TN0080E [NVE] Sending PTZ commands though HTTP command.doc

Applies to: NVE/IPC Series
Level: Public

Summary

Sometimes it is needed to send raw PTZ commands rahter than predefiend commands such as left, right, go to preset, and so on. In this article, IPC4100 (indoor PTZ type IP camera) is used as a PTZ device. IPC4500 (vandal proof outdoor PTZ type IP camera) also can be used.
In this article, we assume that the IPC4100 device has a static IP address, 192.168.2.26. You have to modify the IP address to your device's IP address.

Detailed Information

Why are the serial port settings important?

Usually a PTZ device is connected to a NVE as the following Figure 1.

Figure 1. PTZ connection with a NVE

Since a PTZ device and a NVE are connected with a serial port, the serial port settings of the two devices should be matched. Normally the NVE is set according to the serial port setting of the PTZ device.

Figure 2 depicts the internal connection of an IPC device that embeds a PTZ module inside.
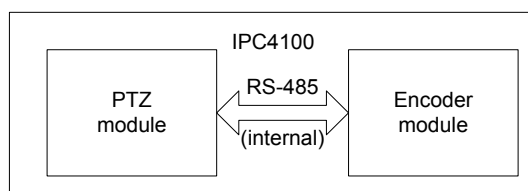

Figure 2. PTZ connection inside IPC devices

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

PTZ module of IPC4100

The default serial port setting of PTZ module of IPC4100 is as followings:

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

The encoder module and the PTZ module is connected through RS-485 line of the encoder module.

Serial ports setting

You also have to 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*. The serial port setting is properly configured.

Sending raw PTZ commands through HTTP command

There are three ways of sending raw PTZ commands. Any way would be fine. In this article, we will use *write* command. For the detailed information on the commands, please refer *NVE HTTP API Manual-Eng.pdf*, section *Serial communication*.

We will use CYBER SCAN II protocol to control IPC4100. You will find CYBER SCAN protocol specification, *CYBER_SCAN_PROTOCOL_manual_v204R.pdf* as an additional document.

Followings show examplar raw PTZ commands.

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'.

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	Tili speed
00	Dummy
0c	Checksum
7e	HDLC code

Table 1. Dissection of 'right' command

CYBER SCAN I or CYBER SCAN II

This section applies only to IPC4100 and IPC4500.
There are three ways to identify the protocol used in IPC4100/IPC4500.

DIP switch setting

Please refer IPC4100 Hardware Manual-Eng.pdf, section DIP Switch Setting.

Boot-up screen

When the camera boots up after it is powered on, it displays boot-up screen as the following Figure 3.

Figure 3. Boot-up screen of camera

PROTOCOL shows CYBER SCAN II protocol is set.

HTTP command

HTTP command can be used whether the protocol is CYBER SCAN II or not. Send following HTTP command to a device.

http://192.168.2.26/axis-cgi/com/serial.cgi?port=2&write=7e0120001041707e&read=16&wait=1

If the HTTP response is as follows, the protocol is CYBER SCAN II.

#7E#00#10#01#20#41#00#00#00#00#00#40#00#00#30#7E#

If the protocol is other than CYBER SCAN II, the HTTP response would be as the following.

#

Revision History

Revision	Date	Description
A	2007-07-12	Created.
B	2007-07-19	Added section 'Why are the serial …'.