



IVS-170BD IVS-170BE

Net digital video server



User's Guide

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Thanks for purchase the products of our company. If you have any request or questions, please contact us immediately.

This manual is applicable for IVS-170BD/BE Decoding Video Server

This manual may contain some technically incorrect places or printing errors. This manual will be updated on a regular basis without additional specific notice. The updates will be added into the new version of this manual. We will readily improve or update the products or procedures described in the manual.

Version Description

Version1.5:

To be matched with Version1.5 encoding DVR and DVS.

Version1.4:

To be matched with Version1.4 encoding DVR and DVS.

Chapter 1 Introduction

IVS-170BD/BE series video server adopts embedded real-time multi-task operation system (RTOS) and embedded processor, which is completely independent of PC platform and, efficiently improves system performance. Firmware is burned in FLASH, makes the system more steady and reliable.

IVS-170BD is a decoder. It can decompress H.264 stream from other Net DVRDVS such as DVR-x70B.

IVS-170BE video server is both an encoder and decoder. It has one channel video input, can compress the video signal into H.264 real time stream, and transmit the live steam through network. It also has one channel video output to decompress the H.264 stream from other Net DVRDVS such as DVR-x70B, IVS-170BE, etc.

Chapter 2 Installation

2.1 Hardware installation

2.1.1 Installation steps

1. Open packing case, and check the integrity;
2. Take out things needed in installation;
3. Connect cables needed (video signal input cable, audio signal input cable, RS485 cable and cable for LAN);
4. Take out stabilizer power supply and power on.

2.1.2 Installation notice

Please read the following notice carefully. If you have any question, please contact us.

Notice:

1. After Opening the packing box, please check carefully to confirm that the goods in it are consistent with list;
2. Please read user's manual carefully before installation;
3. Please power-off all related equipments before installation;
4. **Please check the voltage of power supply to avoid voltage mismatch;**
5. Installation environmental: Do not use it under humidity and high temperature; to keep ventilation to vent freely, avoid to be walled up; to keep them horizontally, avoid setting up in the vibration surroundings.

2.2 Panel description

Front panels:



IVS-170BD/BE Front Panel

Interface Instruction (From left to right in turn)

1. Power supply indicator lamp;

2. Link indicator lamp;
3. Tx/Rx indicator lamp;
4. RS232 interface;
5. 4 Sensor alarm input and 2 replay output interface;
6. USB interface (reserved).

Back panel:



IVS-170BD Rear Panel



IVS-170BE Rear Panel

Interface Instruction (From left to Right in return)

1. For IVS-170BE, there is video input connector on the left side of video output;
2. One line in audio input;
3. One audio output;
4. UTP network interface;
5. RS-485 interface;
6. Power jack is connected with DC 12V. Please use the stabilizer power supply correctly;

2.3 The pin definition of physics interfaces

2.3.1 PIN definition of RS-232 port

The Decoder has one RS232 standard serial interface, with RJ-45 connector. Its pin definition is as follows ('I' means input, and 'O' means output):

Table 2.1 Pin definition of RS232 serial port

Pin No	Neme	I/O	Explanation
1	DCD	I	Carrier Detect
2	RxD	I	Receive
3	TxD	O	Transmit
4	CTS	I	Clear send
5	RTS	O	Request to send
6	DTR	O	Data Terminal Ready
7	GND		GND
8			

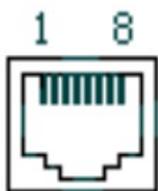
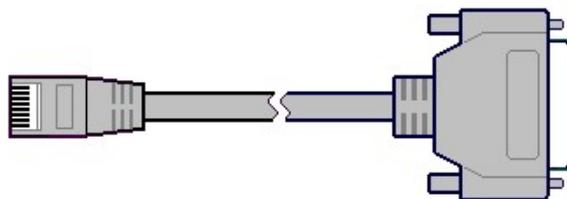
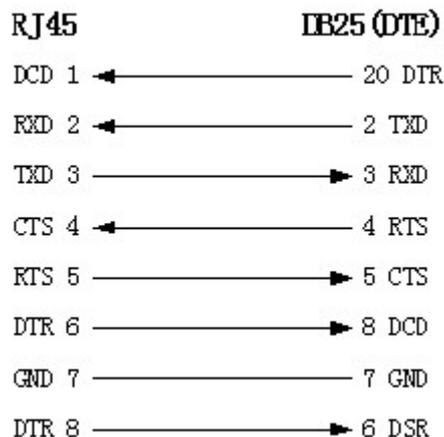


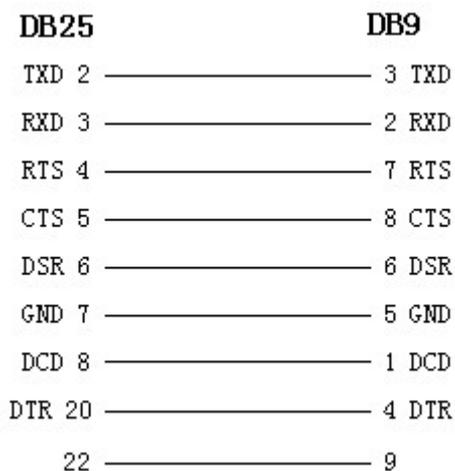
Fig 2.1 RJ-45

(1) When the RS232 interface of the DVS connects with the DTE equipment, one end of the cable is the 8-pin RJ45 connector (to DVS) and the other of the cable is the DB25 female connector (to DTE). Below is the description of the internal connection between RJ45 and DB25.

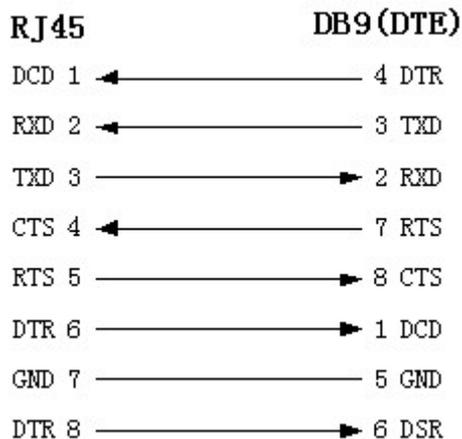




(2) 25-pin to 9-pin converter's internal connection is like this:

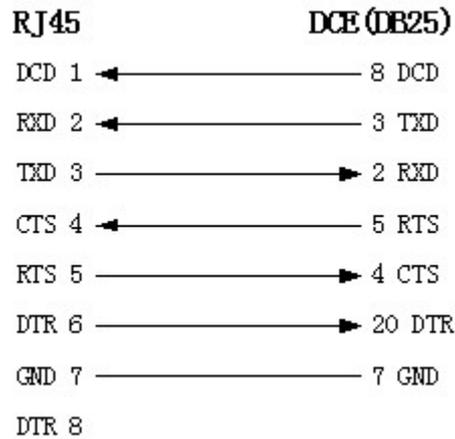


(3) If you don't want to use 25-pin to 9-pin convertor to connect DVS and DTE through RS232 interface, you must use RJ45-DB9 cable. Its internal connection description is:

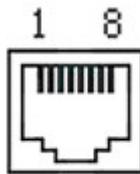


(4) When the RS232 interface of the DVS connects with the DCE (such as MODEM), one end of the cable is the 8-pin RJ45 connector and

the other is the DB25 male connector. Below is the description of the internal connection between RJ45 and DB25:



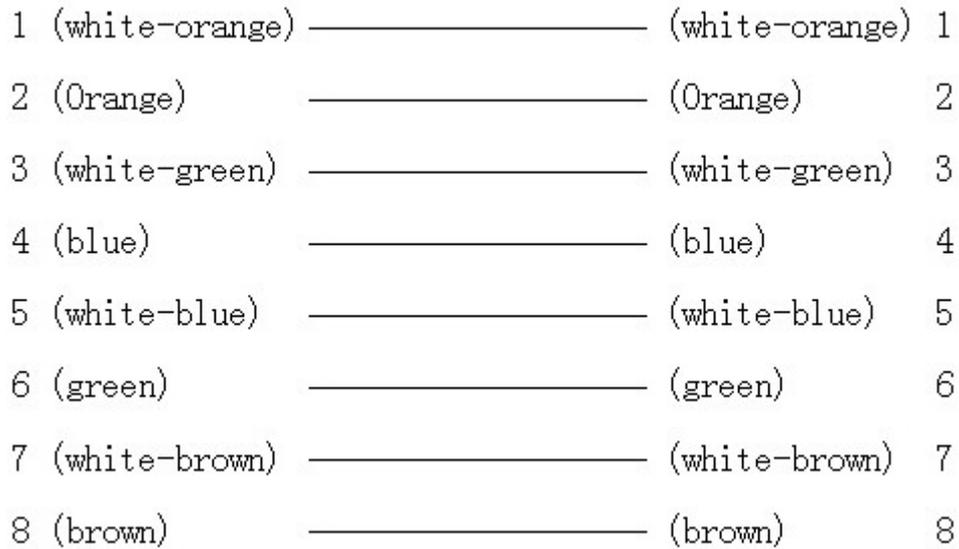
2.3.2 PIN definition of RS485 port



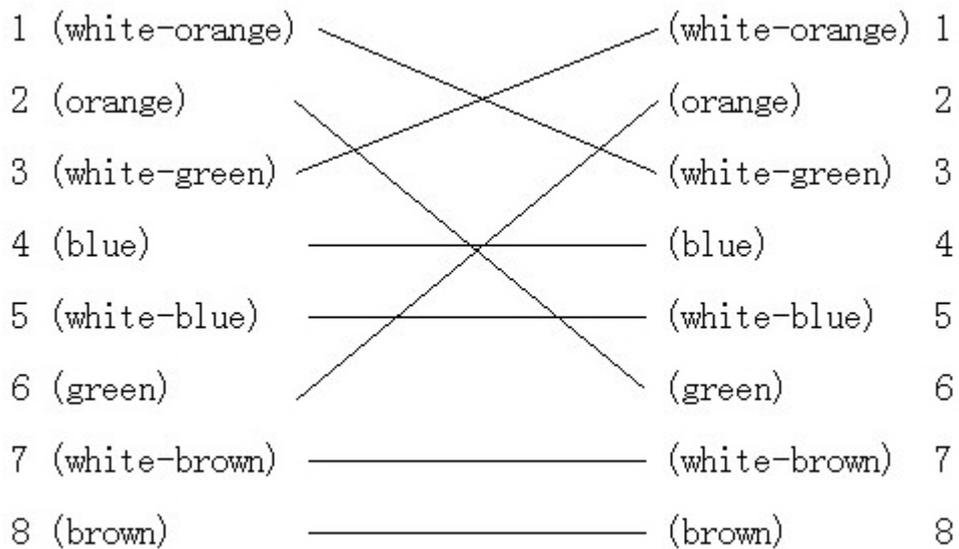
Pin5 ---- TX+/RX+
 Pin 6 ---- TX-/RX-

2.3.3 PIN definition of Ethernet port

(1) PIN definition of the direct network cable connecting Decoder and network HUB or switch:



(2) PIN definition of the cross network cable connecting Decoder and host PC:



Chapter 3 Video Server Setup

There are three kinds of methods to configure the parameters of video server.

1. Through Hyper Terminal (connect Decoder with the PC through RS-232 serial ports)
2. Through client-end application software (connect Decoder with PC through network)

3.1 Parameter Setup through RS-232 serial port

Mainly set up IP parameters of the video server through serial port. The defaulted IP address is 192.0.0.62.

Under the case that the IP address is unknown; the Hyper Terminal (need to connect the serial ports) can only be adopted to configure IP address and other parameters. Under the case that IP address is known, TELNET can be adopted to configure IP address and other parameters, and can also modify the IP address by using client-end software.

3.1.1 Hyper Terminal Setup

Please direct connect the RS-232 serial port of PC with the RS-232 serial port of video server before configuration (there are RJ45 head and DB9 line in the packing carton)

How to establish the connection with the super terminal connection?

Step one: Enter into Hyper Terminal. Click “Start” → “Programs” → “Accessories” →

“Communications” → “Hyper Terminal” in Windows system, and the dialogue box below will appear (Fig. 3.1.1):



Fig. 3.1.1 newly establish a connection and define the name and icon

Step2: To name the connection name and to define the icon. Input a name (e.g. aa), select a icon, press “OK”, the dialogue box like Fig. 3.1.2 appears.



Fig. 3.1.2 select communication port

Step 3”: to select the communication port. Select “com1” communication port in Fig3.1.2, press “OK”, the dialogue box as Fig. 3.1.3 will appear.

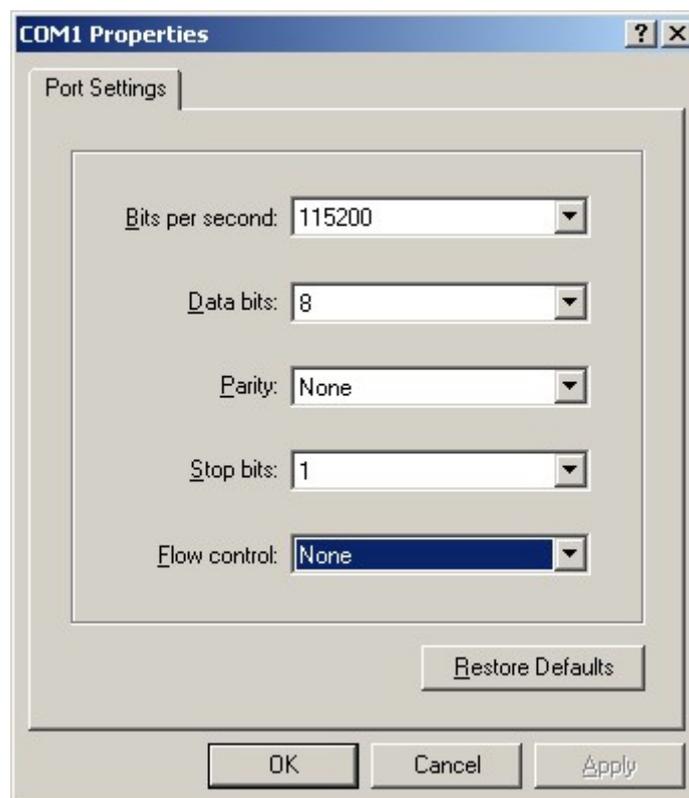


Fig. 3.1.3 Serial ports parameter setup

Step 4: Serial port parameters setup. Set the serial port parameters as the following setup: Bits per second: 115200, Data bits: 8, Parity: None, Stop bits: 1, Flow control: None. Press “OK” after finish, the Hyper Terminal interface like Fig. 3.1.4 will appear

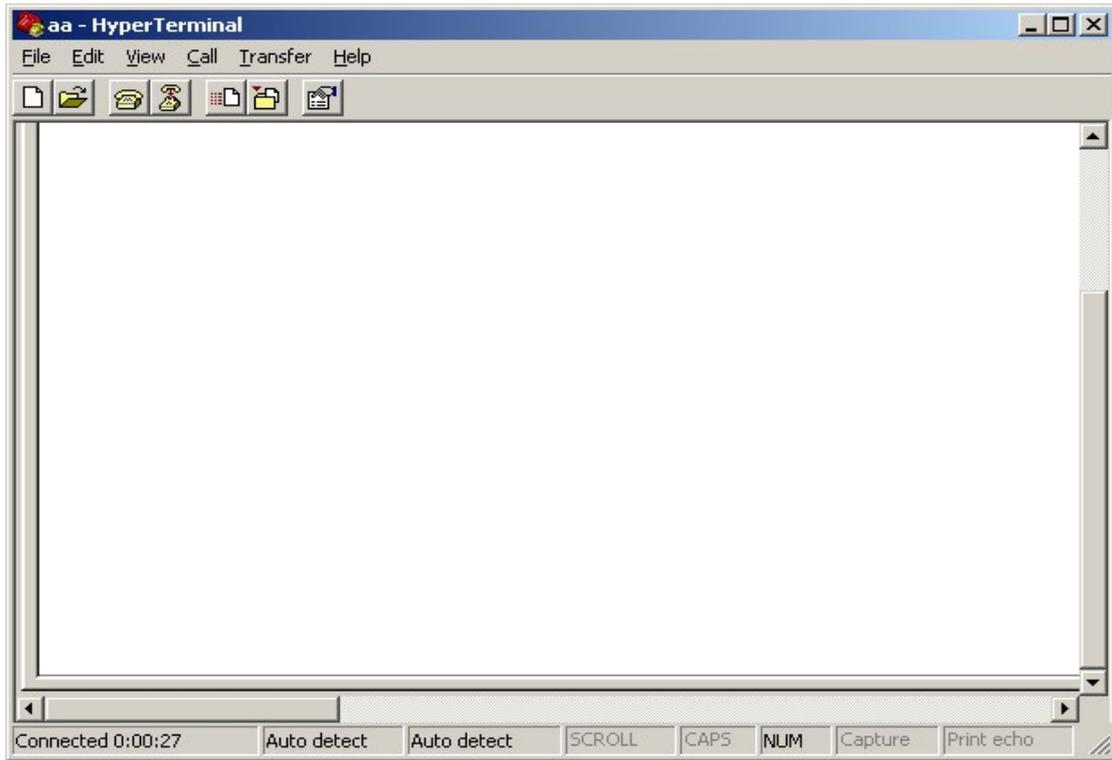


Fig. 3.1.4 Hyper Terminal Interface

Step 5: To close the window, the Fig. 3.1.5 will appear. Select “Yes” and Fig. 3.1.5 will appear. Select “Yes” again to have the Fig. 3.1.6



Fig. 3.1.5 to disconnect

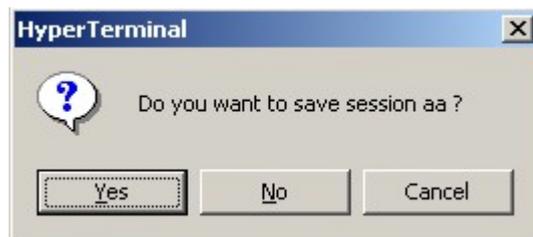


Fig. 3.1.6 save Hyper Terminal session

Step 6: Save the Hyper Terminal session for using next time. After saving, it will new establish a “Hyper Terminal” item in the program group “Start” → “Programs” → “Accessories” → “Communications” → “Hyper Terminal” and it includes all “Connection” name for all Hyper Terminal. Here you have see a “aa.ht”.

3.1.2 Shell Commands Under Hyper Terminal

Please use the DTE cable and the DB9/DB25 convertor to connect PC with DVS RS-232 port.

Step 1: Enter into the Hyper Terminal. Click “ Start”→ “Programs”→ “Accessories”→

“Communications”→ “Hyper Terminal”→ “aa.ht”, the Hyper Terminal interface in Fig. 3.1.4 will appear.

Step 2: Press “Enter” in Hyper Terminal, the prompt “->” appear, as in Fig. 3.1.7. Under this prompt the following operation commands to accomplish the setup of the parameters.

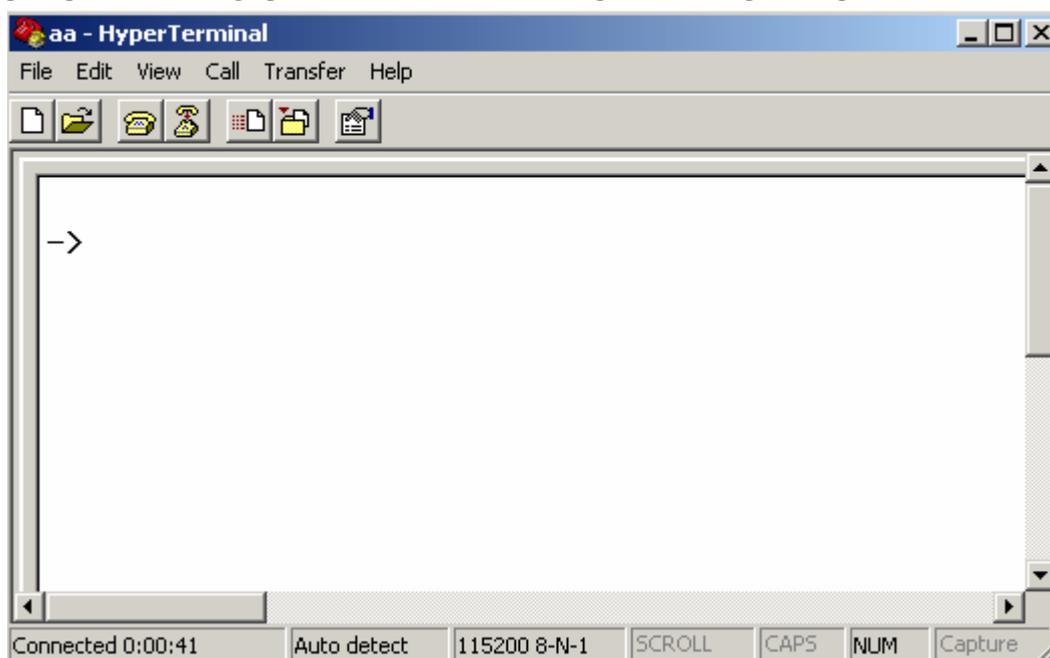


Fig. 3.1.7 Hyper Terminal command prompt

Input help, the supported configuration commands can be checked up, as in Fig. 3.1.8.

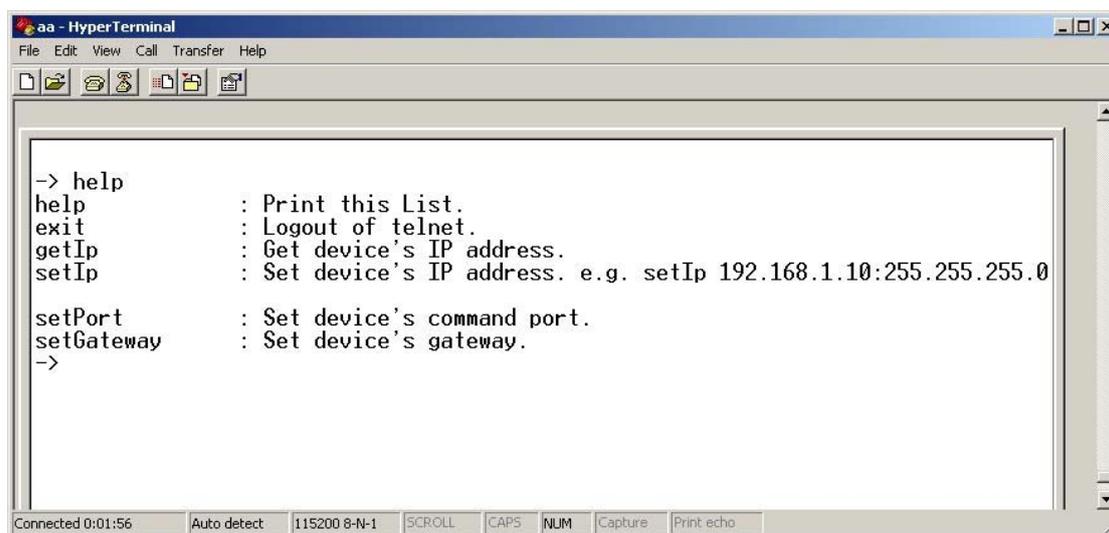


Fig. 3.1.8 to check command

The following is the introduction of getIp, setIp commands.

getIp

Function: to get the fixed IP, subnet mask, gateway, command port, IP address of PPPoE dialup (the IP address of PPPoE will be 0.0.0.0 if there is no dialup or dialup is not successful).

Parameter: none.

Grammar format: Enter after input the command

Explanation: Please pay attention whether the inputting letters are capital or low case.



```

aa - HyperTerminal
File Edit View Call Transfer Help
[Icons]

-> help
help          : Print this List.
exit          : Logout of telnet.
getIp         : Get device's IP address.
setIp        : Set device's IP address. e.g. setIp 192.168.1.10:255.255.255.0

setPort       : Set device's command port.
setGateway    : Set device's gateway.
-> getIp
IP address    : 192.0.1.62
Subnet mask   : 255.255.248.0
Command port  : 8000
-> _

Connected 0:02:46  Auto detect  115200 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo

```

Fig. 3.1.9 to get parameters of IP, PPPoE

setIp

Function: to set the IP, subnet mask and gateway of the device

Parameter: IP address, subnet mask, gateway

Grammar format: setIp IP: mask

Explanation: Please pay attention whether the inputting letters are capital or low case. And separate the parameters by colons.



```

aa - HyperTerminal
File Edit View Call Transfer Help
[Icons]

->
-> help
help          : Print this List.
exit          : Logout of telnet.
getIp         : Get device's IP address.
setIp        : Set device's IP address. e.g. setIp 192.168.1.10:255.255.255.0

setPort       : Set device's command port.
setGateway    : Set device's gateway.
-> setIp 192.0.1.62:255.255.248.0
-> _

Connected 0:00:42  Auto detect  115200 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo

```

Fig. 3.1.10 to set IP

3.2 PTZ control

Step1: Connect Decoder RS-485 interface with PTZ. Please refer to RS-485 pin definition. DVS just uses Pin5 (TX+) and Pin6 (TX-) to send PTZ control command.

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

In client software remote setup dialog box, select “Serial Para” tab button. You can select DVS PTZ parameters in the corresponding dialog box.

The screenshot shows the "Remote Setup" dialog box with the "Serial Para" tab selected. The "RS485 Properties" section is circled in red. The settings for RS485 are as follows:

Parameter	Value
Select Camera	Channel1
Baudrate	9600
Data Bit	8
Stop Bit	1
Parity	None
Flow Ctrl	None
Protocol	Kalatel-312
PTZ Addr	0

Other visible settings in the "Serial Para" tab include:

Parameter	Value
Baudrate	115.2k
Data Bit	8
Stop Bit	1
Parity	None
Flow Ctrl	None
Mode	Console

Buttons at the bottom of the dialog include: Reboot, Default Para., Save Para., Exit, OK, and Cancel.

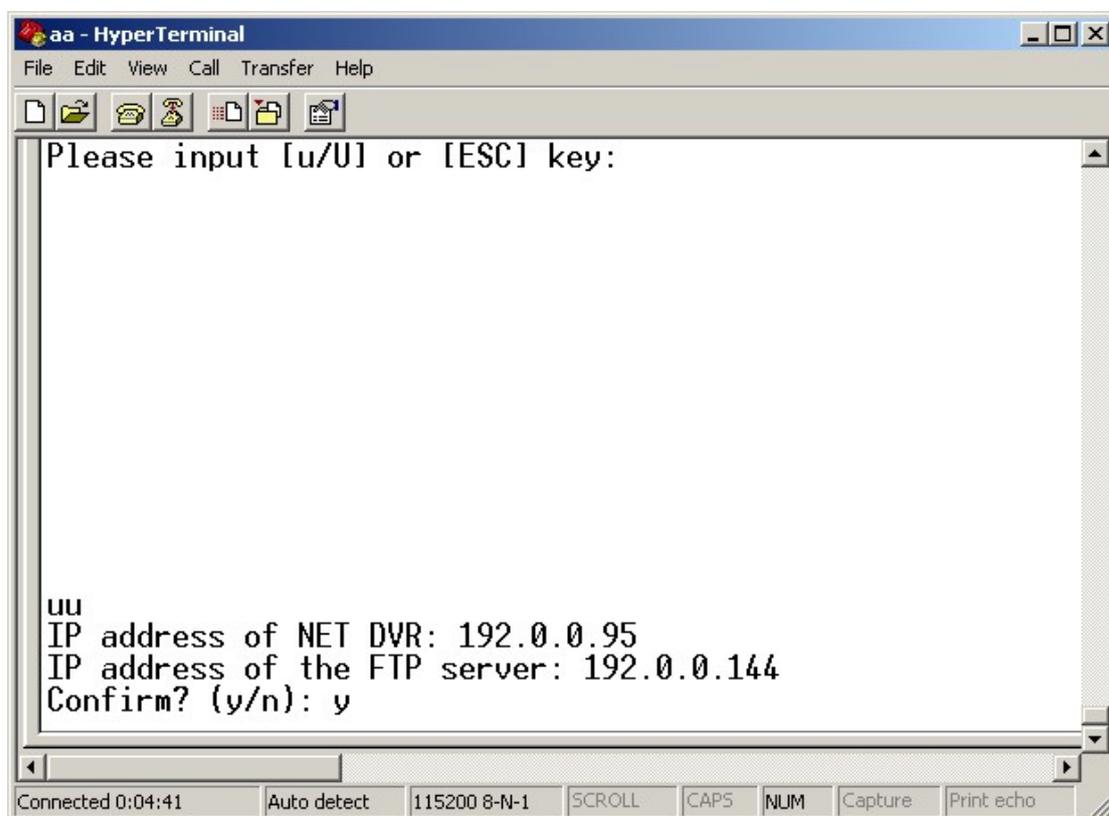
Please refer to client software user manual for detail information.

Chapter 4 Upgrade Firmware

There are two methods to upgrade the Decoder firmware. One is using shell commands to ask Decoder to download firmware from FTP server. The other is using PC client software.

4.1 Use Shell Command and FTP Server

1. Using DTE cable to connect the RS232 of Decoder with the RS232 of PC.
2. Setup the Hyper Terminal correctly and run it.
3. Make sure the FTP Server (wftpd32.exe) is setup correctly (the corresponding user manual is in CD) and run it.
4. Make sure the network between Decoder and PC is ok.
5. Press "ctrl" and "u" keys of the PC keyboard, do not release them.
6. Switch off and on the power supply of decoder.
7. In the HyperTerminal, the following sentence is appeared:
Please input [u/U] or [ESC] key
8. Release "ctrl" and "u" keys, press "u" key
9. After that, please refer to following pictures.



In the example, I set the Decoder as "192.0.0.95" and ftp server as "192.0.0.144". Of course the ftp server software (wftpd32.exe) is run in the PC whose IP address is "192.0.0.144" and the network is OK. In this case, Decoder (192.0.0.95) will search the PC (192.0.0.144) and download

the firmware from ftp server.

```

aa - HyperTerminal
File Edit View Call Transfer Help
[Icons]
uu
IP address of NET DVR: 192.0.0.95
IP address of the FTP server: 192.0.0.144
Confirm? (y/n): y

boot device      : secEnd
unit number     : 0
processor number : 0
host name       : host
file name       : vxWorks
inet on ethernet (e) : 192.0.0.95
host inet (h)   : 192.0.0.144
user (u)        : smdk2510
ftp password (pw) : smdk2510
flags (f)       : 0x8
target name (tn) : smdk2510

BOOT FROM TFFS FILE SYSTEM secEnd
Attached TCP/IP interface to secEnd0.
ifname : secEnd0, inetAddr : 192.0.0.95
Warning: no netmask specified.
Attaching network interface lo0... done.
ifname : lo0, inetAddr : 127.0.0.1
.....

Connected 0:05:26  Auto detect  115200 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo

```

```

aa - HyperTerminal
File Edit View Call Transfer Help
[Icons]
      : smdk2510
(pw)  : smdk2510
      : 0x8
(tn)  : smdk2510

FS FILE SYSTEM secEnd
/IP interface to secEnd0.
End0, inetAddr : 192.0.0.95
netmask specified.
twork interface lo0... done.
, inetAddr : 127.0.0.1
:::
igicap.bin over, ckSum= 0xb88f378, byteToWrite=0
sp.bin over, ckSum= 0x2f3e181, byteToWrite=0
ogo.yuv over, ckSum= 0x67efa8, byteToWrite=0
llImage over, ckSum= 0xe050ce, byteToWrite=0
ouricon over, ckSum= 0xaf6fe, byteToWrite=0

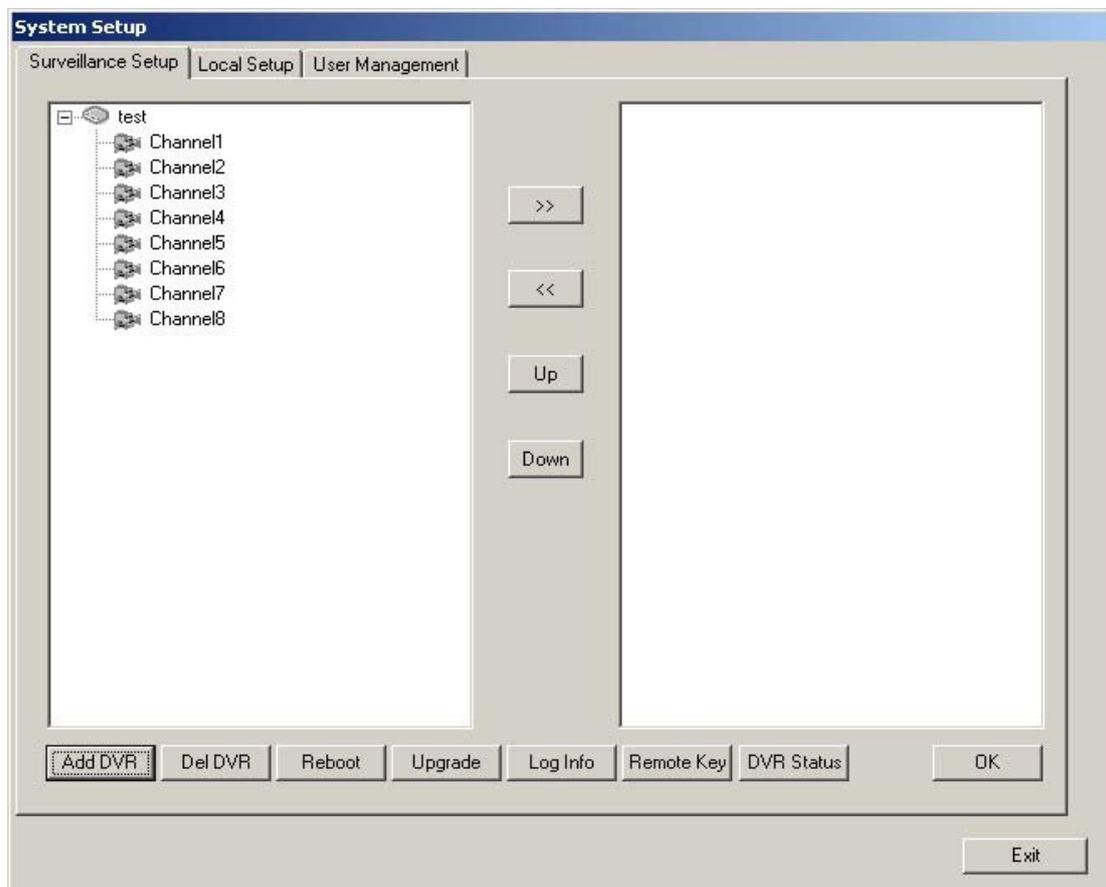
tware upgrading succeeded. Press any key to reboot.

Connected 0:06:07  Auto detect  115200 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo

```

4.2 Use Client Software to upgrade firmware

In the system setup dialog of DVRDVS client software (refer to client software user manual), there is a button named “Upgrade”:



Select the DVRDVS, Click “Upgrade” button, the following dialog box will be appeared:

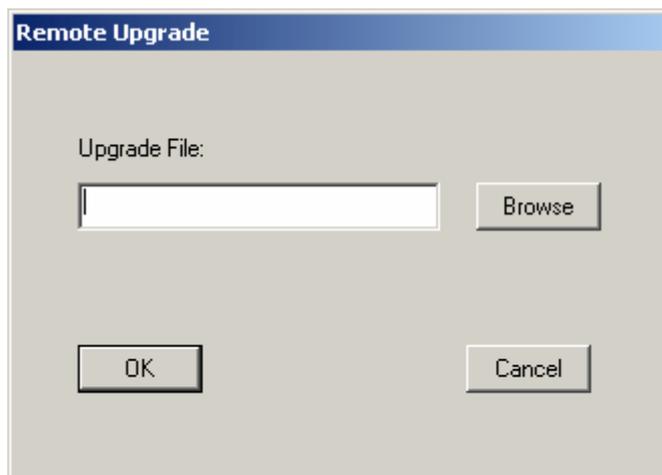


Fig.4.21 remote upgrading

Click “Browse” button and select the firmware file. Then click “Upgrade” button, to complete the upgrading process of the video server firmware.

Chapter 5 Frequent ask questions

1, Failure to control PTZ

It is possible that the camera and equipment are not connected through RS485 port, or the wrong configuration of the decoder.

2, certain individual channel picture is un-normal

Please check whether the video cable is well connected with the camera and the Embedded DVS

3, Possible reasons which can cause the failure of upgrading

Failure of the network, IP address error in the FTP host computer, FTP service is not been booted by PC, the path to upgrade is incorrect, no permission (usually happened when to upgrade through client-end.)

If the above information cannot meet your demand, please not hesitate to contact the provider.

Appendix A IVS-170BD Specifications

Model name	IVS-170BD Decoder
Hardware decoding resolution	PAL: 704*576(4CIF) NTSC: 704*480(4CIF) PAL: 528*384(DCIF) NTSC: 528*320(DCIF) PAL: 704*288(2CIF) NTSC: 704*240(2CIF) PAL: 352*288(CIF) NTSC: 352*240(CIF) PAL: 176*144(QCIF) NTSC: 176*120(QCIF)
Video output	1 channel BNC (1.0Vp-p, 75Ω)
Stream type	H.264 video stream or video & audio stream
Voice interface	1 RCA linear input, 600Ω
Audio output	1 RCA output
Communication interface	1 RJ45 10M/100M UTP network port 1 RJ45 RS-232 port 1 RJ45 RS-485 port 1 RJ45 for alarm input and output
External alarm input	2 input
Relay output	2 output
Power supply	DC +12V
Power consumption	7W
Working temperature	-10°C - +55°C
Working humidity	10%--90%
Size	196mm*122mm*41.5mm
Weight	1.5Kg

Appendix B IVS-170BE Specifications

Model name	IVS-170BE Encoder & Decoder
Compression standard	H.264
Compress resolution	PAL: 704*576(4CIF) NTSC: 704*480(4CIF) PAL: 528*384(DCIF) NTSC: 528*320(DCIF) PAL: 704*288(2CIF) NTSC: 704*240(2CIF) PAL: 352*288(CIF) NTSC: 352*240(CIF) PAL: 176*144(QCIF) NTSC: 176*120(QCIF)
Video input	1 channel BNC (1.0Vp-p, 75Ω)
Video output	1 channel BNC (1.0Vp-p, 75Ω)
Frame rate	PAL: 1/16—25 FPS; NTSC: 1/16—30 FPS
Stream type	Video stream
Bit rate	32kbps~2Mbps (Self definition)
Voice interface	1 RCA linear input, 600Ω
Audio output	1 RCA output
Communication interface	1 RJ45 10M/100M UTP network port 1 RJ45 RS-232 port 1 RJ45 RS-485 port 1 RJ45 for alarm input and output
External alarm input	2 input
Relay output	2 output
Power supply	DC +12V
Power consumption	7W
Working temperature	-10°C - +55°C
Working humidity	10%--90%
Size	196mm*122mm*41.5mm
Weight	1.5Kg

Appendix C Good List

1. One piece of DS- 6000DI or IVS-170BE decoding server;
2. A CD contains client application;
3. One power supply voltage stabilizer
4. A 220V power cable;
5. A cable connecting RS232 with DTE;
6. A DTE cable