IndigoVision

20 Channel Encoder

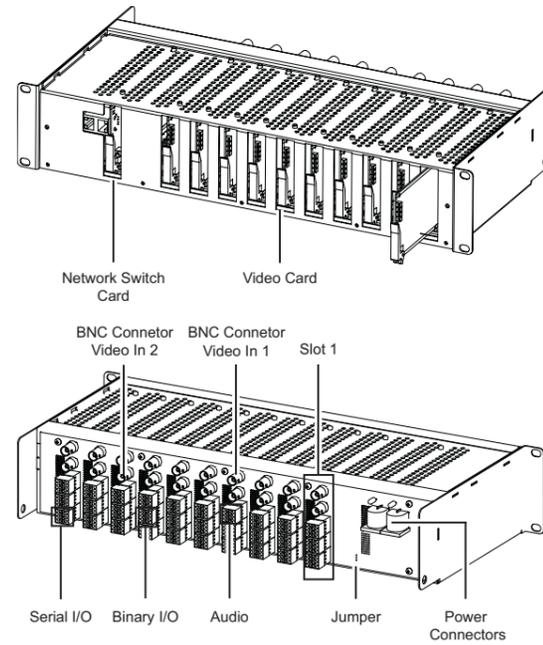# Rack Mounted

Quick Start Guide

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Further information

For further information, see the user guide:
www.indigovision.com/20-channel-encoder-userguide
Alternatively, scan the QR code below.

Document ID: IU-RACK-MAN008-3

Package contents

20 Channel Encoder

Network Switch Card — Video Card

BNC Connetor Video In 2 — BNC Connetor Video In 1 — Slot 1

Serial I/O — Binary I/O — Audio — Jumper — Power Connectors

Additional

- A power supply unit for the 20 Channel Encoder

Connections

There are connections on both the front and rear of the device.

Network Switch Card — Video Card

BNC Connetor Video In 2 — BNC Connetor Video In 1 — Slot 1

Serial I/O — Binary I/O — Audio — Jumper — Power Connectors

Figure 1 Connections - front and rear

Safety notices

Warning

⚠ *Ensure the power supply is switched off during installation.*

⚠ *When installing the device, fasten it securely. A falling device may cause personal injury.*

Caution

⚠ *Only install in suitable environments. For more information, refer to the user guide.*

⚠ *If more than two racks are mounted on top of each other, ensure there is adequate air circulation to keep all units within the specified operating temperatures.*

⚠ *Handle the device with care so the main electronics and components are not damaged.*

⚠ *Input voltages above 50Vpk at Vin will irrevocably damage the device.*

⚠ *For security reasons, you must change the device's default username and password.*

⚠ *Ensure each device has a unique IP address.*

Notices

Read this guide before installing the device.
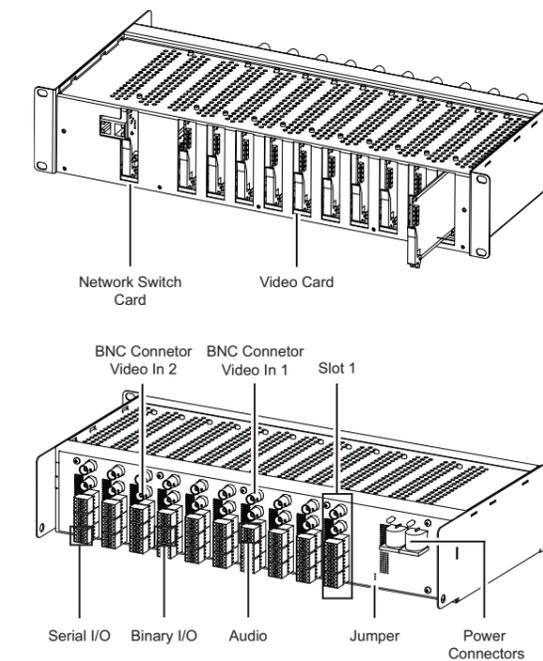
Terminal block connections

The terminal block provides connection pins for the binary IO, serial IO, and audio.

Figure 2 Terminal blocks
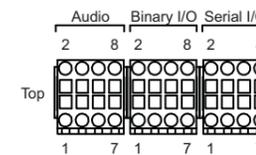
Audio

Pin Number	Description
1	Out1
2	GND
3	In1
4	GND
5	Out2
6	GND
7	In2
8	GND

Regulatory

- EN 55022 (2010) ITE emission standard - Class A
- EN 55024 (1998) + A1:2000 +A2:2003 ITE immunity standard
- EN 60068-2-1 & 2 Low & High temp
- EN 60068-2-6 & 64 Sinusoid & Random vibration
- EN 60068-2-29 Bump
- EN 60068-2-30 Humidity up to 95% Non Condensing
- CFR47 (2011) Part 15 subpart B - Class A (US Federal Code of Regulations)

Binary IO

Pin Number	Description
1	In1
2	GND
3	Out1
4	3.3V
5	In2
6	GND
7	Out2
8	3.3V

Serial IO

Pin Number	Description
1	TXp (RS485)
2	TXn (RS485)
3	RXp (RS485)
4	RXn (RS485)
5	GND
6	GND
7	TX (RS232)
8	RX(RS232)

1. POWERING THE DEVICE

The device uses a 100-250V AC power supply unit (0.56-0.22A). Two power supply connectors are available to accept dual redundant power supplies.

▶ *For more information, refer to the user guide*

2. CONFIGURING THE DEVICE

Before you connect the device to your network, you must configure the device's IP address and subnet mask appropriately.

Preparing PC for initial device configuration

Each card is assigned two IP addresses, one for each channel. For each card, the primary IP address is used to configure both channels.

The following table displays the initial, default IP properties for the device.

Initial Configuration	
Primary Channel IP Address	10.5.1.11
Secondary Channel IP Address	10.5.1.12
Subnet Mask	255.0.0.0
Default Gateway	10.0.0.1

If you have been shipped a fully populated 20 Channel Encoder, the video cards are supplied with their IP addresses set to 10.5.1.11 and 10.5.1.12 for the card in slot 1, 10.5.1.13 and 10.5.1.14 for the card in slot 2, etc.

If these addresses are acceptable on your network, you do not need to change them. If these settings conflict with your network, you must not connect these cards to your network until you have changed the settings to suit your network.

Preparing an isolated network

Connect the Network Switch card and the PC you are using to configure it on their own isolated network.

To do this:

1. Close all open applications on your PC.
2. Disconnect your PC from the current network. Connect your PC to the Network Switch card either directly using a cross-over network cable or through an isolated switch. The Link LED on the Network Switch card should light up.

Preparing for initial device configuration

You cannot connect the video cards to your network until you have changed the IP settings to suit your network.

To change the factory defaults of your video cards, you must first (temporarily) modify your PC's network settings.

Configure video cards

Once you have changed your PC's network settings, you can change the IP settings of the video cards from the factory defaults.

On dual channel video cards the IP properties are configured on the primary channel. The primary and secondary channel must have the same subnet mask and gateway, but unique IP addresses.

To change these values:

1. Open the Internet Explorer application.
2. Enter the IP address of the card to be configured (10.5.1.11, 10.5.1.12, 10.5.1.13, etc.) into the browser address bar, then click **OK**.

The Configuration **Home** page opens.

3. Click the **Network** link on the left of the page.
4. Configure the network parameters for the card to suit your installation.

   You may need to change the Ethernet link type default value from *Auto-negotiate* for some network devices. If you have problems maintaining a network link, contact your system administrator to determine the appropriate setting.

   On dual input cards, DHCP assigns an IP address to the primary channel only. You need to manually assign an IP address to the secondary channel.

   When you have entered the configuration data, click **Submit** to apply the changes.

5. To configure another card, repeat steps 2-4, using a different IP address for each card.

When you have configured all your cards, return the PC to its original settings, or change them as appropriate for your network.

You are now ready to take your device(s) off the isolated network and connect them to the main network, and install the 20 Channel Encoder.
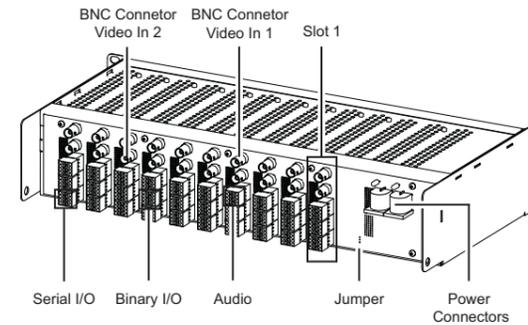
3. INSTALLATION

This section details how to install the 20 Channel Encoder.

Connecting a video source, binary IO and audio

You must complete the initial configuration before you start connecting the 20 Channel Encoder.

1. Connect a video source to a Video In BNC connector on the back plane.

2. If the system is not fully populated, verify that the video source is connected to a slot which has a video card inserted.
3. Connect alarms and audio if using these features.

Installing the rack into a cabinet

When installing your 20 Channel Encoder in a rack cabinet, please consider the following:

- **Elevated Operating Ambient** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the specified 50°C maximum ambient temperature (T_{ma}) of the unit.
- **Reduced Air Flow** — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. To facilitate this, an air gap of at least 6cm on both sides of the unit is recommended.
- **Mechanical Loading** — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading** — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Earthing** — Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

1. Insert the 20 Channel Encoder into a 19" rack cabinet.
2. Attach the 20 Channel Encoder to the cabinet using four screws (not included).
3. Connect the power supply to the backplane.

Configure network redundancy

Network redundancy must be provided by the network switches connected to the 20 Channel Encoder. These switches must support the Rapid or standard Spanning Tree Protocol. This protocol quickly reconfigures the network when a failure occurs, preventing network loops which may otherwise occur if two switch ports on the 20 Channel Encoder are connected.

If Spanning Tree is not enabled on the network, network redundancy cannot be provided to the 20 Channel Encoder and only one of the network ports should be connected to the network.

IndigoVision recommends that two of the 20 Channel Encoder switch ports are connected to different network switches, ensuring that if one switch fails, the other will maintain network connectivity.

Both switches should be configured to turn on Spanning Tree for network redundancy and IGMP snooping for efficient multicast operation If there is a router on the network, ensure that IGMP snooping is enabled on each switch. If there is no router on the network, you should also ensure IGMP querying is enabled on the switch with the lowest IP address on the subnet.

The Network Switch card is an unmanaged switch, and does not support multicast filtering. Any multicast traffic received on any port of this switch, either from the Transmitter cards or from the network will be forwarded to all other ports, reducing the total network bandwidth available on each port correspondingly.

It is recommended that the network ports of the Network Switch Card are connected to switches that support multicast filtering. This will limit the multicast traffic to each of the video cards to that of the cards themselves. This maximizes the total available network bandwidth across the chassis backplane.