

Converts Analogue Cameras to IP



Version 8

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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

PIN definition of LAN or patch cable connecting NVS and HUB: (1) 1 (white-orange) _____ (white-orange) 1 _____ (Orange) 2 2 (Orange) 3 (white-green) _____ (white-green) 3 _____ (blue) 4 (blue) 4 5 (white-blue) _____ (white-blue) 5 _____ (green) 6 (green) 6 7 (white-brown) _____ (white-brown) 7 _____ (brown) 8 (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

DVR Multi-Client Installa	tion Disc
oftware & Manuals About	
Please Select Your Product Below Alien & AlienPro DVRS + Video Bridge	
Software Software Manual New Devices? Mobile Clients Player Soft	tware Product Manuals More Info
Compatible devices include the Alien, AlienPro and DVR9k DVRs as well as certa cameras and the Alien Video Bridge.	ain IP 🔷 📃 Install WinPCAP
Compatible devices include the Alien, AlienPro and DVR9k DVRs as well as certa cameras and the Alien Video Bridge. SADP is dependent upon WinPCAP which must be installed first, without this SAD will not work.	P Install WinPCAP
Compatible devices include the Alien, AlienPro and DVR9k DVRs as well as certa cameras and the Alien Video Bridge. SADP is dependent upon WinPCAP which must be installed first, without this SAD will not work. WinPCAP is a registered trade mark of Case Technologies.	Ain IP Install WinPCAP
Compatible devices include the Alien, AlienPro and DVR9k DVRs as well as certa cameras and the Alien Video Bridge. SADP is dependent upon WinPCAP which must be installed first, without this SAD will not work. WinPCAP is a registered trade mark of Case Technologies.	DP Install SADP
Compatible devices include the Alien, AlienPro and DVR9k DVRs as well as certa cameras and the Alien Video Bridge. SADP is dependent upon WinPCAP which must be installed first, without this SAD will not work. WinPCAP is a registered trade mark of Case Technologies.	Ain IP Install WinPCAP

3.1.2 Click on Next >



3.1.3 Click on Next >



3.1.4 Click on I Agree after reading License Agreement

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ress Page Dowr	n to see the resi	t of the agree	ment.		
Copyright (c) 19 Copyright (c) 20 All rights reserve	99 - 2005 NetG 05 - 2007 CACE ed.	roup, Politecni E Technologies	co di Torino (It , Davis (Califor	aly). nia).	_
Redistribution a permitted provid	nd use in source led that the folk	and binary fo owing conditio	rms, with or wi ns are met:	thout modification,	are
1. Redistribution conditions and t 2. Redistribution	is of source cod he following disc is in binary form	le must retain claimer. 1 must reprodu	the above copy ice the above c	right notice, this lis opyright notice, thi	t of s list of
conditions and t	he tollowing disc	laimer in the c	locumentation	and/or other materi	als 💌
r you accept the	e terms of the a tall WipPcap 4 (greement, clic 1 2	k I Agree to co	ntinue. You must ac	cept the

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 >

	A
License Agreement	
Please carefully read the following license agreement.	
Software Licence Agreement	
3Y DOWNLOADING, INSTALLING OR USING OUR SOFTWARE YOU ACCEPT TH CONDITIONS STATED BELOW .	
(f the company you represent or you (collectively "you") do not agree to the conditions of this agreement, do not install or use the software.	terms and
Please note, no charge or fee is made for this software and if you do not acc and conditions do not install it or use it.	ept these terms
PROPRIETARY RIGHTS AND CONDITIONS: All right, title and interest including, but not limited to, copyright and other int rights in and to the software (including but not limited to all html, asp, aspx, c and text files) are owned by System Q Ltd. Such rights are protected by Inte	ellectual property III, graphic/image, rnational
✓ I accept the terms of the license agreement	
stallAware	
	- Crawl

3.1.10 Click on Next >

SADP Device Detection - InstallAware Wizard	
Important Information Please carefully read the following program information.	5
SADP Device Detection & Configuration	-
The SADP software tool is capable of searching for and configuring con devices on your network - the goal being to give those devices a TCP/I appropriate for your network or subnet such that standard tools and ap access it in the normal way.	mpatible P address plications can
This software is dependent upon WinPCAP being installed first and wil without it.	11 not function
WinPCAP consists of a driver that extends the operating system to pro- network access through your network interface card - bypassing the pro-	vide low-level otocol stack.
When using SADP if no device is found, you should disable, albeit tem	porarily, 🗾
nstallAware	
< <u>B</u> ack <u>N</u> ext >	Cancel

3.1.11 Enter Name and Company and click on Next >

		_	
User Name:			
Consider Harris			
Vour Company			
Lice company!			

3.1.12 Click Next > or detail folder required

estination Folder Select folder where setup will install files.		6
Install SADP Device Detection to:	1999	
C:\Program Files\Alien DVR\SADP Device Detection	hange	
Destination Folder	659,949 hvte	<
Destination Folder Required Disk Space: Remaining Disk Space:	659,949 byte 63,422 MI	s B

3.1.13 Check the required "Install this application for" box

SADP Device Detection - InstallAware W	/izard		<u>- 🗆 ×</u>
Select Program Folder Select the location where you would like to	create new short	cuts.	5
Setup will add program shortcuts to the Pr a new folder name, or accept the suggest	ogram Folder liste ed name, Click Ne	d below. You may xt to continue.	/ type
Program Folder:			
Alien DVR\SADP Device Detection			
Install this application for:	(all users)		
nstallAware	< <u>B</u> ack	Next >	Cancel

3.1.14 Click on Next >



3.1.15 Click on Finish



3.1.16 Click on Enter to run SADP or close by clicking on ${f X}$



3.1.17 SADP will display the device types found on the network. Click on the respective device line and it will change colour.

1

De	vice type	IP address	Port number	Device Serial No.	Denies Constitution
1		192.168.0.252	8000 🗡	1620090224BBRR01064;	Device Serial Number
					soft version
					subnet mask
					0.0.0.0
					IP address
					0.0.0.0
					device port
					0
					MAC Address
					please input password
					-Resume default password-
					OK

Device type	IP address	Port number	Device Serial No.	Davias Carial Number
001	192.168.0.252	8000	1620090224BBRR01064	
				1020030224001110100420034
				soft version
				V1.0.4build 091029
				subnet mask
				255 . 255 . 255 . 0
				IP address
				device port
				8000
				MAC Address
				00-40-30 e2-1d-61
				'
				please input password
				4
				modify cancel save
				-Resume default password-
				OK

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:

Device Parameters Device Information	evice Information		
Version Information Channel Parameters Display Settings	Device Name:	Embedded Net DVR	
- Proping Cettings	Device No.:	255	
Schedule Record Motion Detection	Record Replace:	Yes 💌	
- P Video Lost	Main BNC scale:	Disable 🗾	
🌮 Video Tampering 🌮 Video Mask	Spot BNC scale:	Disable 🗾	
P Text Overlay	Device Type:	DS73XX_H_S	
Network Parameters Parameters Parameters Parameters	Channel Number:	4	
PPPOE Settings	HDD Number:	1	
NTP Settings	Alarm Input Number:	16	
- 🌮 NFS Settings 🛛 👔	arm Output Number:	4	
Serial Port Settings Alarm Parameters Exception Parameters Account Management Arth Data HDD Settings	Device Serial No.:		
Update Remotely			

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

Remote setting			X
Device Parameters	Network Settings		
Version Information Channel Parameters	NIC Type:	10M/100M/1000M A	ĺ.
Video Parameters	Device IP Address:	192.168.0.251	🗖 Obtain Auto
🖗 Schedule Record 🖗 Motion Detection	Device Port:	8000	
- 🦻 Video Lost - 🦻 Video Tampering	Subnet Mask:	255.255.255.0	
Video Mask	Default Gateway:	192.168.0.1	
Network Parameters Network Settings	MAC:	00:40:30:ef:ef:29	
PPPOE Settings	Multicast:	0.0.0.0	
P NTP Settings	HTTP Port:	80	
🗄 📄 Serial Port Settings 🖶 💼 Alarm Parameters			Advance
ATM Data			
Dpdate Remotely			
Default Reboot			Save Cancel

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**

Modify Device information					
Device Information - Device Name	NVS100	Register Mode	Normal IP		
Device IP	192 . 168 . 0 . 251	Username	admin		
Password	*****	Port	8000		
Channel No.	1	Multicast	0.0.0.0		
DNS Address	0.0.0.0	Belong to area	UK		
Device serial					
Online Device]		OK Cancel		

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**.

Device Parameters Provide Parameters Provide Parameters Provide Parameters	R8485 Settings		
 Version Information Channel Parameters Display Settings 	Channel no.:	Analog 1	
Video Parameters Schedule Record Motion Detection Video Lost Video Tampering Video Mask	Bits per second: Data Bits:	9600	•
Text Overlay Text Overlay Network Parameters	Stop Bits: Parity:	1 None	<u> </u>
PPPOE Settings	Flow Control:	None	•
Intersectings Intersectings Intersectings	Protocol:	PELCO-D	
	PTZ address:	Ju	
			Copy to



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:

Remote setting	×
Remote setting Device Parameters Device Information Channel Parameters Display Settings Video Parameters Schedule Record Motion Detection Video Lost Video Lost Video Tampering Video Mask Prext Overlay Network Parameters Network Settings PPOE Settings PPOE Settings PTS Settings PTS Settings PE-mail Settings PE-mail Settings Alarm Parameters Account Management ATM Data DD Settings	Upgrade File: Browse Upgrade Status: Upgrade
 Default Reboot	Save Cancel

Fig.4.8 Remote upgrading

Click "Browse" button and select the firmware file.

Open		? 🛛		
Look in: 🕯	Software (E:)	E C	* 📰 •	
Client Software Client Software Software digicap.dav				
File name:	digicap		Open	
Files of type:	All File(*.*)		Cancel	

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	
Audio input	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		

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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