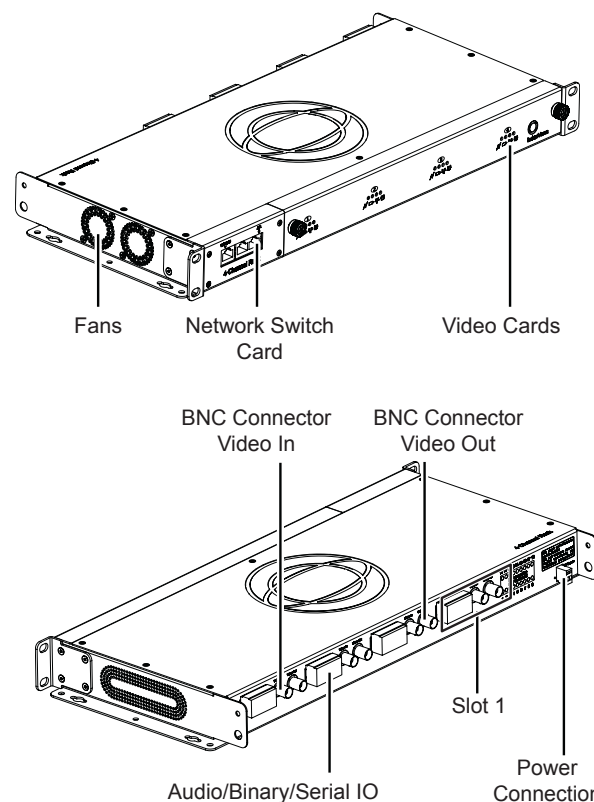


# INDIGOVISION FOUR CHANNEL ENCODER/DECODER 9000 RANGE

## QUICK START GUIDE

## PACKAGE CONTENTS



In addition to the rack chassis, the following items are also provided:

- A power supply unit for the Four Channel Encoder/Decoder

## 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.



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## AUDIO/BINARY/SERIAL IO CONNECTOR

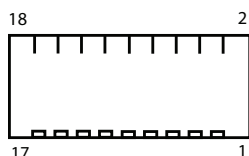


Figure 1 Terminal Block

Table 1: Terminal block pin numbers

Pin Number	I/O	Description
1	I	Serial: RS232/RS422 Rx/RxP
2	O	Serial: RS232/RS422 Tx/TxN
3	I	Serial: RS232/RS422 CTS/RxN
4	O	Serial: RS232/RS422 RTS/TxP
5	-	GND
6	-	GND
7	I	Binary I/O: Input -
8	I	Binary I/O: Input +
9	-	Binary I/O: R.1 (Output Relay Contact)
10	-	Binary I/O: R.2 (Output Relay Contact)

Pin Number	I/O	Description
11	I	Serial: Console Port Rx
12	O	Serial: Console Port Tx
13	-	GND
14	-	GND
15	I	Audio: Dynamic Microphone Input
16	I	Audio: Stereo Line Input Right
17	O	Audio: Mono Output
18	I	Audio: Stereo Line Input Left

## REGULATORY

- EN 55022 (1994) ITE emission standard - Class A
- EN 61000-3-2 (1995) mains harmonics - Class A
- EN 55024 (1998) ITE immunity standard
- EN 6100-3-3 (1995) voltage fluctuation
- CFR47 (1995) Part 15 subpart B - Class A (US Federal Code of Regulations)
- EMC – Rolling Stock Railway applications
  - EN 50121-3-2:2006
  - EN 50155:2007
- EMC – Trackside Railway applications
  - EN 50121-4:2006



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### CONTACT ADDRESS

CHARLES DARWIN HOUSE,  
EDINBURGH TECHNOPOLE,  
EDINBURGH, EH26 0PY, UK

### FURTHER INFORMATION

FOR FURTHER INFORMATION, SEE THE USER GUIDE:

WWW.INDIGOVISION.COM/FOURCHANNELENCODERDECODER-USERGUIDE

ALTERNATIVELY, SCAN THE QR CODE BELOW:



# 1. POWERING THE DEVICE

The device uses a 12V DC (3A) power supply unit.

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

# 2. INITIAL CONFIGURATION

You can configure video cards over the network or using an RS232 serial interface.



Caution

*Please ensure that no IP address clashes with your PC's settings before connecting any cards to your network. Contact your network administrator if you require further assistance.*

## Preparing PC for initial device configuration

If you have been shipped a fully populated Four Channel Encoder/Decoder, the video cards are supplied with their IP addresses set to 10.5.1.10, 10.5.1.11, 10.5.1.12, etc.

Initial Configuration	
Primary Channel IP Address	10.5.1.10
Subnet Mask	255.0.0.0
Default Gateway	10.0.0.1

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.

## Using the configuration pages

To configure your device using the Configuration pages you must do the following:

1. Prepare an isolated network.
2. Prepare your PC for initial device configuration.
3. Configure each card. This includes specifying its IP address and subnet mask.

You must also have one of the following:

- A CAT5 crossover cable suitable for connection between the PC and the RJ45 connector on the device
- A power source

## 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. Power up the Four Channel Encoder/Decoder.
3. 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 device to your network until you have changed the IP settings to suit your network.

To change the factory defaults of your device, you must first, temporarily, modify your PC's network settings.



Caution

*Make a note of the original value of all settings that are to be changed so that you can re-enter them when you have completed the initial device configuration.*

## 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.

To change these values:

1. Open the Internet Explorer application.
2. Enter the IP address of the card to be configured (10.5.1.10, 10.5.1.11, 10.5.1.12, 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.

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 Four Channel Encoder/Decoder.

# 3. INSTALLATION

## Connecting a video source, binary IO and audio

You must complete the initial configuration before you start connecting the Four Channel Encoder/Decoder.

1. Connect the video source to a Video In BNC connector on the backplane.
2. If the rack chassis 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 chassis into a cabinet

When installing your Four Channel Encoder/Decoder 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<sub>ma</sub>) 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 Four Channel Encoder/Decoder into a 19" rack cabinet.
2. Attach the Four Channel Encoder/Decoder to the cabinet using four screws (not included).
3. Connect the power supply to the backplane.

## Installing the device onto a flat surface

1. Attach the surface mount lugs to the Four Channel Encoder/Decoder using the screws supplied.
2. Fix the Four Channel Encoder/Decoder to the flat surface using either the two locating slots (127mm apart) or the three holes (82.5mm apart) on the surface mounting lugs (screws are not included).
3. Connect the power supply to the unit.

**Notice**

*The Four Channel Encoder/Decoder does not have a power switch. When power is connected, the system is on. To turn the unit off, disconnect the power.*

## Configure network redundancy

Network redundancy must be provided by the network switches connected to the Four Channel Encoder/Decoder. 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 Four Channel Encoder/Decoder are connected.

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

IndigoVision recommends that two of the Four Channel Encoder/Decoder 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 Encoder video 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.