the unit to the corporate LAN, via its LAN port (No. 10, *Rear Panel*, page 5), for remote access and/or centralized management by ATEN Unizon.
5. Start the unit by switching on its power switch (No. 3, *Rear Panel*, page 5). Upon startup, all of VK1200 / VK2200's interface LEDs will blink once, with the buzzer beeping once.

ID, Network & License Configuration

Setting Controller ID

Use the LCD panel on the VK1200 / VK2200 to set its ID.

Note: Take note of the controller ID, which should be unique and unrepeated if there are other controller devices within the same subnet.

Determining the IP Address

	LAN	Control LAN (CLAN)
DHCP	When connected to a DHCP network, the VK1200 / VK2200 is assigned with an IP address automatically upon startup.	
Non-DHCP	When no dynamic IP address is assigned to it within 30 seconds after startup, the VK1200 / VK2200's default network settings are applied:	
	Default IP Address: 192.168.1.60 Subnet Mask: 255.255.255.0	Default IP Address: 192.168.0.60 Subnet Mask: 255.255.255.0

The network information of the VK1200 / VK2200 can be found on its LCD panel, via *Information*, as illustrated below.




Changing Network Settings

There are two methods of changing the network settings of the VK1200 / VK2200 — via **IP Installer** *or* **web interface** — on a PC within the same subnet.

IP Installer

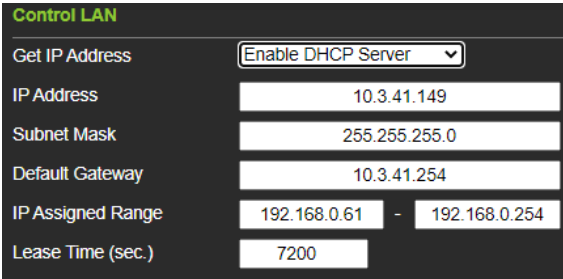
1. Using a Windows PC, download **IP Installer** zip file under *Support and Downloads* from the VK1200 / VK2200's product web page. Then extract and execute *IPInstaller.exe*.
2. Select the VK1200 / VK2200 from the *Device List*, and select **Use the following IP address** under *IPv4 settings* to change its IP address, subnet mask, and default gateway.

Web Interface

1. Open a web browser, enter VK1200 / VK2200's IP address, and log into its web interface using the default access key — *password*. Upon login, the user will be prompted and required to set a new password for the unit.
2. Click **Settings**  > **Network**, select **Manually (DHCP off)** from the *Get IP Address* drop-down list, and change its network settings, namely IP address, subnet mask, and default gateway.

■ Working as a DHCP Server

To set the VK1200 / VK2200 as a DHCP server for automatically assigning dynamic IP addresses to the IP devices managed via its Control LAN, do the following:



The screenshot shows the 'Control LAN' configuration page. At the top, 'Control LAN' is written in green. Below it, there are several configuration fields:

Get IP Address	Enable DHCP Server
IP Address	10.3.41.149
Subnet Mask	255.255.255.0
Default Gateway	10.3.41.254
IP Assigned Range	192.168.0.61 - 192.168.0.254
Lease Time (sec.)	7200

1. From the *Get IP Address* drop-down list, select **Enable DHCP Server**, and optionally change the network settings of the VK1200 / VK2200, namely IP address, subnet mask, and default gateway.
2. Next to **IP Assigned Range**, define the desired range of IP that can be used for assigning IP addresses to the connecting IP devices.
3. Next to **Lease Time**, define the amount of time an assigned IP address becomes available for use after the IP device it is previously assigned to has been inactive for.

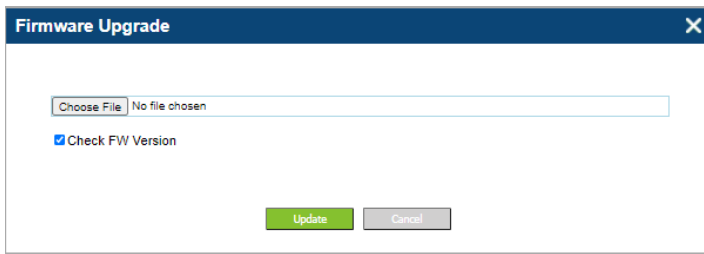
Firmware

The current firmware version of the VK1200 / VK2200 is displayed on its web interface main page, as shown below.

General (7) Edit	
Control LAN IP	10.3.41.149
MAC Address	00:10:74:23:40:2B
LAN IP	
MAC Address	00:10:74:23:00:2B
Date & Time	2000/01/01 02:06:09
FW Version	V9.9.282.007

Upgrading Firmware

To upgrade the VK1200 / VK2200's firmware, download the latest firmware file from its product web page, and save it on the PC.



On the VK1200 / VK2200's web interface main page, click **Edit** next to *General*, and click **Update** under *Firmware*. Then browse for the downloaded firmware file to upgrade.

Note: When **Check FW Version** is checked, the unit will compare its current firmware version with that of the firmware file selected, and only allow upgrading to a later version.

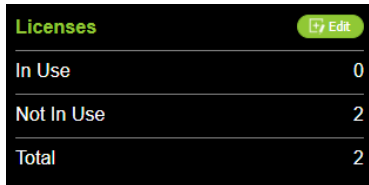
Licenses

A license is a software permit that the VK1200 / VK2200 grants to a mobile device for remote control. The VK1200 / VK2200's numbers of free and maximum licenses are described below:

License	VK1200	VK2200
Free Licenses	2	
Max. Licenses	32	

Adding Licenses

By default, the VK1200 / VK2200 is supplied with 2 free licenses for granting remote control to 2 mobile devices.



Licenses Edit	
In Use	0
Not In Use	2
Total	2

To add additional licenses, click **Edit** next to *Licenses* on its web interface main page, and click **Add License**. Then follow the on-screen instructions to export a license file, apply for a license upgrade, and import the upgraded license file.

Add License
✕

Follow the steps below to add licenses to your ATEN Controller

1. Click Export Controller ID and send the generated file to your system integrator.
2. The system integrator returns an updated license file.
3. Click Import License File in this dialog box.

Import License File
Export Controller ID

Wiring and Connecting to Devices

To connect the VK1200 / VK2200 to various devices, for integration and control, refer to the corresponding interface for the wiring information of each.

- ◆ **12 V DC Power Outputs** — see *12 V DC Power Output*, page 16.
- ◆ **Relay** — see *Relay*, page 18.
- ◆ **Digital I/O** — see *Digital I/O*, page 20.
- ◆ **Bidirectional Serial** — see *Bidirectional Serial*, page 23.
- ◆ **Unidirectional IR / Serial** — see *Unidirectional IR / Serial*, page 24.
- ◆ **Control LAN** — see *Control LAN*, page 26.

Note: All diagrams herein are exemplified using VK2200.

12 V DC Power Output

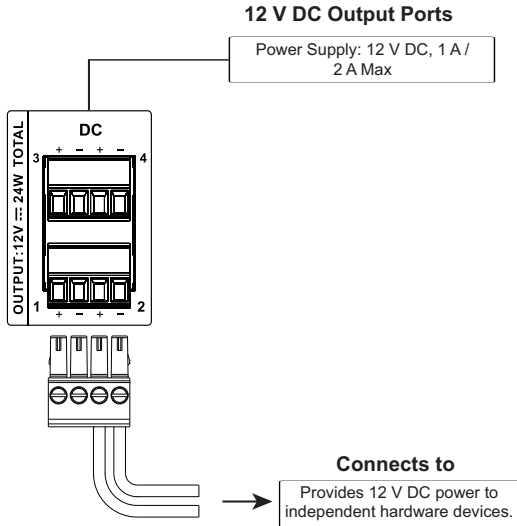
The VK1200 / VK2200 provides the following 12 V DC output(s):

	VK1200	VK2200
Number of Channels	1	4
Max. Power Supply	DC 12 V, 1 A	DC 12 V, 2 A

It can power one or four independent hardware device(s), as illustrated below, as well as relay or digital output devices.

Note: For powering relay or digital output devices connected, please refer to *Powered by 12 V DC Power Output*, page 19, and *Powered by 12 V DC Power Output*, page 21, respectively.

Independent Power Supply



When the total current exceeds the maximum threshold, the DC power overload LED lights orange, and the alarm beeps for 3 seconds, while turning the channel(s) off.

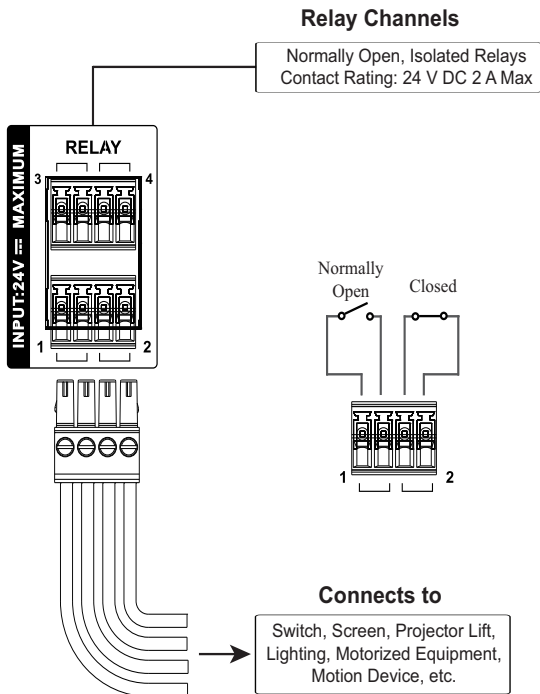
To correct power overload, turn off VK1200 / VK2200, disconnect all devices connected to the 12 V DC outputs. Then turn the VK1200 / VK2200 back on and reconnect the devices one at a time, to ensure the maximum current threshold is not exceeded.

Relay

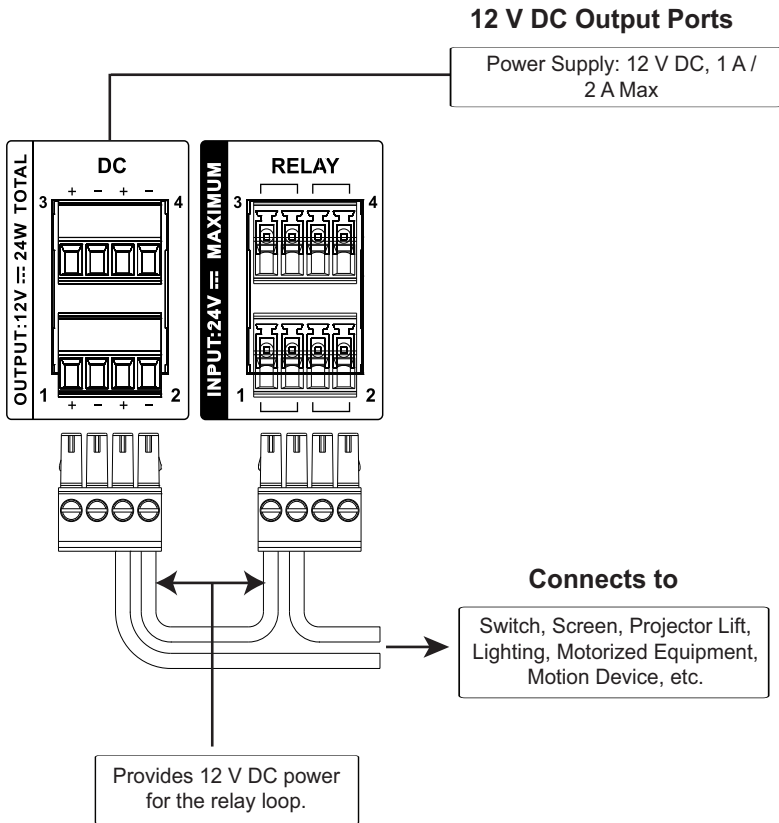
The VK1200 / VK2200 provides the following isolated relays:

	VK1200	VK2200
Number of Channels	4	8
Contact Rating	24 V DC, 2 A	
Default Status	Normally Open	

Using Self-Supplied Power



Powered by 12 V DC Power Output

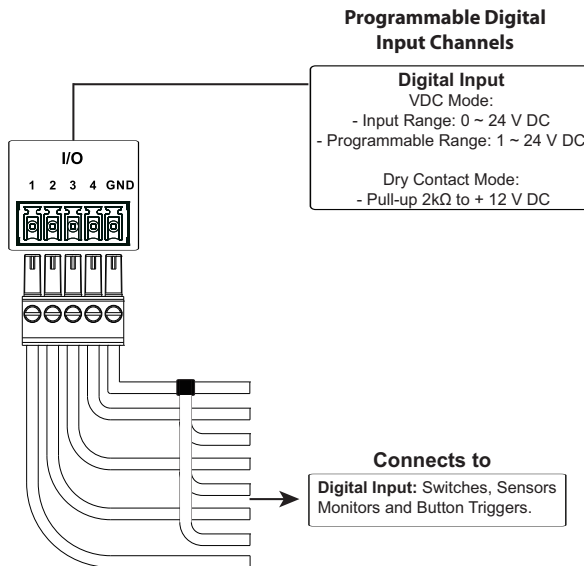


Digital I/O

The VK1200 / VK2200 provides the following digital input/output channels:

		VK1200	VK2200
Number of Channels		2	8
Digital Input	VDC Mode	Voltage range: 0 ~ 24 V DC Programmable range: 1 ~ 24 V DC	
	Dry Contact Mode	Pull-up: 2 kΩ to +12 V DC	
Digital Output		Normally Open 300 mA sink from 24 V DC	

Digital Input



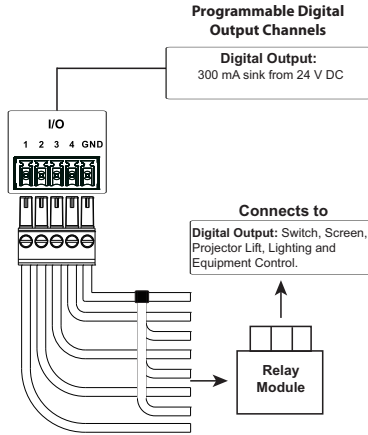
■ Dry Contact

Connects to digital I/O devices with a input loop — open or closed — for providing indicators from sensors or switches of an event, which can be used by the VK1200 / VK2200 to trigger certain events and/or functions.

■ VDC Mode

Connects to DC devices for providing voltage signals (1 ~ 24 V) to the VK1200 / VK2200, to trigger certain events and/or functions when the voltage signals are above *or* below the defined threshold.

Digital Output

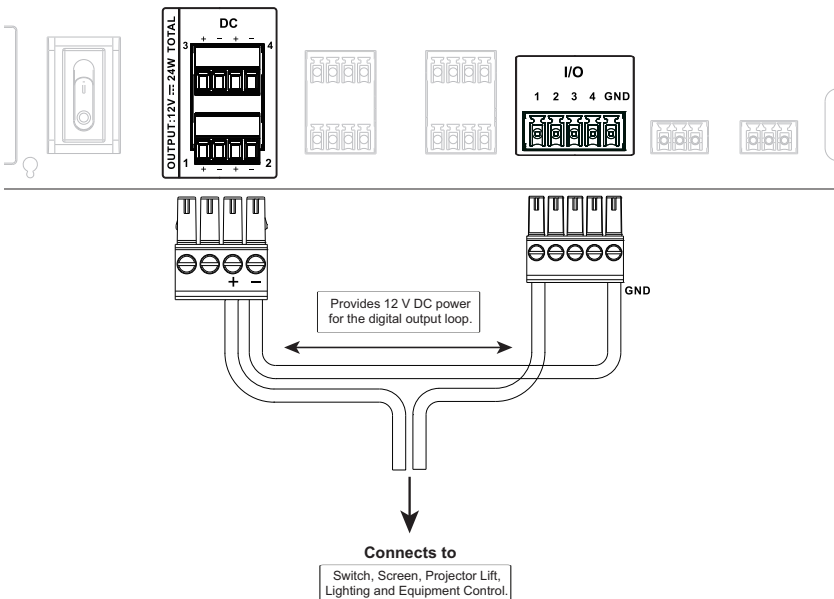


Digital outputs provide non-powered dry contact (open and closed) circuit control of devices, which must be connected using a **relay module**.

■ Powered by 12 V DC Power Output

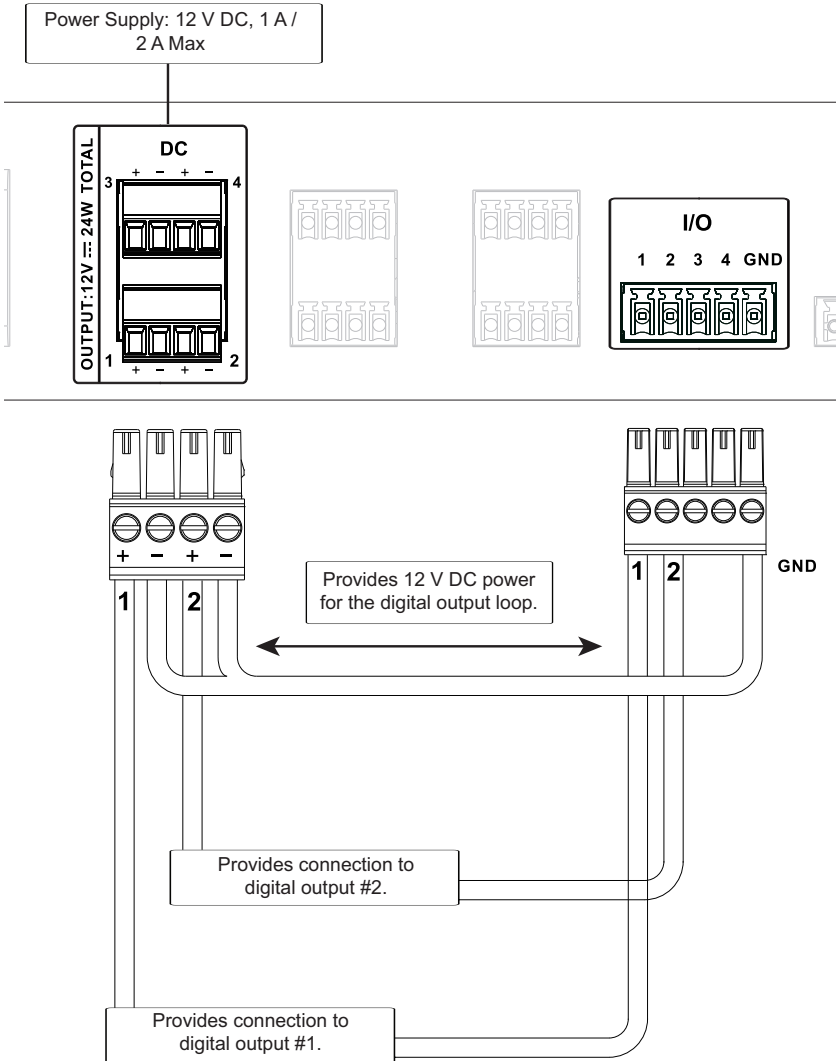
12 V DC Output Ports

Power Supply: 12 V DC, 1 A / 2 A Max



■ Digital Output Dual Power Supply

12 V DC Output Ports

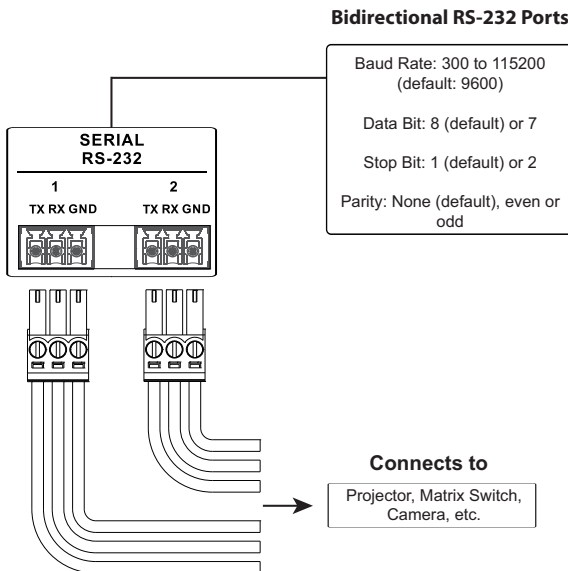


Bidirectional Serial

The VK1200 / VK2200 provides the following RS-232/422/485 ports:

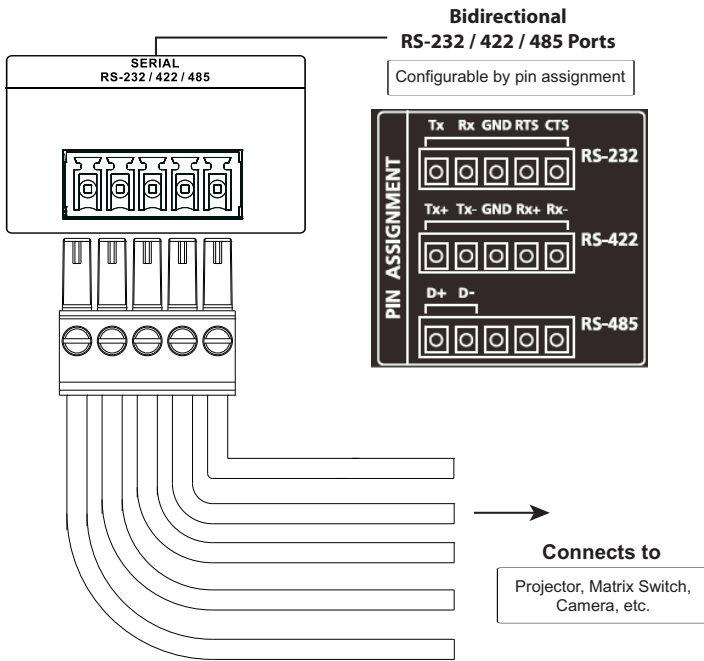
		VK1200	VK2200
Number of Channels	3-Pin RS-232	1	6
	5-Pin RS-232/422/485	1	2
Baud rate		300 ~ 115200 (default: 9600)	
Data bit		7, 8 (default)	
Stop bit		1 (default), 2	
Parity		None (default), Even, Odd	

RS-232 (3-Pin)



Connect to devices for controlling and receiving status messages from them. For bi-directional RS-232 control, the transmit (TX), receive (RX) and ground (GND) terminals must be wired on both the VK1200 / VK2200 and the device connecting.

RS-232/422/485 (5-Pin)

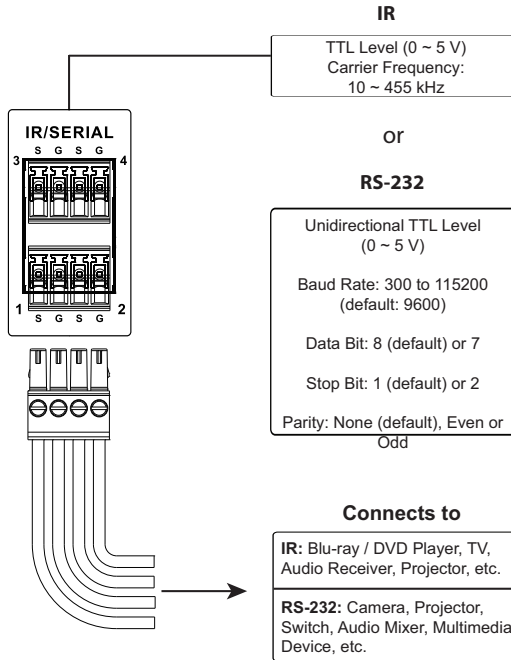


Connect to devices, configurable by pin assignments, for controlling and receiving status messages from them.

Unidirectional IR / Serial

The VK1200 / VK2200 provides the following IR / serial (RS-232) ports:

		VK1200	VK2200
2-Pin IR/Serial		2	8
IR	Carrier Frequency	10 ~ 455 kHz	
	Default Level	Low	
Serial (RS-232)	Baud rate	300 ~ 115200 (default: 9600)	
	Data bit	7, 8 (default)	
	Stop bit	1 (default), 2	
	Parity	None (default), Even, Odd	
	Signal Level	TTL (0 ~ 5 V DC)	



Connect to IR and/or RS-232 devices. By default, these channels are set to transmit IR signals.

IR Connection

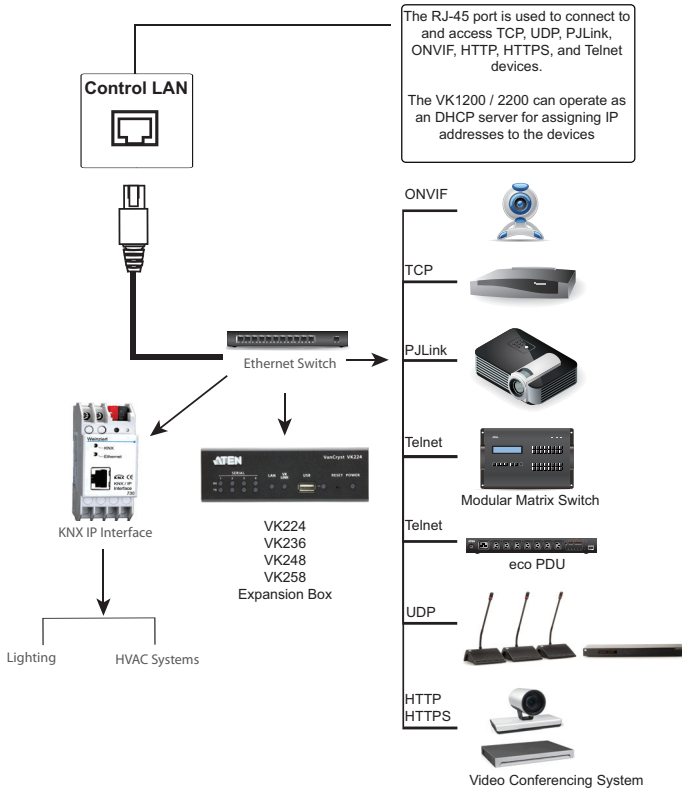
Connect a transmitter cable to a set of IR and ground terminals of the VK1200 / VK2200, and set up the IR transmitter on or near the IR receiving port of the IR device.

Serial Connection

Connect a serial device's receiver (RX) and ground (GND) terminals to a set of serial (TX) and ground (GND) terminals of the VK1200 / VK2200.

Control LAN

The Control LAN provides an Ethernet connection for controlling up to 64 IP devices and/or remote control by ATEN Key pads, Touch Panel, and the ATEN Control System app on a mobile device within the same subnetwork.

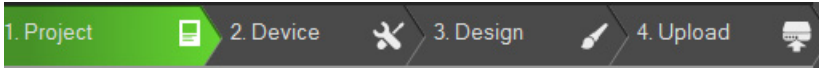


ATEN Configurator — VK6000

Download the ATEN Configurator software — VK6000 — from its product web page, and install it on a PC.

Adding VK1200 / VK2200

1. After installing the ATEN Configurator, the main page appears. Start by clicking the **Project** tab at the top.



2. On the **Project** tab, provide the information of the VK1200 / VK2200. Then click **Start Project**.
3. In the **Device** tab, add all devices to be managed by the VK1200 / VK2200 into the *Device Configuration* list.

Once all devices are successfully added and configured by the VK6000, users can start designing dedicated control interfaces — **Viewers** — on the VK6000 to be uploaded into the VK1200 / VK2200 for easy remote control to all devices via ATEN Keypads, Touch Panel, or Control System app with mobile devices.

For detailed information on VK6000, as well as Control System mobile app, please refer to the *Control System User Manual*.

ATEN Expansion Box

For adding additional ports, users can purchase the ATEN Expansion Boxes to be connected to the VK1200 / VK2200 for flexible scalability, including:

Model	Description
VK224	4-Port Bidirectional Serial Expansion
VK236	6-Port Unidirectional IR/Serial Expansion Box
VK248	8-Channel Relay Expansion Box
VK258	8-Channel Digital I/O Expansion Box

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