

Video Bridge

Model NVS100

Network Video Server

&

Converts Analogue Cameras to IP



Version 8

Last Revised: 30/11/2010

INDEX

1. INTRODUCTION.....	3
1.1 FUNCTIONS AND FEATURES	3
1.2 COMMON APPLICATIONS.....	4
2. INSTALLATION.....	5
2.1 HARDWARE INSTALLATION	5
2.1.1 Installation steps	5
2.1.2 Installation notice.....	5
2.2 PRODUCT DESCRIPTION	5
2.3.1 PIN definition of RS485 serial interface.....	6
2.3.2 PIN definition of Ethernet interface.....	6
3. VIDEO SERVER SETUP	8
3.1 SADP PROGRAM.....	8
3.2 USING CLIENT SOFTWARE TO AMEND VIDEO SERVER IP SETTINGS.....	19
4. UPGRADE FIRMWARE.....	22
4.1 USE CLIENT SOFTWARE TO UPGRADE FIRMWARE	22
5. FREQUENTLY ASKED QUESTIONS	24
APPENDIX A SPECIFICATIONS	25
APPENDIX B COMPONENTS LIST	26

1. Introduction

The video server uses an embedded Linux operation system (RTOS) and TI DaVinci processor that is completely independent of PC platform. The firmware is burnt onto a flash drive, making the system exceptionally reliable.

The unit is shipped with a default IP address of 192.0.0.64

The unit is a one channel network digital video server. It can also be used as an IP module. As an IP module, it can be integrated into camera or speed dome to build IP camera or IP dome. Customisation of IP module is available. It can compress the video and audio signal simultaneously into an H.264 compression stream and transmit the compression stream through a network. It also supports real-time video and audio preview, IE browser and bi-directional voice talk, etc.

Notes:

1 channel video input and 1 channel audio input. It can support 4CIF resolution real time (25FPS for PAL or 30FPS for NTSC).

1.1 Functions and features

Basic Functions

High speed & high compression ratio of H.264 video hardware real-time compression.

Multiple security level leads to higher system safety.

Support one RS-485 interface that can be used for controlling pan-tilt-zoom and translucent channel input.

Compression Functions

Supports 1 channel video (PAL/NTSC) signal that can be real-time hardware compressed at 25F/S (PAL) or 30F/S (NTSC) in CIF resolutions. Video is compressed in H.264 standard, and it **supports not only variable bit rate but also variable frame rate**. When choosing video image quality, you can also limit the bit rate of the compression code.

Supports changeable OSD position, date and time can be added automatically.

Supports LOGO, the position is changeable in the video image.

Network Function

Supports one 10M/100M Ethernet compatible interface.

Supports TCP/IP protocols; supports video, audio, alarm, voice data, serial device data

transmission through TCP/IP network; built-in WEB browser and IE access.

Supports pan-tilt-zoom control such as movement, iris and focus.

Supports remote upgrading and maintenance.

RS-485 interfaces supports transparent transmission mode and remote hosts can control serial devices through it.

SPECIAL NOTE: The Video Bridge uses the CCTVWindow software, which supports a variety of hardware applications. This software displays options such as PPPoE that are not available on the Video Bridge. Support can only be provided for options detailed in this manual.

1.2 Common applications

Network digital surveillance, such as ATM machine, factory and the bank etc.

Remote monitoring service for prisons, nurseries and schools.

Intelligent gate system (dynamically record people in and out).

Outdoor equipment monitoring.

Bridge, tunnel and cross roads monitoring systems.

Pipeline and warehouse monitoring.

24 hour monitoring of traffic.

Remote monitoring of forests, lakes and rivers etc.

2. Installation

2.1 Hardware installation

2.1.1 Installation steps

Connect cables needed (video input cable, audio signal input cable, RS485 cable and cable for LAN);

Connect power supply and power on.

2.1.2 Installation notice

Always install in a dry environment with low humidity.

Only install horizontally.

Do not subject this equipment to vibration.

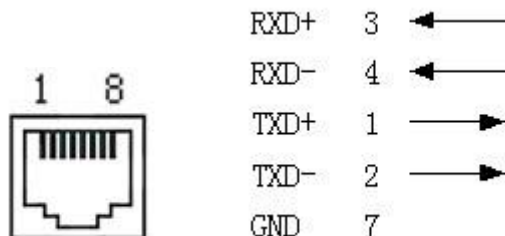
Ensure that the correct power supply is used with this equipment.

2.2 Product Description



2.3 Pin Connections

2.3.1 PIN definition of RS485 serial interface

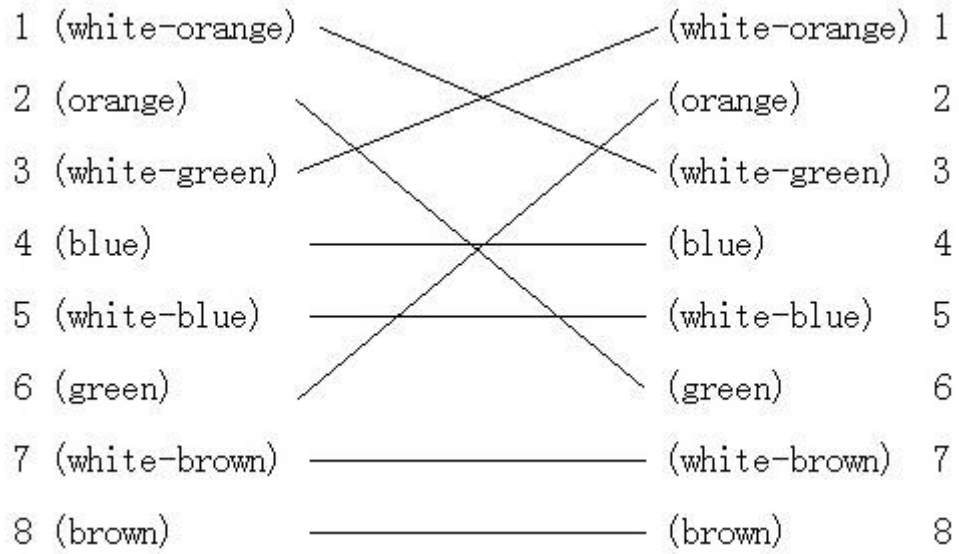


2.3.2 PIN definition of Ethernet interface

(1) PIN definition of LAN or patch cable connecting NVS and HUB:

1 (white-orange)	—————	(white-orange)	1
2 (Orange)	—————	(Orange)	2
3 (white-green)	—————	(white-green)	3
4 (blue)	—————	(blue)	4
5 (white-blue)	—————	(white-blue)	5
6 (green)	—————	(green)	6
7 (white-brown)	—————	(white-brown)	7
8 (brown)	—————	(brown)	8

(2) PIN definition of crossover cable connecting NVS and host PC:



3. Video Server Setup

There are two methods to configure the parameters :

1. Use the SADP program
2. Through Client-end application software supplied
(connect NVS with PC through network)

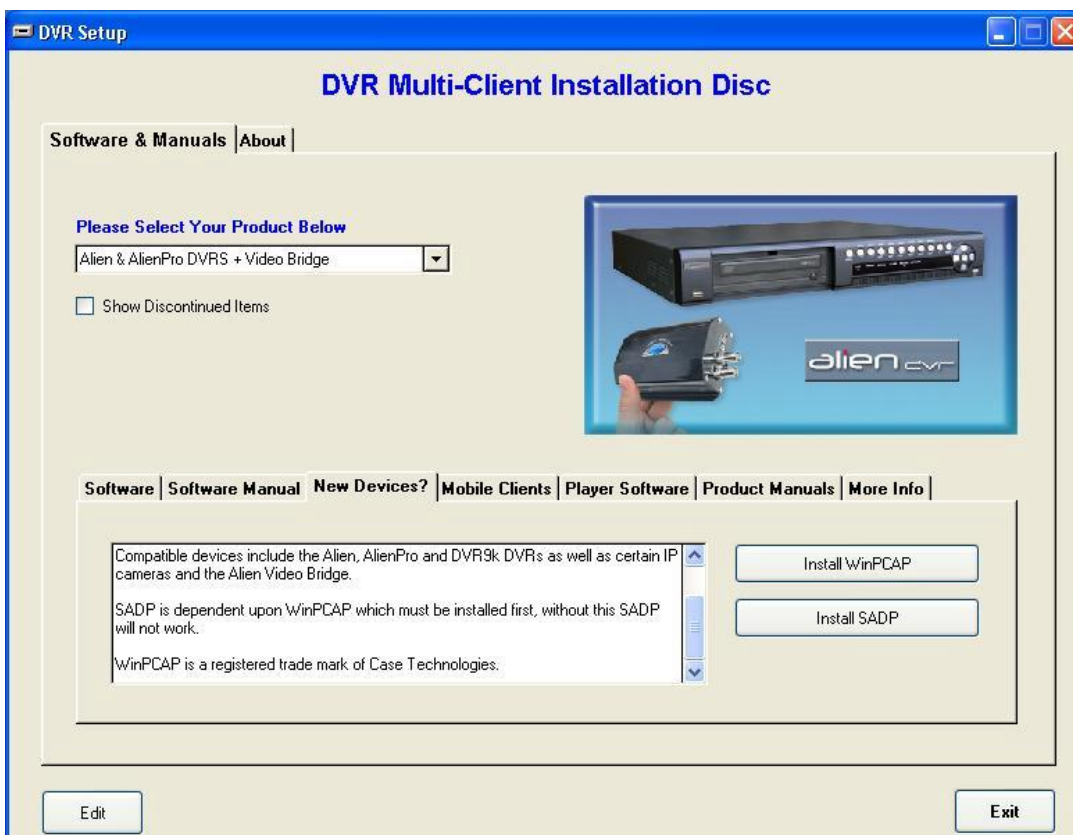
The default IP address of the video server is **192.0.0.64**.

3.1 SADP Program

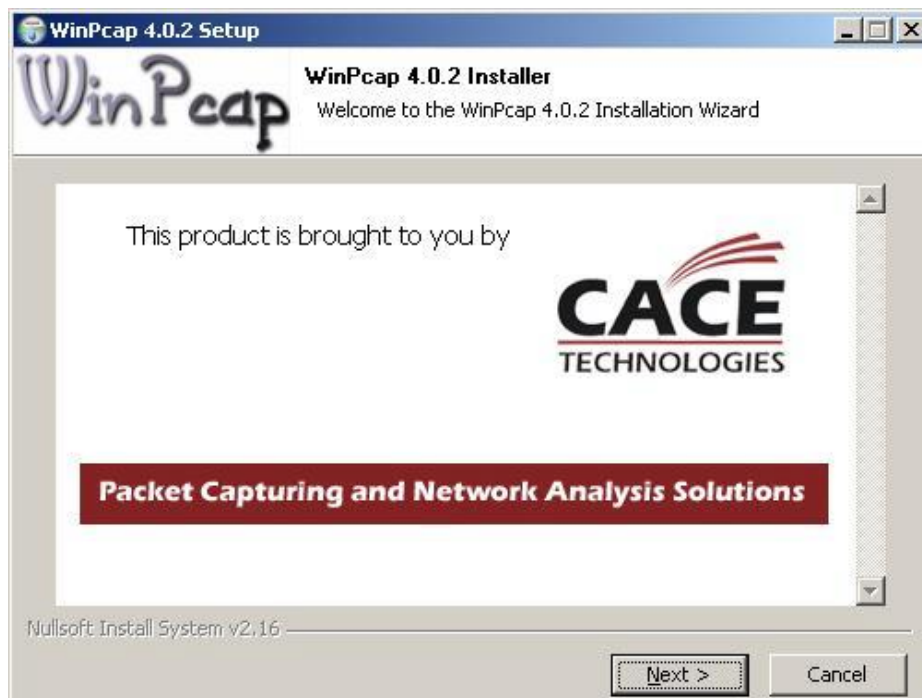
The easiest method to install the Video Server in the network is to use the SADP (Scoped Address Discovery Protocol) program as this can automatically detect the server regardless of the IP address settings, as it does not use TCP/IP. The SADP program needs a program called WinPCAP to be loaded prior to use and both the programs must be loaded from the CD installation disk supplied.

Note that SADP can only be used on a local network.

3.1.1 Click on InstallWinPCAP



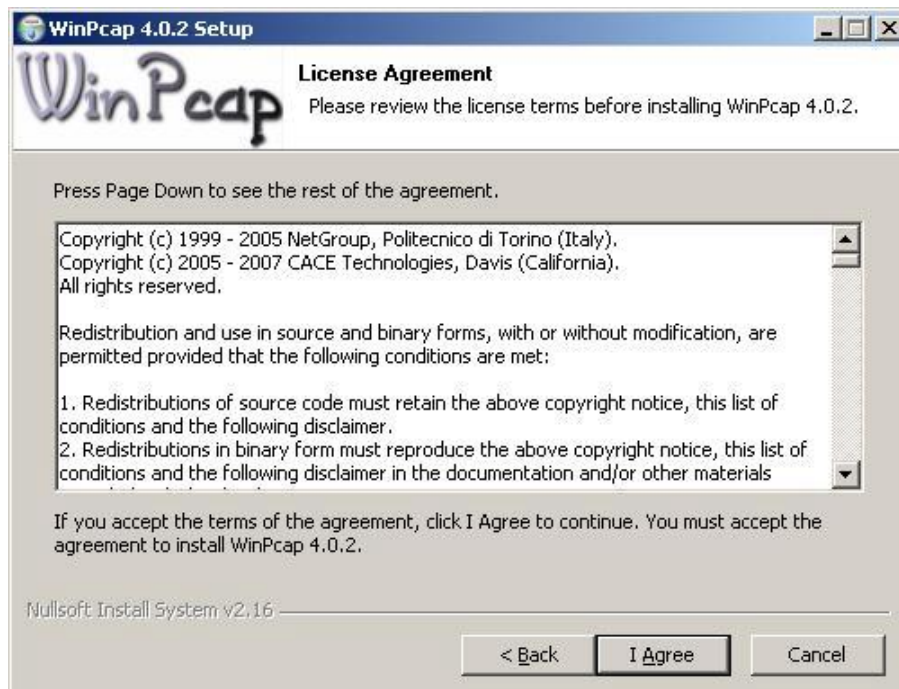
3.1.2 Click on Next >



3.1.3 Click on Next >



3.1.4 Click on I Agree after reading License Agreement



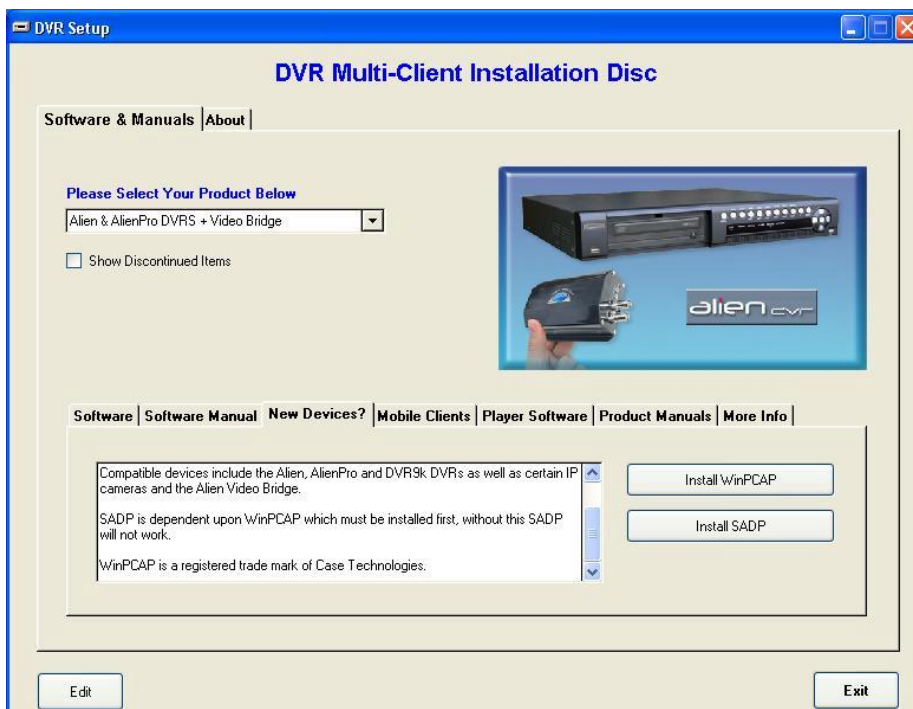
3.1.5 Wait while WinPcap installs.



3.1.6 Click on Finish to complete WinPcap install.



3.1.7 SADP can now be installed. Click on Install SADP



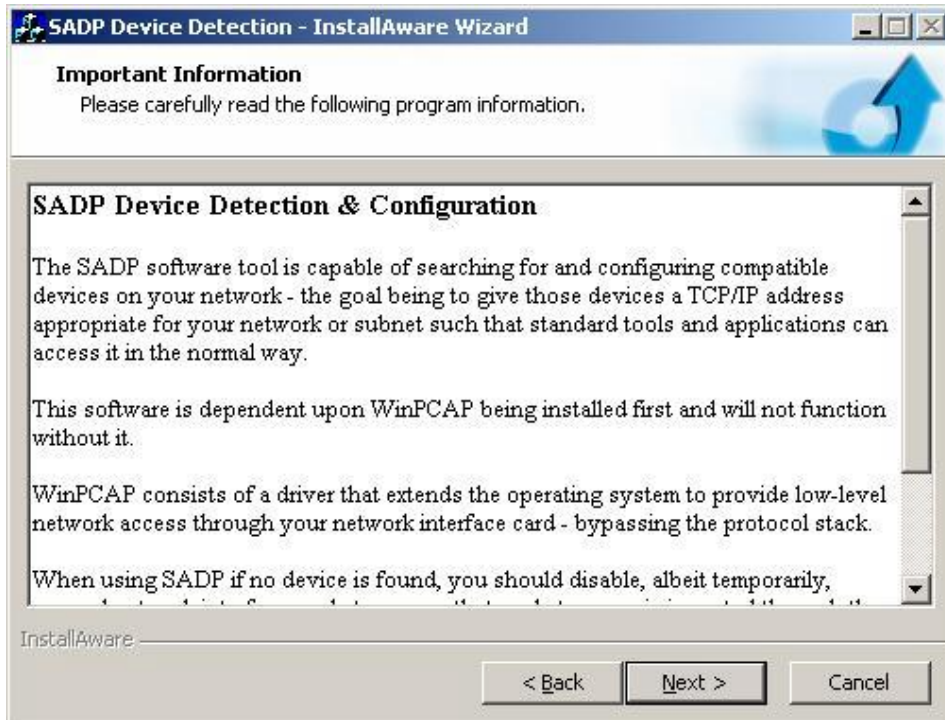
3.1.8 Click on Next >



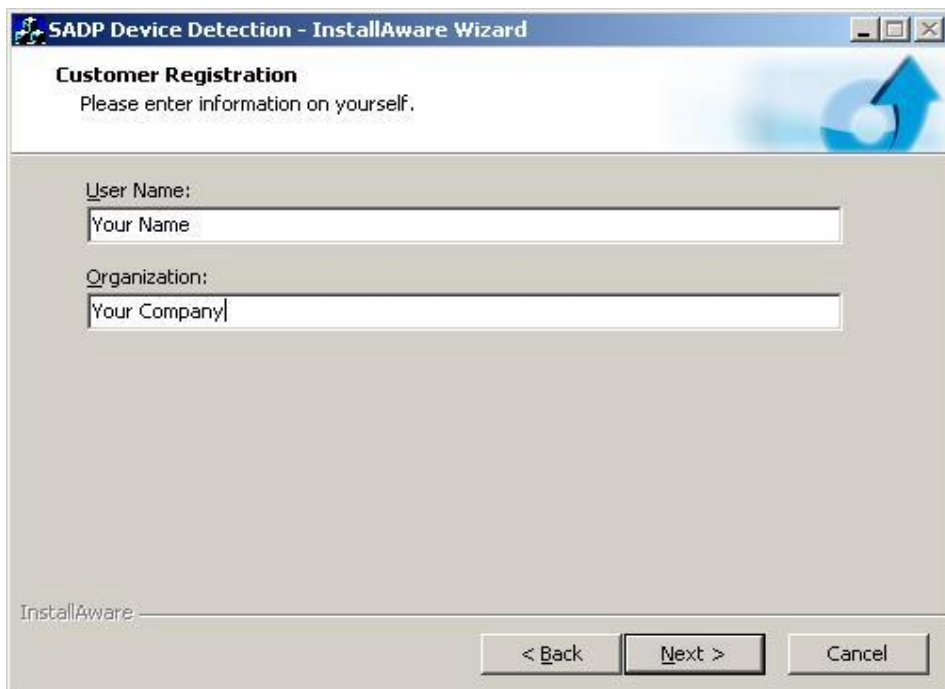
3.1.9 Click on Next >



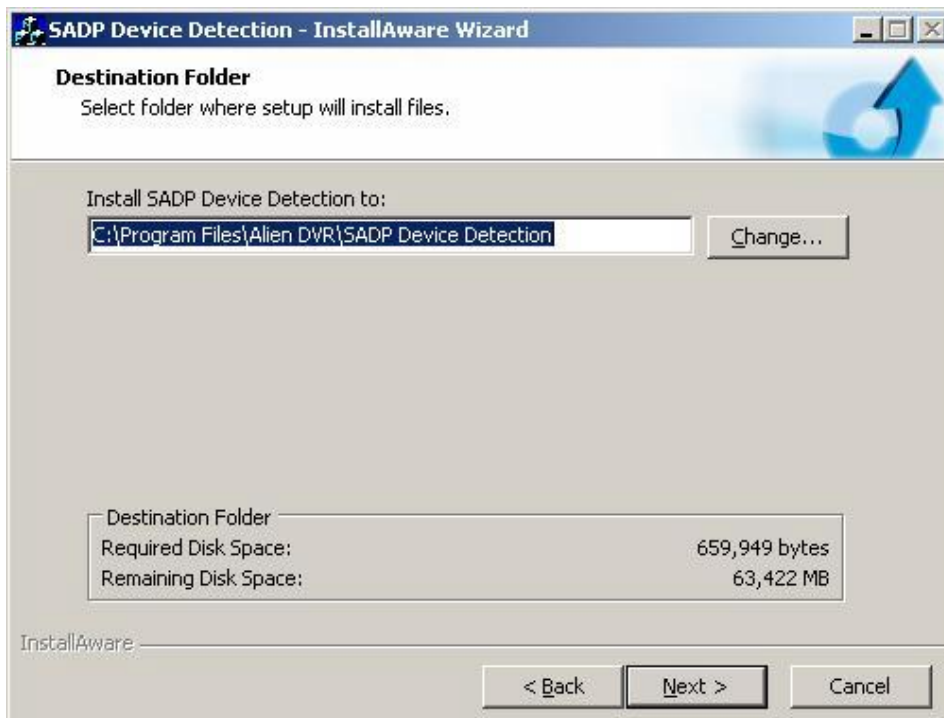
3.1.10 Click on Next >



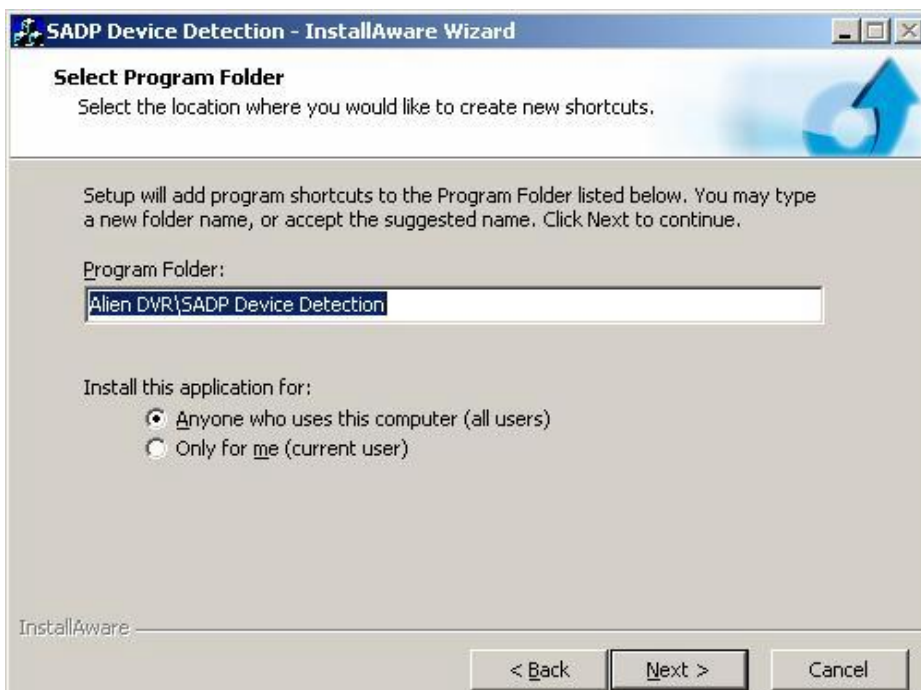
3.1.11 Enter Name and Company and click on Next >



3.1.12 Click Next > or detail folder required



3.1.13 Check the required “Install this application for” box



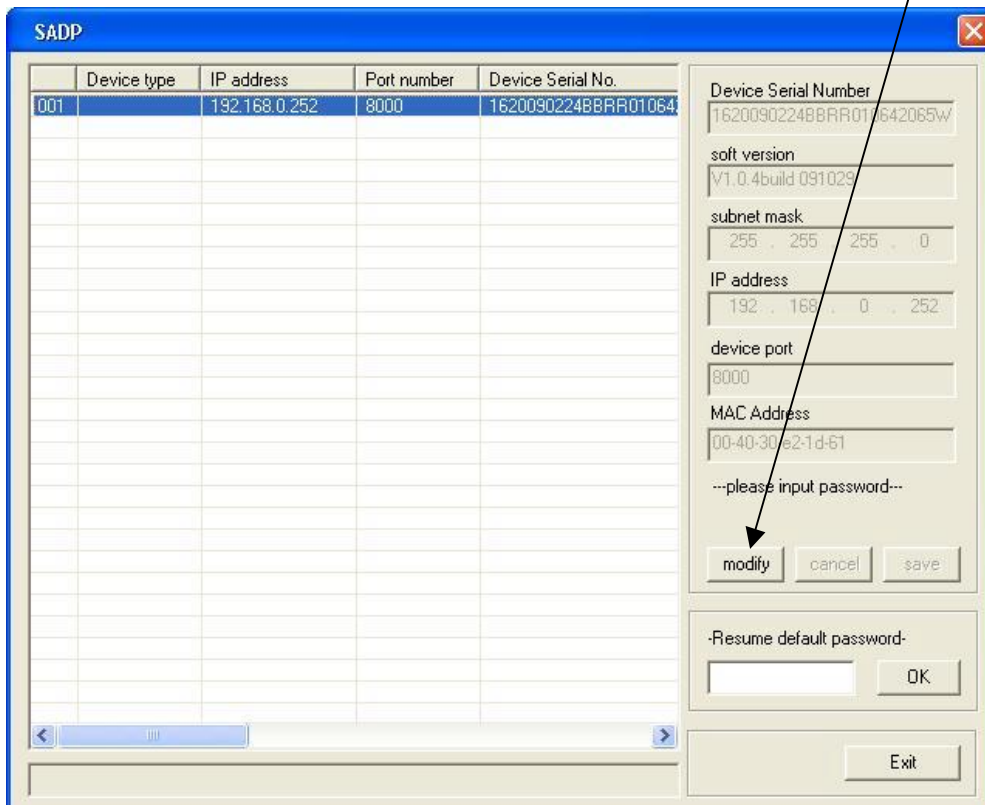
3.1.14 Click on Next >



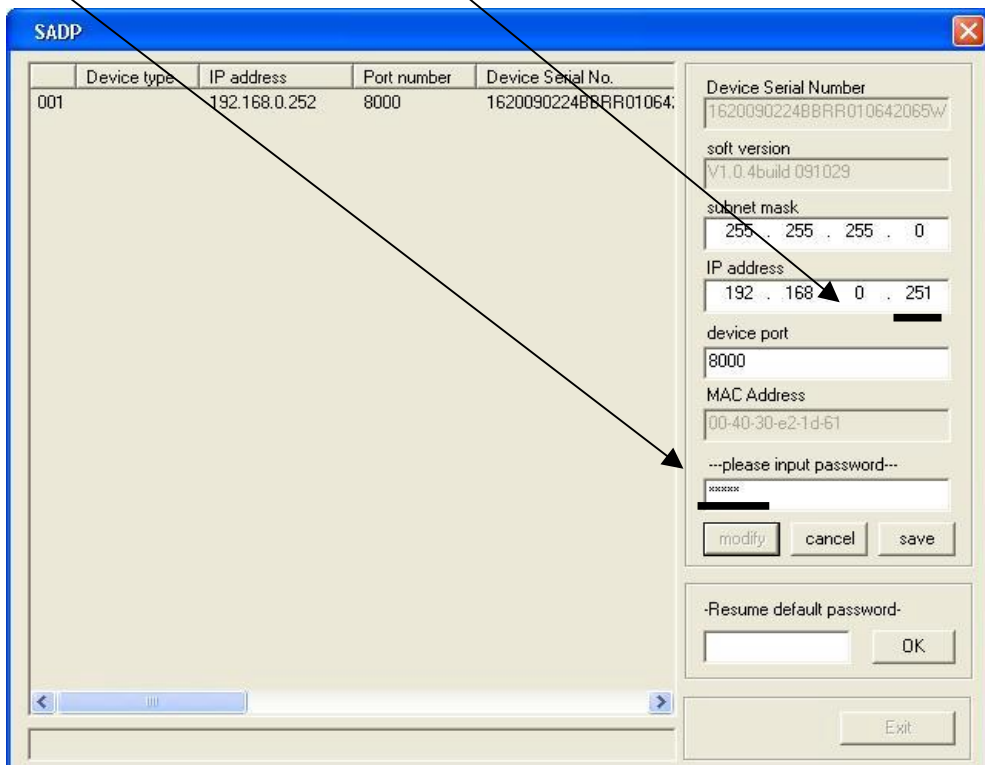
3.1.15 Click on Finish



3.1.18 The device details will be populated for editing. Click on modify.



3.1.19 Edit the required IP address details ensuring the correct admin password (12345 default) is entered.



NOTE: If the admin password is incorrect the remote configuration will fail.

3.1.20 Running the SADP Program if previously installed

After connecting the network cables from the Video Server go to the PC desktop and double left click the SADP program icon. Then follow the above instructions from 3.1.16.

3.1.21 SADP program problems

There may be instances when SADP fails and no results are produced. This can occur if multi-network cards are installed in a PC and SADP does not select the correct network card. This can happen if a wire-free network card is installed. It is therefore recommended to check the LAN settings page on the PC and disable all other network cards until the Video Server network is installed. If this does not overcome the problem, then the second option is to use the Client software supplied on the installation disk.

NOTE: SADP ONLY WORKS ON A LOCAL NETWORK

3.2 Using Client software to amend Video Server IP settings

If you decide to use the Client software to amend the IP address settings, it will be necessary to connect to the 192.0.0.64 IP address in the Video Server. To do this the network must be changed to see this IP address. You will need to change your PC's IP address and subnet mask as suggested below.

3.2.1 Steps to follow

3.2.1.1 Suggested PC settings for connecting to NVS:-

Change or insert the suggested IP settings in the PC for connecting to NVS:-

Example IP Address	192.0.0.100
Subnet Mask	255.255.255.000
Gateway	(not used)

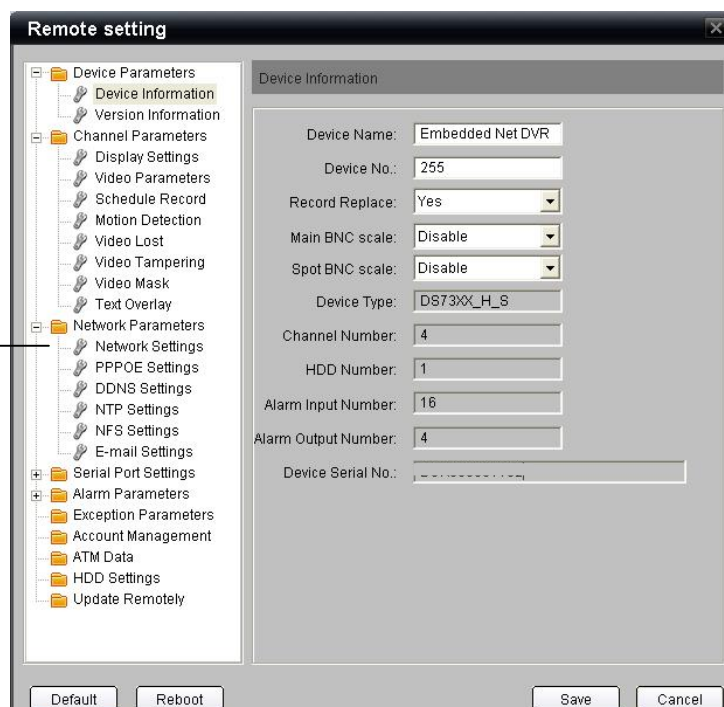
3.2.1.2 Connect a crossover cable between the PC and the Video Server.

3.2.1.3 You should now be able to ping the Video Server by entering **ping 192.0.0.64** using the command prompt.

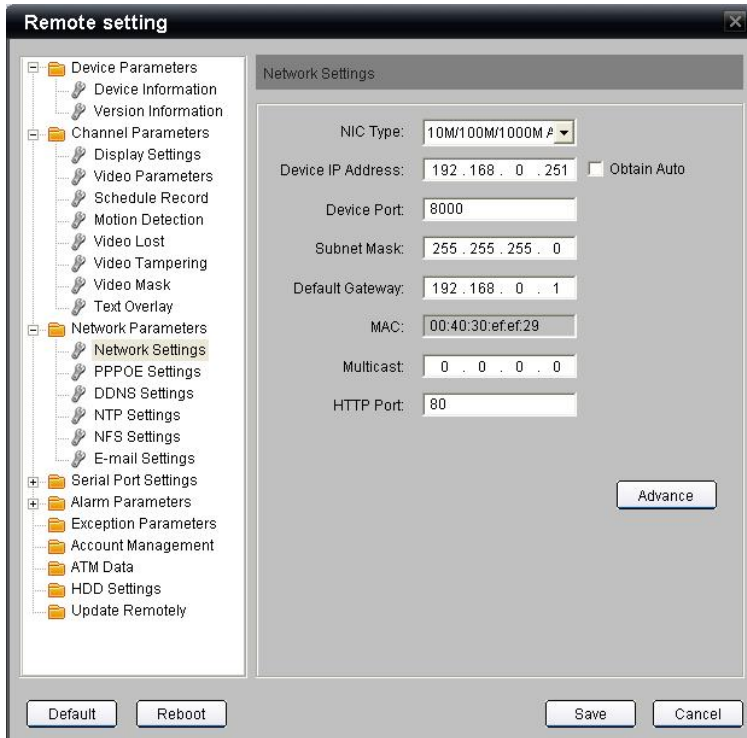
3.2.1.4 Now load the Client software to the PC.

3.2.1.5 Logon to the software using **admin 123456**

3.2.1.6 Click on **Setup** followed by a single left mouse click on the DVR icon and then a single left mouse click on **Remote Configure** and wait for 3 seconds to display:



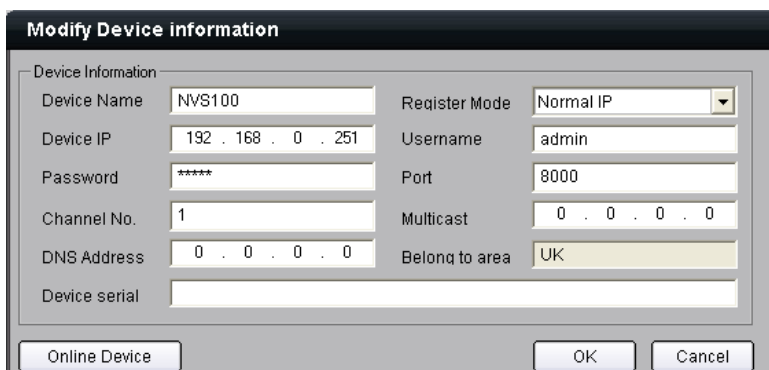
3.2.1.7 Now click on **Network Settings**. Change **IP address and Subnet Mask** to match the required settings.



3.2.1.8 Save and Reboot.

Clicking on the SAVE button should apply the network changes to the Video Bridge but you must power it down for at least 5 seconds before repowering it. The reboot button should not be used after modifying network settings because it performs a soft reboot only.

3.2.1.9 When NVS reboots it will contain new settings and so it will be necessary to enter software again and double left click on unit icon to the left of unit name to alter the IP address settings in the **Modify Device Information** menu. (This sets the software connection IP settings). **Save and Reboot**



3.2.1.10 Now change the IP Address and Subnet Mask **in the PC** back to the required settings, reconnect the LAN cable and check that ping works okay to the NVS unit.

3.3 PTZ control and Configuration

Step1: Connect the unit to the PTZ. Please refer to RS485 pin definitions. NVS just uses Pin1 (TX+) and Pin2 (TX-) to send PTZ control command.

Step2: You can use remote client software to setup PTZ protocol.

In client software **Remote Configure** dialogue box, select **Serial Port Settings** and then **RS485 Settings**.

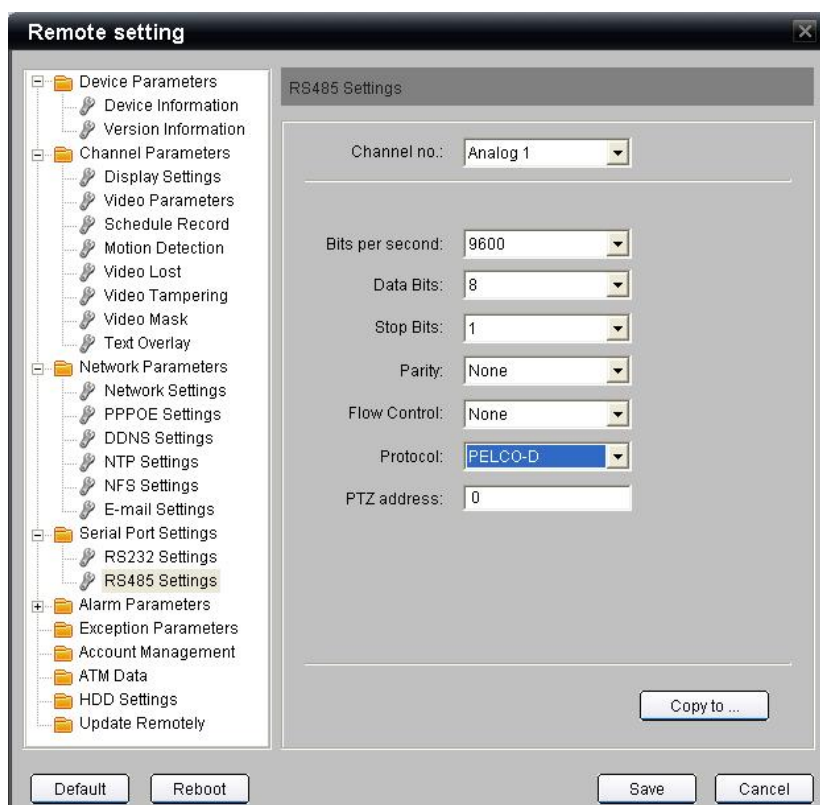


Fig. 3.11 RS-485

Please refer to client software user manual for detailed information.

4. Upgrade Firmware

SPECIAL NOTE: DO NOT UPGRADE FIRMWARE UNLESS CONFIRMED BY SUPPLIER, AS INCORRECT APPLICATION CAN DAMAGE THE NETWORK VIDEO SERVER.

4.1 Use Client Software to upgrade firmware

Click on **Remote Configure** and select **Update Remotely** to display following:



Fig.4.8 Remote upgrading

Click "Browse" button and select the firmware file.

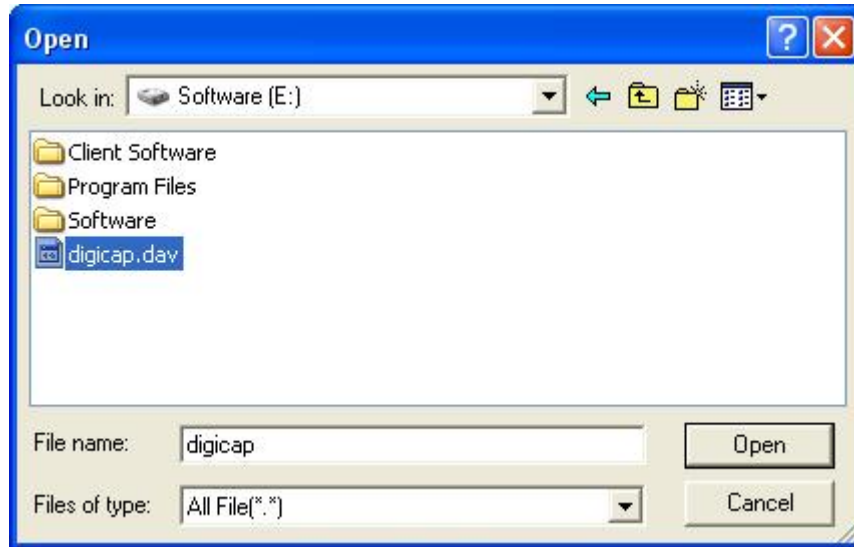


Fig.4.9

Then click “Upgrade” button, to complete the upgrading process of the video server firmware.

5. Frequently asked questions

1) Failure to control PTZ

It is possible that the camera and equipment are not connected through RS485 port, or the wrong configuration is set in the PTZ camera.

2) Certain individual channel pictures are abnormal

Please check whether the video cable is correctly connected to the camera and the NVS.

3) I have changed the NVS IP address and cannot connect to the Server

You will need to use the WinPcap and SADP program routine to establish the IP address settings.

Appendix A Specifications

Model	Video Bridge
Video standard	H.264
Encode/Decode resolution	4CIF/DCIF/2CIF/CIF/QCIF
Video input	1 ch BNC, 1.0Vp-p, 75Ω
Frame rate (per channel)	4CIF: 25(P)/30(N) fps
Bit rate	32Kbps ~ 2Mbps, user-defined
Stream type	Video/Video&Audio
Support dual stream	Yes
Audio input	1
	BNC 2.0Vp-p, 1kΩ
Audio output	1 Channel RCA Linear Electrical Level, 600Ω
Audio Compression	OggVorbis 16Kbps
Voice talk	1 Line in RCA 2.0Vp-p, 1kΩ
Network port	1 RJ45 10M/100M
RS-232 port	1 RJ45 RS232 Port
PTZ port	Screw terminal (T+, T-)
Alarm input	1
Relay output	1
Power supply	DC 12V
Power consumption	≤3W
Working temperature	-10°C ~ +55°C
Working humidity	10% ~ 90%
Size	70mm*120mm*45mm
Weight	≤0.5Kg

PAL: 176*144(QCIF), 352*288(CIF), 704*288(2CIF), 528*384(DCIF), 704*576(4CIF);
 NTSC: 176*120(QCIF), 352*240(CIF), 704*240(2CIF), 528*320(DCIF), 704*480(4CIF).
 Stabiliser power supply: input AC 100-240V47-63Hz

Appendix B Components List

1. One NVS video server.
2. A CD containing client application.
3. One power supply voltage stabiliser.
4. One 220V power cable.
5. One cable connecting RS232 with DTE.



WEE/CG0783SS

This symbol on the products and/or accompanying documents means that used electronic equipment must not be mixed with general household waste. For treatment, recovery and recycling please return this unit to your trade supplier or local designated collection point as defined by your local council.

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