

TN0085E [NVE] How to control PTZ of IPC4100 and IPC4500.doc

Applies to: IPC4100 and IPC4500

Level: Public

Summary

This document describes to configure and to control PTZ of IPC4100 and IPC4500

Detailed Information

Figure 1 depicts the internal connection of an IPC device that embeds a PTZ module inside.

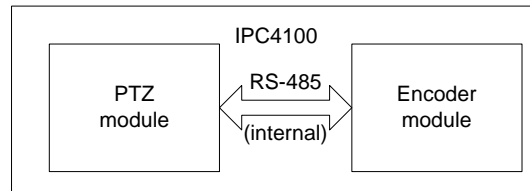


Figure 1. PTZ connection inside IPC devices

The encoder module and the PTZ module inside the IPC device are connected conceptually identical as Figure 1. Even in this case the serial ports settings should be done same as Figure 1. The encoder module in the IPC does not know the serial port setting of the PTZ module connected. If the serial port settings of the PTZ module have been changed, the serial port settings of the encoder module should be changed too.

IPC devices support various PTZ protocols such as Pelco-D, Pelco-P and so on. Please refer hardware manual for changing protocol.

Serial Port Setting

The default serial port setting of PTZ is as followings:

- Bits per second : 9600
- Data bits:8
- Parity:None
- Stop bit:1
- Flow control: None

● Changing setting through CGI

You can verify the serial port setting of encoder module. Following HTTP command is used to get current serial ports setting.

```
http://192.168.2.26/axis-cgi/admin/param.cgi?action=list&group=Serial
```

The HTTP response of a device is as following:

```
root.Serial.NbrOfPorts=2
root.Serial.Ser0.PortMode=RS232
root.Serial.Ser0.BaudRate=115200
root.Serial.Ser0.DataBits=8
root.Serial.Ser0.StopBits=1
root.Serial.Ser0.Parity=None
root.Serial.Ser1.PortMode=RS485
root.Serial.Ser1.BaudRate=9600
root.Serial.Ser1.DataBits=8
root.Serial.Ser1.StopBits=1
root.Serial.Ser1.Parity=None
```

root.Serial.Ser0 is for RS-232C serial port. *root.Serial.Ser1* is for RS-485 serial port. Since we are using RS-485 serial port, we have to check the setting of *Ser1*.

Parameter has the value as the following table.

Parameter	Value	Operation	Description
PortMode	A string RS232 RS485	Get	Hardware specific
BaudRate	1200 2400 4800 9600 192000 384000 115200	Get/Set	The baudrate used in the serial communication
DataBits	8	Get	The number of data bits

StopBits	1, 2	Get/Set	The number of stop bits. 1.5 is not supported.
Parity	None, Even, Odd	Get/Set	The parity

For example, If setting the baudrate to 9600 bps.

```
http://198.168.2.26 /axis-cgi/admin/param.cgi?action=update&Serial.Ser1.BaudRate=9600
```

• Changing setting through UDA5 API

Following UDA5 API command is used to get current serial ports setting.

```
ULONG uPortNum = 1; // RS485 serial port
DCB dcb;
BOOL rs = Net5Command(NET5_NC_GET_COMM_STATE, &uPortNum, &dcb, 0, 0);
```

As like NET5_NC_GET_COMM_STATE, you can set serial ports settings using NET5_NC_SET_COMM_STATE.

For the detailed information on Net5Command, please refer to *UDA5 Net5 API Referenece. pdf*.
For the detailed information about DCB structure, please refer to MSDN.

• Changing setting through RTSP

Following UDA5 API command is used to get current serial ports setting.

```
EXT_CMD / RTSP/1.0
CSeq: 1
CmdCount: 1
GET SERIAL_PORT
```

The RTSP response of a device is as following:

```
RTSP/1.0 200 OK
CSeq: 1
Date: Fri, Aug 24 2007 04:19:05 GMT
CmdCount: 1
GET SERIAL_PORT portid.i=0, baudrate.i=115200, databits.i=8, parity.s="none", stopbit.i=0,
flow_control.i=0, silent.s="no", portid.i=1, baudrate.i=9600, databits.i=8, parity.s="none",
stopbit.i=0, flow_control.i=0, silent.s="all"
```

Controlling PTZ

There are two way to control PTZ.

Controlling PTZ by sending raw PTZ commands

- **Sending raw PTZ command through CGI**

For the detailed information on the commands, please refer *NVE HTTP API Manual-Eng.pdf*, section *Serial communication*.

right

```
http://192.168.2.26/axis-cgi/com/serial.cgi?port=2&write=7e0120001020021f00000c7e
```

left (turbo speed)

```
http://192.168.2.26/axis-cgi/com/serial.cgi?port=2&write=7e0120001020043f00002a7e
```

stop

```
http://192.168.2.26/axis-cgi/com/serial.cgi?port=2&write=7e012000102000000000117e
```

The port number for RS-485 is '2'.

- **Sending raw PTZ command through UDA5 API**

For the detailed information on the API, please refer *UDA5 Net5 API Reference Eng.pdf*.

right

```
BYTE PTZCmd[12] = {0x7e, 0x01, 0x20, 0x00, 0x10, 0x20, 0x20, 0x1f, 0x00, 0x00, 0x0c, 0x7e};
ULONG uPortNum = 1; // RS485 serial port
ULONG uSize = sizeof(PTZCmd);
BOOL rs = Net5Command(NET5_NC_SEND_SERIAL_DATA, &uPortNum, (ULONG*)PTZCmd, &uSize, 0);
```

- **Sending raw PTZ command through RTSP**

For the detailed information on the RTSP method, please refer *NVE RTSP method Reference Eng.pdf*.

```
EXT_CMD / RTSP/1.0
CSeq: 1
CmdCount: 1
SET SERIAL_DATA portid.i=1, data.b[16]=fgEgABAgAh8AAAx+
```

The raw PTZ command for 'right' is *7e0120001020021f00000c7e*. Following Table 1 shows how 'right' command is made up.

Code	Description
7e	HDLC code (0x7e)
01	Camera ID (0x01)
20	Camera device address (0x20)
00	Sender ID (ignored)
10	Sender device address (0x10)
20	Movement command (0x20)
02	Movement code (right: 0x02, left: 0x04, top: 0x08, down: 0x10)
1f	Pan speed
00	Tilt speed
00	Dummy
0c	Checksum
7e	HDLC code

Table 1. Dissection of 'right' command

Controlling PTZ by predefined PTZ commands

The predefined PTZ command can be ?? by cgi command.

You should check and select the PTZ protocol you want to use as follow cgi.

Syntax

```
http:// 198.168.2.26/enc-cgi/ptz/ptz.cgi?<parameter>=<value>[&<parameter>=<value>]
```

with the following parameters and values

<parameter>=<value>	Values	Description
whoami	-	Returns PTZ protocol that is selected.
setprotocol=<string>	cutsom02 or pelco-d	Set PTZ Protocol to use.

* custom02 is CyberScanII.

Example

Change the built-in protocol to Pelco-d

```
http://192.168.2.26/enc-cgi/ptz/ptz.cgi?setprotocol=pelco-d
```

Note : You should match the protocol selected and DIP switch setting of IPC4100 and IPC4500.Please refer IPC4100 Hardware Manual and IPC4500 Hardware Manual, section DIP Switching Setting.

Syntax

```
http://192.168.2.26/enc-cgi/ptz/ptz.cgi?<parameter>=<value>[&<parameter>=<value>]
```

with the following parameters and values

Pan/Tilt controls require the speed parameter value. In turbo mode, a camera move faster than a camera in normal mode at its highest level. Both turbo mode and normal mode have the same speed levels for increasing and decreasing speed ranges.

<parameter>=<value>	Values	Description
action=<string>	write, ctrl	PTZ Operation mode write : normal mode ctrl : turbo mode
cmd=<string>	<cmd string>	PTZ Control Commands See the Table PTZ command below
speed=<int>	1~6	Camera movement speed

Example

Tilt the camera down with a medium speed

```
http://192.168.2.26/enc-cgi/ptz/ptz.cgi?action=write&cmd=down&speed=3
```

Command	Description
left	Pan the camera left.
right	Pan the camera right.
up	Tilt the camera up
down	Tilt the camera down.
leftup	Move the camera left up
rightup	Move the camera right up
leftdown	Move the camera left down
rightdown	Move the camera right down
stop	Stop to move
irisopen	Open the Iris
irisclose	Close the Iris.
focusfar	Focus far
focusnear	Focus near
zoomwide	Zoom Wide (Zoom out)
zoomtele	Zoom tele (Zoom in)
setpresetXY	Set the present position as preset XY.
gotopresetXY	Go to the preset XY.
clearpresetXY	Delete the preset XY.
patternstartXY	Start defining pattern XY
patternstop	Stop defining current pattern
patternXY	Run the pattern XY.
scanstartXY	Start defining the scan XY.
scanstop	Stop the current scanning being defined.
scanXY	Run the scan XY.
tourXY	Run the tour XY.
presetmenu	Call the preset menu.
tourmenu	Call the tour menu.
patternmenu	Call the pattern menu.
scanmenu	Call the scan menu.
menuon	Call the menu
menuoff	Hide the menu.
menu	Toggle the menu status (If menu is already shown, it will be hidden and if hidden, it will be shown.)
clear	Clear the menu screen. Selection on the OSD will be cancelled.
enter	Selection key on the OSD menu
home	Move to the home position

Revision History

Revision	Date	Description
A	2007-08-24	Created.