



Single Channel Video Encoder

Setup Guide



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Whilst every attempt is made to ensure these manuals are accurate and current, Dedicated Micros reserve the right to alter or modify the specification of the machine described herein without prejudice.

Single Channel Encoder

Setup Guide

Introduction



The Dedicated Micros DV-IP range has been designed to offer distributed monitoring and recording of multiple inputs. Combining advanced hardware technology with numerous sophisticated viewing applications makes the product range the ideal solution for many applications.

The single channel DV-IP Encoder is designed to offer an interface to the network for a single video source, possibly the remote camera situated in a position that would not allow analogue cabling. In addition the Encoder provides interfaces for audio, alarms and telemetry control, making it a compact version of it's DV-IP Server counterpart.

The Encoder video stream can then be routed across the network to any of the NetVu Connected units for recording (DV-IP Server, Digital Sprite 2, etc.). The camera can be viewed and controlled directly from the unit using either the NetVu ObserVer or the DV-IP Codec in encoder mode.

Incorporating audio into the system allows a live bi-directional audio connection to be made between the Server and a Client application, and the audio stream can be recorded along with the video on the allocated DVR or Server.

The DV-IP Encoder supports MultiMode operation allowing compatibility with the other NetVu Connected products.

MultiMode offers the ability to set different recording and viewing rates, resolutions and compression across scheduled, normal and alarm modes. By varying the quality (bitrate) of the recorded image, users can increase recording capability of the unit.

MultiMode recording offers:

- Ability to set different recording resolutions including 4CIF (704x512), 2CIF (704x256), CIF (352x256) and QCIF (176x128).*
- Ability to set MPEG or JPEG compression recording*
- Ability to set PPS recording rates*
- Dynamically switchable resolution when switching from Normal to Event Recording*
- Dynamically switchable compression between MPEG4/MJPEG from Normal to Event Recording*

The DV-IP Encoder allows MultiMode to be configured to ensure the most appropriate video stream is transmitted across the network for recording. The unit supports on-board pre-alarm storage which will be sent to the DVR / Server to be stored alongside the alarm recording.

Supporting numerous network protocols (IP, TCP, UDP, DHCP, FTP, TELNET, ICMP, HTTP, ARP) the DV-IP Encoder is an ideal choice for a true converged network ensuring compatibility with new and existing network infrastructure and compliments the existing DM NetVu Connected portfolio. All the safety and operating instructions should be read before the unit is operated.

Design of the manual

The manual has two parts:

1. Installation
 - Giving details of how to install the unit and connect external devices.*
2. Setup
 - Giving details of the configuration menus of the unit.*

Important Safeguards

Read Instructions

All the safety and operating instructions should be read before the unit is operated.

Power Sources

This unit should be operated only from the type of power source indicated on the manufacturer's label.

Servicing

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards.

Refer all servicing to qualified service personnel.

Ventilation

Ensure unit is properly ventilated to protect from overheating.

All the safety and operating instructions should be read before the unit is operated.

CE Mark

If this product is marked with the CE symbol it indicates compliance with all applicable directives.

Directive 89/336/EEC.

A 'Declaration of Conformity' is held at Dedicated Micros Ltd., 1200 Daresbury Park, Daresbury, Cheshire, WA4 4HS.



This product is marked with the CE symbol and indicates compliance with all applicable Directives. A "Declaration of Conformity" is held at Dedicated Micros LTD, 1200 Daresbury Park, Daresbury, Cheshire WA4 4HS WWW.dedicatedmicros.com

Hereby, Dedicated Micros LTD, declares that this Analogue to IP Encoder is in compliance with the essential requirements and other relevant provisions of Directive 95/5/EC.

Marking by the symbol CE indicates compliance of this Dedicated Micros product to the Electromagnetic Compatibility Directive 89/336/EEC, and the Low Voltage Directive 73/23/EEC of the European Union. Such marking is indicative that this system meets the following technical standards

- EN 61000-6-3 EMC Standard Residential, Commercial and Light Industry.
- EN 62000-3-3 Limitations of voltage changes, fluctuations and flicker in public low-voltage supply systems for equipment with rated current up to 16A.
- EN 61000-3-2 Limits for harmonic current emissions for equipment with rated current up to 16A.
- EN 50130-4 Immunity requirements for components of fire, intruder and social alarm systems.
- EN 60950 Safety of IT and similar equipment.
- EN 55022 Class A. Radiated Emissions Standard, suitable for Commercial or Residential use

Further details about these applicable standards can be obtained from Dedicated Micros Ltd., 1200 Daresbury Park, Daresbury, Cheshire WA4 4HS

RF Interference warning

This is a class A product. In a domestic environment this product may cause radio frequency interference, in which case the user may be required to take adequate measures.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Use only attachments/accessories specified by the manufacturer.
6. Refer all servicing to authorized service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged

Canadian EMC statement

This product is compliant with Class A ICES-003

Note: *This Class A product meets the requirements of the Canadian Interference causing equipment regulations. Cet appareil numérique de la Classe A, respect toutes les exigences du règlement sur le matériel brouilleur du Canada.*

Components Supplied

Before installing the unit, please remove the components from the packaging and verify that all items listed below have been supplied:

- 2 x fixing brackets
- 4 x M3 x 6mm posi screws for attaching brackets
- 1 x power supply
- 3 x mains leads
- 1 x CD

Please ensure the following are available and have been tested prior to the installation:

- a) Mains point
- b) Network point
- c) Network cable
- d) Desk / Laptop PC with CD ROM drive and connection to the same network as the DV-IP Server

Installing the DV-IP Encoder

The DV-IP Encoder has connectors on both ends of the unit.

SVHS - 75Ω SVHS Y-C composite camera connections, 1V pk-pk

VID IN - 75Ω BNC composite camera connections, 1V pk-pk

VID OUT - 75Ω BNC composite spot monitor connection reserved for displaying on-screen summary of encoder's network settings including IP address

NET - RJ45 10/100BaseT Ethernet connection

POWER - 12V DC Mains powered, separate power supply

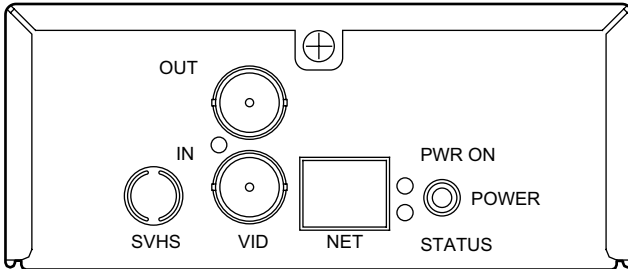
LED's

PWR ON - Green

STATUS - Green

Step 1 Connecting Video

The DV-IP Encoder supports a Video In for an analogue video source, this can be via the 75Ω BNC connector or the S-VHS Y-C connector.



Step 2 Connecting to the Network

The DV-IP Encoder supports a 10/100Mbps auto-detecting network port. Use a properly screened Ethernet cable to connect the unit to the network.

By default the unit is configured for DHCP where the unit is automatically allocated an IP address from the network DHCP server.

DHCP works on assigning an IP address at initial connection to the network, however it is possible for this IP address to change without notification (i.e. if there was a power failure), therefore it is recommended that the DV-IP Encoder is allocated a fixed IP address to remove the possibility of address change.

When a network is configured for DHCP any networked unit connected to that network will automatically be assigned an IP address by the DHCP Server.

Step 3 Serial Connection

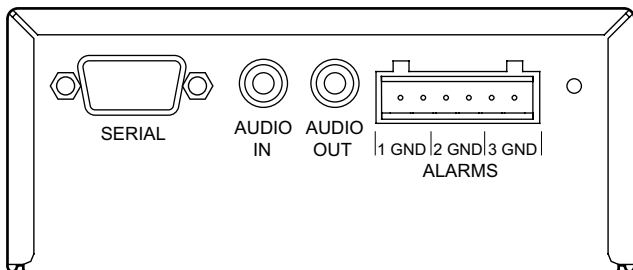
The default configuration for the serial port on the encoder is RS485/RS422.

For connector pin-out information, refer to Appendix A.

An internal link needs to be fitted to modify operation to RS232. For more information on this topic, refer to Appendix B.

Step 4 Alarms - For future development

The unit will support three EOL alarm inputs. This functionality is part of the advanced alarms supported on NetVu Connected products and included features required for Central Monitoring and is compatible with the British Standard BS8418. This functionality is under development and will be available as a software upgrade. The End Of Line (EOL) functionality is part of the Advanced Alarms supported on NetVu Connected products and included features required for Central Monitoring and is compatible with the British Standard BS8418.



SERIAL - 9 way (male) D Type RS-232 (3 wire), RS-422, RS-485 serial port (Telemetry, debug, general purpose, text in image)

AUDIO IN - RCA (phono) socket

AUDIO OUT - RCA (phono) socket

ALARMS - Screw terminal, dry contact relay, NO/NC, user configurable

Step 5 Connecting Audio

The DV-IP Encoder support a single channel of bi-directional audio, accessible through NetVu ObserVer. Connect the audio equipment to the phono sockets **AUDIO IN** and **AUDIO OUT**.

The following modes of operation will be supported:

- Challenge – one way audio, DVR to camera, optionally recorded.
- Listen – one way audio from the camera to DVR, optionally recorded.
- Help Point – two way audio, optionally recorded.

Step 6 Connecting Power

The DV-IP Encoder is supplied with an external power supply. Connect the PSU to the unit and then to the power source.

Note: *The Status LED is for future expansion.*

Configuring the Unit

Locating the Unit IP address

The unit is configured using on the on-board web pages. This can be done remotely once the unit has been installed in position.

The IP address of the unit is required to access these pages. The encoder has DHCP enabled by default to allow a network DHCP server to assign an IP address automatically. The assigned IP address will be displayed on a connected spot monitor. If no monitor is available, it can be found by using the serial port, refer to Appendix B. For ease of configuration, it is recommended that the installer sets the IP address before installing the unit in position.

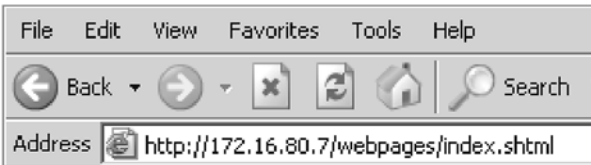
One of the first tasks should be to disable DHCP and assign a permanent IP address to the unit. If this is not done, the IP address of the unit may change whenever it is powered off or reset, and the new address will have to be acquired directly from the unit (ie using a serial connection or by connecting a spot monitor and cycling the power).

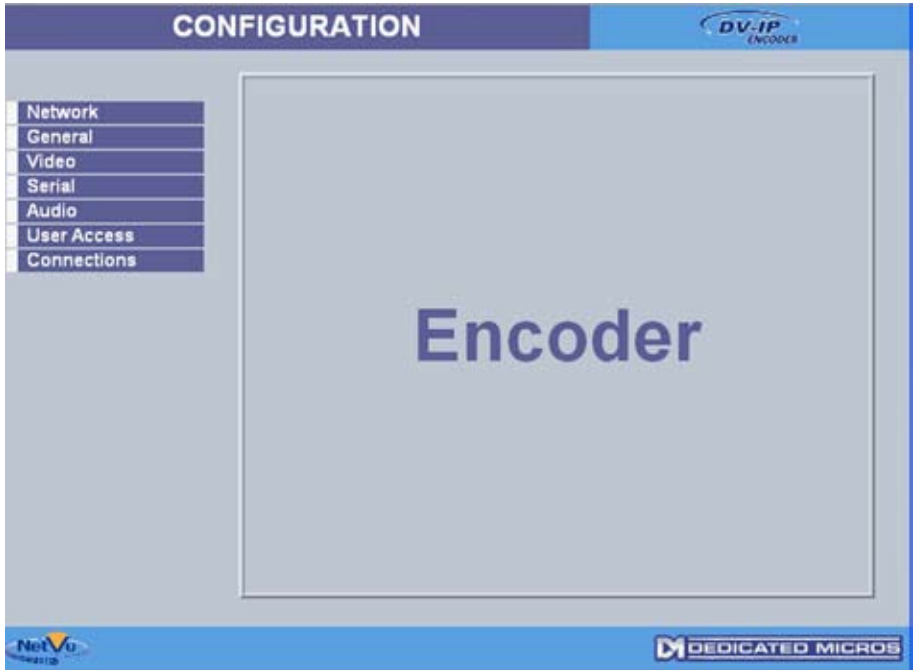
If a permanent IP address is not assigned to the unit, it will attempt to contact the DHCP server every time it starts up. If for any reason, a DHCP server cannot allocate an IP address to the unit, the encoder will use a default IP address (169.254.4.10).

Accessing the Configuration Web Pages

The unit is configured using on the on-board web pages. To access these:

1. Launch Internet Explorer (or Netscape Navigator).
2. Type the IP address of the unit into the address bar.
3. The Main Menu page will be displayed.





The configuration menus are accessible using the links on the left hand side of the page.

NOTE: Any changes made on the web pages are automatically saved when the page is closed. Use the 'Cancel' button to revert to the previous settings and then navigate away.

Network

This page allows access to the network settings of the unit.

Network				
IP Address	172	17	88	10
Subnet	255	255	0	0
Gateway	172	17	50	1
Primary DNS:	0	0	0	0
Secondary DNS:	0	0	0	0
DHCP IP:	0.0.0.0			
DHCP Subnet:	0.0.0.0			
DHCP Gateway:	0.0.0.0			
DHCP Name:				

IP Address, Subnet, Gateway	These are the settings that have already been configured using the Serial port configuration. This is the static IP address and subnet mask, and if applicable default gateway
Primary DNS	This is the primary DNS server IP address for applications that are utilising domain names
Secondary DNS	This is the IP address of the secondary DNS server in case of failure of the primary server
DHCP IP	If the unit was installed on a DHCP network this would be the IP address the DHCP server allocated on power up of the unit
DHCP Subnet	If the unit was installed on a DHCP network this would be the subnet of the network the unit is connected and would be automatically allocated by the DHCP server on power up
DHCP Gateway	This is the IP address of the default gateway (router) that the unit would be automatically assigned to by the DHCP server
DHCP Name	This would be the name of the unit that is automatically allocated by the DHCP server
Serial Number	This is the serial number of the unit, this is a read only section
Reset	Will reboot the unit to allow the new settings to be enabled
Cancel	Settings are automatically saved when the page is closed. Use this button to cancel any changes before navigating away from the page.

Note: *The unit will need resetting to implement any changes made to this page. The unit can be reset using the 'Restart' button onscreen.*

General

This page shows the general information about the unit, including the version of software installed and the adopted video standard.



Video Standard	This is a global setting for all the video inputs on the unit. The video format will be configured as PAL or NTSC, depending on the locality. It cannot be changed.
System Resolution	This is the fundamental resolution for the unit.
System Name	This is the name allocated to the unit. It will be required when connecting to an Event Distribution Point for alarm monitoring using NetVu Observer.
Camera Name	This will be used by the DVR for display on menus / on screen
Language	Specifies the web page language
Factory Reset	Will set the unit back to the Factory Defaults
Reset	Will restart the machine with the new settings applied
Cancel	Settings are automatically saved when the page is closed. Use this button to cancel any changes before navigating away from the page.

All other parameters on this page may be needed should Technical Support be required.

Note: The unit will need resetting to implement any changes made to this page. The unit can be reset using the 'Reset' button onscreen.

Video

This page allows configuration of the video settings for network viewing.

Resolution alias	Resolution	Size (KB)
JPEG High	704x288	20
JPEG Medium	704x288	10
JPEG Low	704x288	5

	Resolution	Bitrate (Kb/sec)	Quality	Frame Rate (pps)	I-frame Interval (Sec)
MPEG High	704x288	1024	CBR	25	1
MPEG Medium	704x288	512	CBR	12	18.75
MPEG Low	704x288	256	CBR	6	33.333

The unit supports both JPEG and MPEG-4 compression for high quality image display.

The JPEG image size has two configurable parameters, File Size and Image Resolution.

The file size setting can be configured between 5 to 45 KB. This determines the size of the images transmitted across the network. The image resolution setting has been included to allow the most appropriate image resolution to be configured in line with the selected file size. The image resolution is the number of pixels captured in each image.

Resolution Alias	This describes which of the alias High, Medium and Low viewing settings are being configured, for either JPEG or MPEG.
Resolution	There are four pre-configured resolutions to select from. These correspond to the standard CIF format. You can select from 704x576 (704x480), 704x288 (704x240), 352x288 (352x240), 176x144 (176x120) pixels. PAL (NTSC)
Size (KB)	This is the image size for the JPEG alias being configured. A larger file size will give more information per frame.

TIP: The resolution and size settings should be tested to ensure the most appropriate recordings are produced which fit the customer and storage requirements for the system.

Bitrate	The bitrate dictates how much information is sent in each second of MPEG video. Higher bitrate will generally result in a better quality image, but will take more network capacity. This option will only be available if 'Quality' is set to CBR (Constant Bit Rate)
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Quality T	here are 30 variable bitrate quality settings available (10 Low, 10 Medium and 10 High), and one Constant Bit Rate (CBR) option.
Framerate (pps)	This dictates the number of pictures per second this profile will send to the viewer
I-Frame Interval(Sec)	MPEG-4 compression uses I and P frames, the I frame is a full frame image from the video source, this option allows the Administrator to determine how often the I frame will be recorded within the selected profile.
Cancel	Settings are automatically saved when the page is closed. Use this button to cancel any changes before navigating away from the page.

Serial

This page allows configuration of the Serial port on the rear of the unit. It can be programmed to operate with telemetry.

CONFIGURATION DV-IP ENCODER

Serial

Serial Port Usage: RS232/485 Telemetry Baud Rate: 9600

Telemetry Protocol: Dennard Parity: None

Data Bits: 8

Stop Bits: 1

Flow Control: None

NOTE: Any changes will only take effect after system is reset.

Cancel

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- | | |
|---|---|
| Serial Port Usage | The unit supports a number of RS485 serial protocols. This option allows one of these to be selected from the list. When used as a DM dome IP Power Supply, the Dennard protocol must be selected.. |
| Telemetry Protocol | The Encoder will accept either Dennard or DM-Serial protocols |
| Baud Rate, Parity, Data Bits
Stop Bits, Flow Control | This allows the communication settings to be configured. |
| Cancel | Settings are automatically saved when the page is closed. Use this button to cancel any changes before navigating away from the page. |

Note: When a telemetry protocol is selected these settings will be set to the default to pre-determined values for the protocol, and should not normally be altered manually.

Note: Any changes to this page will require the unit to be reset. Use the reset button on the Network Page.

Note: The telemetry receiver in the dome should be set to address number 1. For Dennard domes this means that the blue switch should be set to 0 and the yellow switch to 1

Audio

The settings for any available audio stream can be edited on this page.



Sample Rate

The sample rate related to the quality of the audio being processed. A higher figure will require more bandwidth to transmit. It is selectable between 8000 Hz (voice mail quality or 8 bit mono), 11025 Hz, 16000 Hz and 22050 Hz (half CD quality or 16 bit mono).

AGC

The Automatic Gain Control will lower an excessive volume

Volume

Adjustable level between 0 and 64

Cancel

Settings are automatically saved when the page is closed. Use this button to cancel any changes before navigating away from the page.

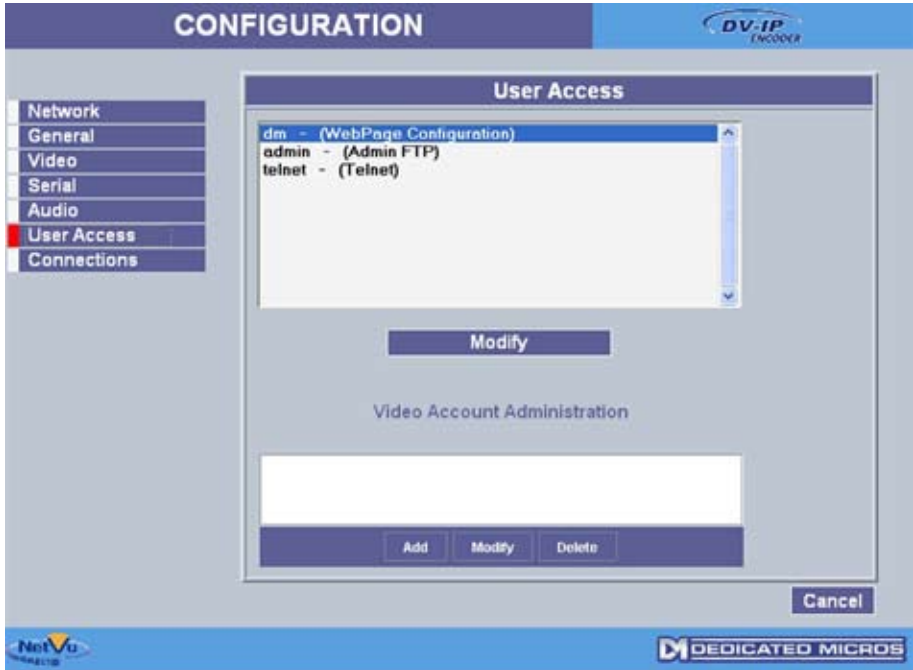
User Accounts

The unit can protect access to the configuration options by setting passwords. These can be set individually for Webpage configuration, FTP administration and Telnet access.

The image shows the User Accounts Administration page. The default passwords are:

Webpage Configuration :	Username = dm :	password = web
FTP Admin :	Username = dmftp :	password = ftp
Telnet :	Username = dm:	password = telnet

This page also controls the Video Account Administration, used for controlling which users have access to the video stream from the Encoder.



- | | |
|-----------------------------|--|
| User Account Administration | Within this section the system accounts that have been pre-configured using the .ini files will be displayed. This allows the username and password of these accounts to be easily modified. |
| Modify | It is possible to modify the data for any user account being viewed. This allows the username, password and camera access to be edited. |
| Cancel | Settings are automatically saved when the page is closed. Use this button to cancel any changes before navigating away from the page. |

Note: Please ensure all configured Usernames and Passwords are retained as loss of this information may result in the unit being returned to Dedicated Micros.

Video Accounts

The video account for viewing must be added to the encoder by an administrator (someone with access to the encoder's web pages).

Once an account and password are set up on the encoder, the account details will be requested via a pop up window in ObserVer when it tries to connect to the stream.

Ensure that the version of DVR software being used supports accounts for IP cameras and an account is set up on the DVR. If IP cameras are not supported, or there is no appropriate account, the images from the encoder will not be available to the DVR.

User can be given permission to view the video available from this Encoder using this menu. Click Add to enable a new user, providing the name and assigned password for the user. Once this is saved, the account will appear in the lower pane.

If no video accounts are set up, the video is available to anyone over the network.

Accounts can then be edited or deleted as required.

Connections

This page shows the IP addresses of machines currently connected to the encoder via the network.

IP Addresses

This displays a list of up to 4 IP addresses that are connected to the encoder.

The screenshot shows a web-based configuration interface for a DV-IP Encoder. The main title is "CONFIGURATION" in a blue header. On the left is a navigation menu with options: Network, General, Video, Serial, Audio, User Access, and Connections (which is highlighted with a red bar). The main content area is titled "Connections" and contains a table of IP addresses. The table has two columns for IP addresses and two columns for their corresponding IDs (1, 2, 3, 4). The IP addresses shown are 172.17.88.1, 0.0.0.0, 0.0.0.0, and 0.0.0.0. At the bottom of the interface, there are logos for "NetVu" and "DEDICATED MICROS".

Connections			
IP Addresses			
1	172.17.88.1	3	0.0.0.0
2	0.0.0.0	4	0.0.0.0

Connecting to the Encoder

Using the DVR

The camera connected to a DV-IP encoder can be connected to and viewed across a network using a NetVu capable DVR or server, NetVu Observer or a DV-IP encoder.

To enable a NetVu capable DVR to connect to IP cameras;

1. Verify the Version of operating software on the DVR by pressing the menu button once to display the 'Time, Date & Language' page. If the Version is below xxxxxxxx, use the enclosed CD to upgrade the system to accept IP camera streams.

Using the OSD

In order to setup an IP Camera using the On Screen Display menus;

1. On the Camera Setup page, the 'Camera Type' parameter will now have an option called 'IP Cam'.
2. Select 'Edit' to set up the DV-IP encoder. Use the parameters listed below.
 - Type - NetVu Server
 - URL - <DV-IP encoder IP address>
 - Port - 0080
 - Camera Number - Refer to Note below
 - FPS - 04

Using the unit webpages

To set up an IP Camera using the DVR on board webpages;

1. Open your web browser and type the IP address of the DVR into the address line. Select 'Configuration Options' and log in using the web username and password (defaults username-dm, password-web).
2. Select 'Cameras' on the side bar. There is a new page called 'IP-Camera and Record Setup'. Select this page.

Add the DV-IP encoder information to a free position in the camera table. Use the parameters listed below.

 - Camera type - IP
 - IP Cam type - NetVu Server
 - IP Cam URL - <Enter the IP address of the DV-IP encoder>
 - IP Cam port - 80
 - IP Cam Cam - Refer to note below
 - IP Cam FPS - 4

It is possible to treat the digital video feeds from other networked Dedicated Micros DVR's as IP cameras.

To set up Digital Streams from NetVu capable DVR's as IP cameras;

1. Ensure the DVR has IP Camera capability enabled.

On the OSD

In order to setup a DVR video feed as an IP feed using the On Screen Display menus;

1. On the Camera Setup page, the 'Camera Type' parameter will now have an option called 'IP Cam'.
2. Select 'Edit' to set up the DV-IP encoder. Use the parameters listed below.
 - Type - NetVu Server
 - URL - <Source DVR IP address>

Port - 0080

Camera Number - Number of the camera feed on the source DVR to be used

FPS - 04

On the web pages

In order to setup a DVR video feed as an IP feed using the onboard web pages;

1. Open your web browser and type the IP address of the DVR into the address line. Select 'Configuration Options' and log in using the web username and password (defaults username-dm, password-web).
2. Select 'Cameras' on the side bar. There is a new page called 'IP-Camera and Record Setup'. Select this page.
3. Add the DV-IP encoder information to a free position in the camera table. Use the parameters listed below.
 - Camera type - IP
 - IP Cam type - NetVu Server
 - IP Cam URL - <Source DVR IP address>
 - IP Cam port - 80
 - IP Cam Cam - Number of the camera feed on the source DVR to be used
 - IP Cam FPS - 4

This will import the video feed from the other DVR into this camera position.

Using NetVu Observer

The DV-IP encoder produces a digital video stream from an independent IP address. NetVu ObserVer can connect directly to this video stream in the same way as it connects to a DVR. However, the camera needs to be within the same subnet as ObserVer.

A DV-IP encoder can be added to ObserVer to allow the Operator to easily select the camera for viewing and control:

1. Highlight the Stored Image Servers Folder, or if a sub-folder (a folder within a folder) is required highlight the top level folder.
2. Click the right mouse button and select the Add Image Server option.
3. Enter the IP address of the DV-IP encoder. Enter a suitable name to identify the camera in the Site list.
4. Click OK to enter these parameters. A shortcut to the camera will be displayed in the Site List. A PTZ camera will be controllable using NetVu ObserVer.
Alternatively, the IP address of the encoder can be entered into the dialog box on the bottom of the Image Server Tree pane. This will create a temporary connection to the camera. This can be made permanent by dragging the Entry into the Stored Image Servers folder.

These basic instructions will display the camera for viewing and control. For more information on the options available, refer to the NetVu ObserVer documentation.

Note: *Encoders with protected video accounts will request username and password when NetVu ObserVer connects to the stream.*

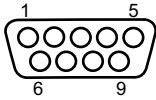
The Encoder converts an analogue camera signal into a digital stream that can be read across a network. By using a decoder, it is possible to convert this video stream back to an analogue signal, allowing the images to be viewed on an analogue monitor, or used by a traditional matrix CCTV system. Dedicated Micros manufacture a suitable decoder.

Setting up the link is fully described in the decoder documentation.

Appendix A

Using Serial Ports

It is possible to connect a variety of telemetry cameras to the unit, using the following table as a guide to the serial port connections.



RS485 Connectivity

Pin	Description
1	RS485 + (A)
9	RS485 - (B)

RS232 Connectivity

Pin	Description	Desc
1	Data Carrier Detect	DCD
2	Receive Data	RX
3	Transmit Data	TX
4	Data Terminal Ready	DTR
5	Ground	GND
6	Data Set Ready	DSR
7	Ready to Send	RTS
8	Clear to Send	CTS
9	Ring Indicate	RI

RS422 Connectivity

Pin	Description	
1	Transmit Data	TX+ (A)
4	Receive Data	RX-
6	Receive Data	RX+
9	Transmit Data	TX- (B)

Appendix B

Locating the unit IP address using the serial port

Note: <ENTER> denotes pressing the Enter key on the keyboard.

1. With mains power switched off, unscrew the four mounting screws that attach the DV-IP Encoder to the PSU chassis. Then remove the two screws that attach each mounting bracket to the encoder. Finally remove the four screws attaching the encoder's lid to the base. Fit link J1 to enable the serial port to work as an RS232 configuration port rather than as a telemetry port.
2. With the mains power off, connect a standard 9DF-9DF RS232 communications cable from the PC to the serial port of the unit. Switch the power on at the mains outlet, the Power LED on the DV-IP encoder will illuminate.
3. On the PC, click Start->Programs->Accessories->Communications->Hyperterminal and create a new connection via the COM port using these settings.

Bits per second	38400
Data Bits	8
Parity	None
Stop bits	1
Flow Control	None
4. Power the Encoder.
5. Hyperterminal will display the communications information as the unit boots up. This will include the IP address, Subnet and Gateway.

Assigning a permanent IP address using the serial port

The unit will assign and display an IP address when it boots. The address can be seen using the terminal connected to the serial port of the unit, as it boots up or by typing

```
ipcfg <ENTER>
```

To change the IP address of the unit;

Type "setip" followed by the new IP address

eg to change the unit to a fixed IP address of 192.168.200.19

```
setip 192.168.200.19 <enter>
```

The commands "setsub" and "setgw" can be used to alter the subnet mask and gateway address for the encoder

Note: *Setting an IP address in this way will disable the DHCP functionality. When a network is configured for DHCP any networked unit connected to that network will automatically be assigned an IP address by the DHCP Server. This IP address will be visible in Hyperterminal, via a serial connection, as the unit boots up.*

NOTE: *Remember to replace the J1 jumper to the original position before reassembling the Encoder.*

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Dedicated Micros Ltd.
1200 Daresbury Park, Daresbury,
Cheshire, WA4 4HS, UK

Dedicated Micros Europe
Neckarstraße 15,
41836 Hückelhoven, Germany

Dedicated Micros France
9-13 rue du Moulinet
75013 Paris, France

Dedicated Micros Slovenia
Delavska cesta 26,
4208 Sencure, Slovenia

Dedicated Micros Benelux
Joseph Chantraineplantsoen 1,
3070 Kortenberg, Belgium

Dedicated Micros USA.
14434 Albemarle Point Place, Suite 100,
Chantilly, Virginia 20151 USA

Dedicated Micros USA.
23456 Hawthorne Blvd.
Suite 100, Torrance,
CA 90505, USA

Dedicated Micros, Australia PTY.
5/3 Packard Avenue, Castle Hill,
NSW 2154, Australia

Dedicated Micros, Asia PTY
16 New Industrial Road,
#03-03 Hudson Techno Centre,
Singapore 536204

Dedicated Micros Middle East
Building 12, Suite 302, P.O. Box 500291, Dubai Internet
City, Dubai, United Arab Emirates

Dedicated Micros (Malta) Ltd.
BLB017, Bulebel Industrial Estate,
Zejtun, ZTN08, Malta

Installed by

