

POS function

Galaxy NV Series POS-DVR surveillance system is a professional surveillance integrated with POS system. By bringing video and POS transaction data together, the POS-DVR surveillance system provides visual text information to reduce shrinkage and prevent asset from losing.

Galaxy NV Series DVR System can integrate any POS devices that send **plain text data based on ASCII code** through serial port (RS-232-C) or network (TCP/IP).

When text information was sent to DVR through COM port or network, user can set filter rule according to the data information. After correct settings, DVR will overlay text information over the video image.

1.1 Connection

Galaxy NV Series DVR System supports two methods to receive the data from POS system: Serial port and network.

Result from that, POS system can send data through serial port or network directly, or the combination of them by using converter.

1.1.1 Direct COM port connection

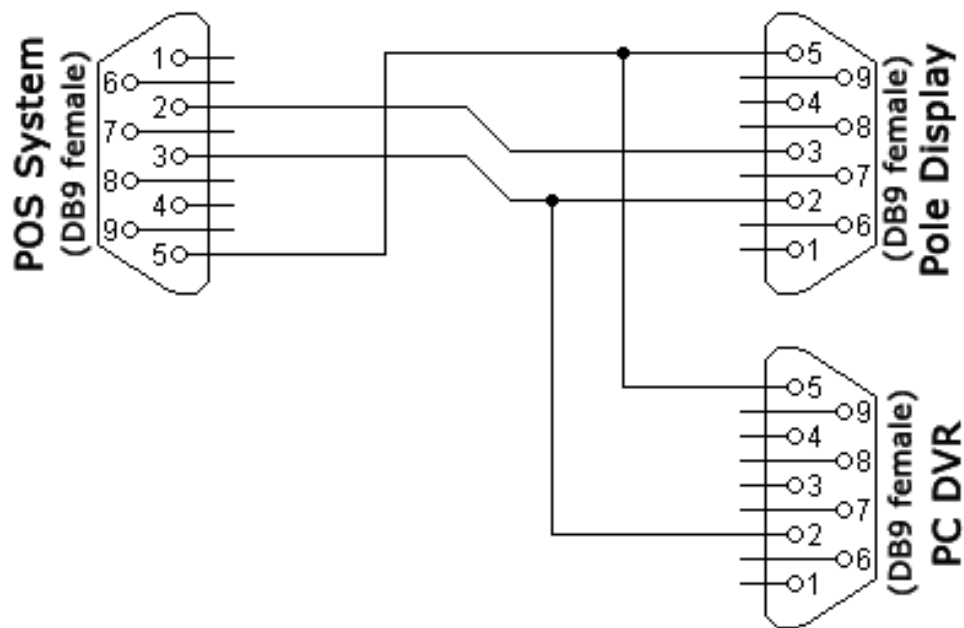
For direct COM port connection, we always recommend user send the data for pole display to our POS system, since it is real time and will not send much data at a time, which will cause the difficulty to read the fast scroll text over the video. And use should use cross-line cable to connect two sides.

If the POS system support copying the data for pole display to another COM port, user can connect that COM port with the PCDVR directly.

If the POS system does not support copying the data for pole display to another COM port, user can make a spy monitor cable to divide the data from POS to pole display (RS-232-C serial port connection) to two terminals, one for pole display and the other for PCDVR.

Note: before you make the DIY spy cable, please consult your POS supplier to be sure the pin definition of the RS-232-C cable between POS System and Pole Display.

1. Half duplex RS232 spy cable without handshaking



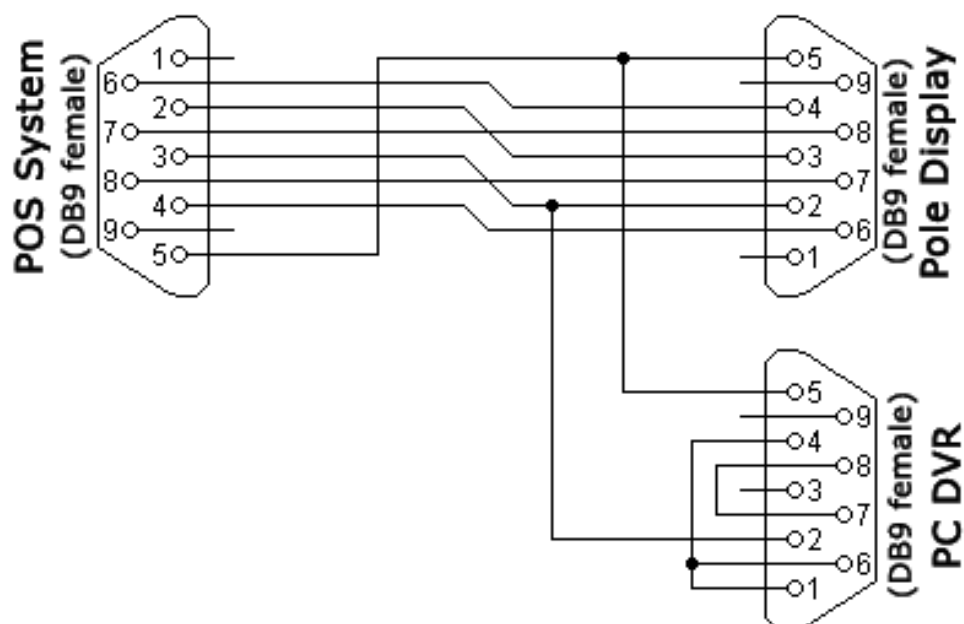
Half duplex RS232 spy cable without handshaking

PCDVR	Function
3 (POS system) → 2*	Tx → Rx
5 (POS system) → 5	Signal Ground

** Since we just need the data from POS system to Pole display, so we just connect the pin 3(Transmit data) of POS system with pin 2 (Receive data) of PCDVR. Next is the same.*

2. Half duplex RS232 spy cable with handshaking

Our PCDVR does not need any flow controls for direct COM port, including software and hardware flow control. If the POS system need flow control, user should do some changes as below:



Half duplex RS232 spy cable with handshaking

PCDVR	Function
3 (POS system) → 2	Tx → Rx
5 (POS system) → 5	Signal Ground
1 + 4 + 6	DTR → CD + DSR
7 + 8	RTS → CTS

For more detailed information, please refer to: <http://www.lammertbries.nl/comm/cable/RS-232.html>.

Since serial cable can only be used in near distance, when the distance is too far, use can use direct network connection or RS232 to network connection:

1.1.2 RS232 to network connection

For this connection, we supply a converter for client to convert RS232 to network: NC6XX series IO-Server.

Our IO server adopts RJ45 standard RS-232-C interface, for the conversion between DB9 and RJ45, please refer to corresponding manual, here take NC602 for instance:

NC602 (RJ45)	POS System (DB9)
1 TXD	2 RXD
2 RXD	3 TXD
3 RTS	8 CTS
4 CTS	7 RTS
5 DSR	4 DTR
6 GND	5 GND
7 DTR	6 DSR
8 DCD	1 DCD

1.1.3 Direct network connection

Generally speaking, since it will be too difficult to read the text over video, we do not recommend user to use this connection. It's too quick. However, it's easier to set.

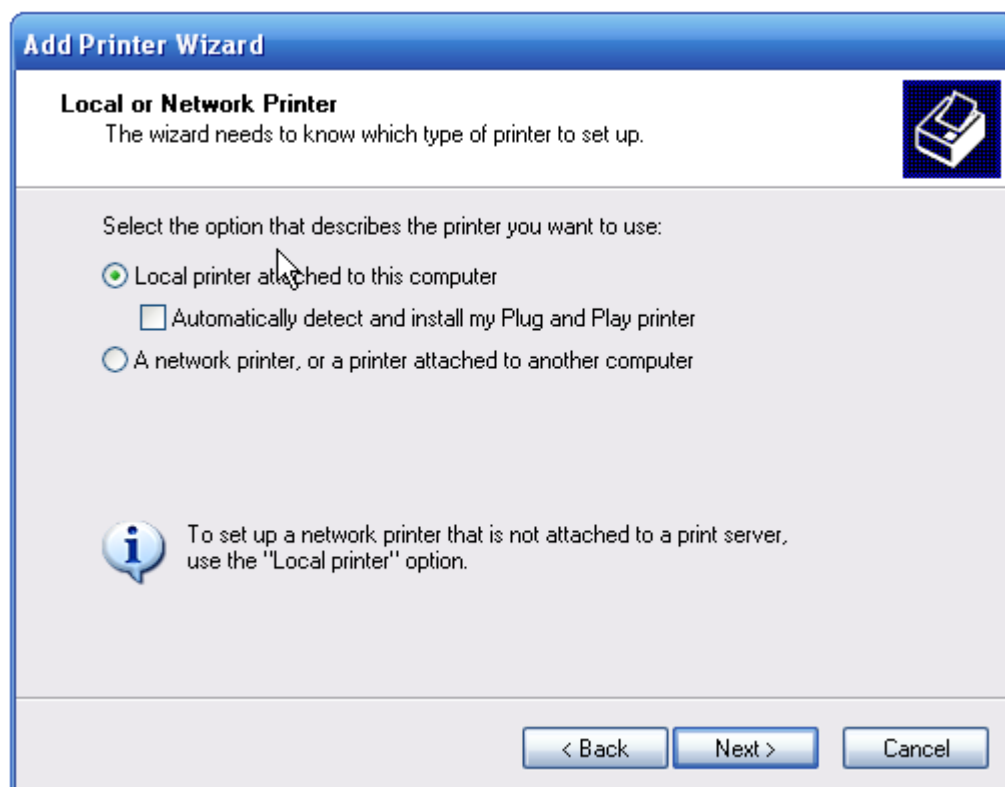
Please note you can't put your local and network printer on the same computer. Otherwise, you will get a print error. You should send your print data form network printer, then, it will be printed to local printer. And then, the print data will be displayed on the DVR screen.

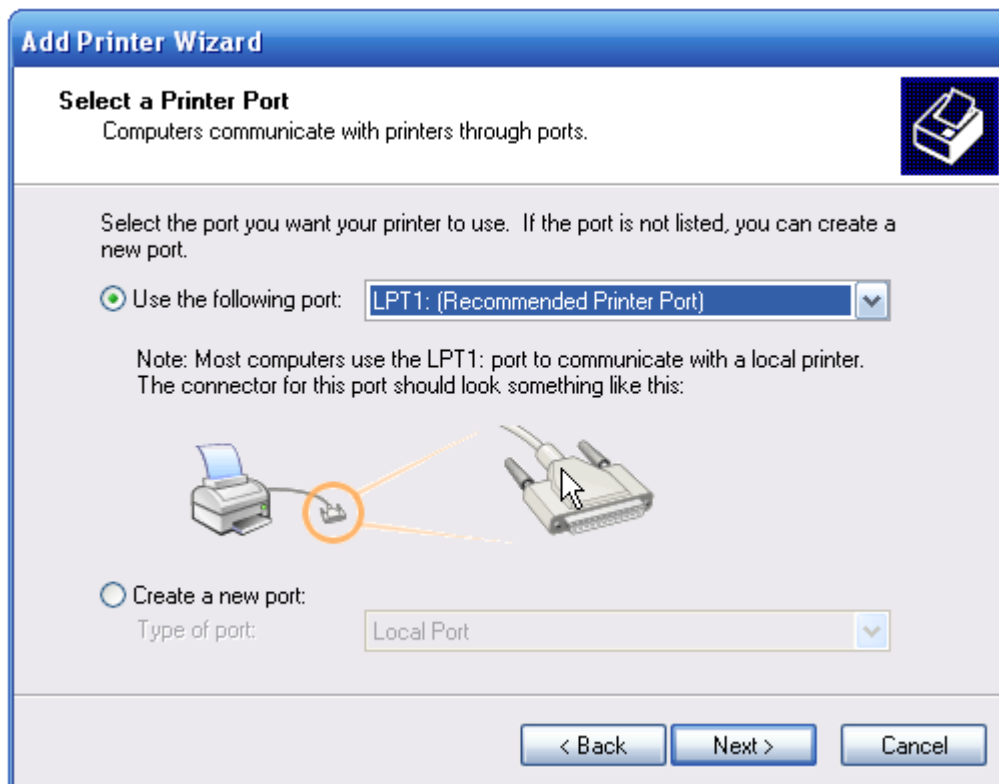
1. Install Generic/Text Only printer driver on the PC you run Galaxy NV Series DVR (such as 192.168.0.102)

The steps to set local printer are as below:

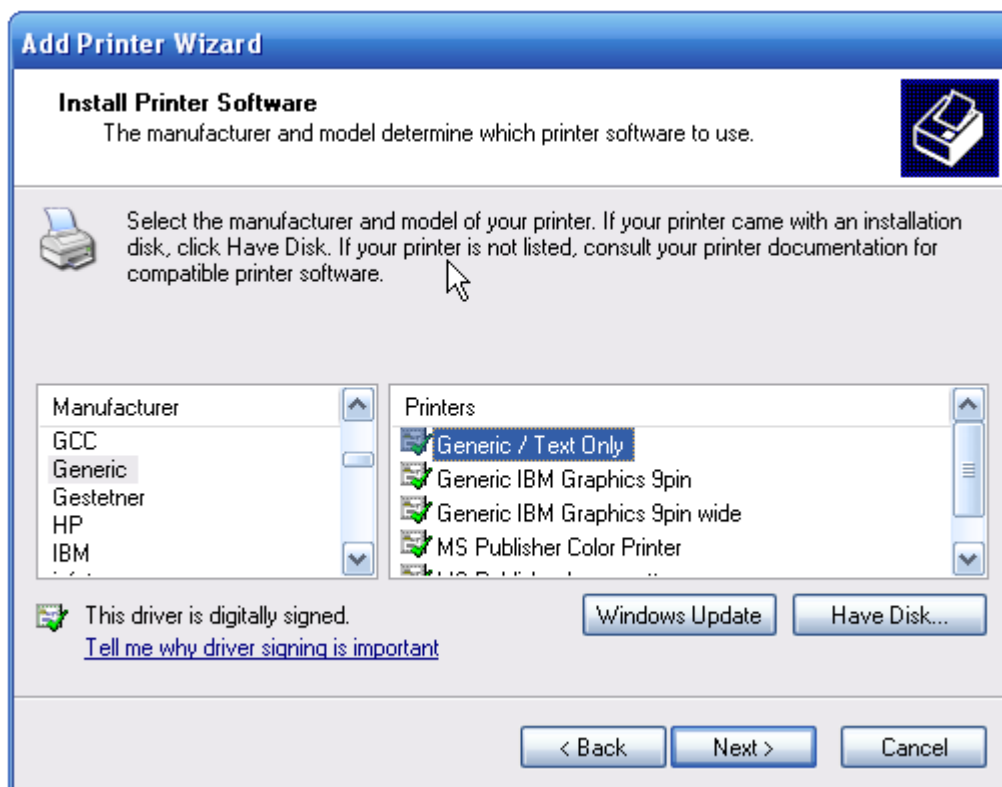


Click "Add Printer" to enter the following GUI. Then, operate as the pictures shown.



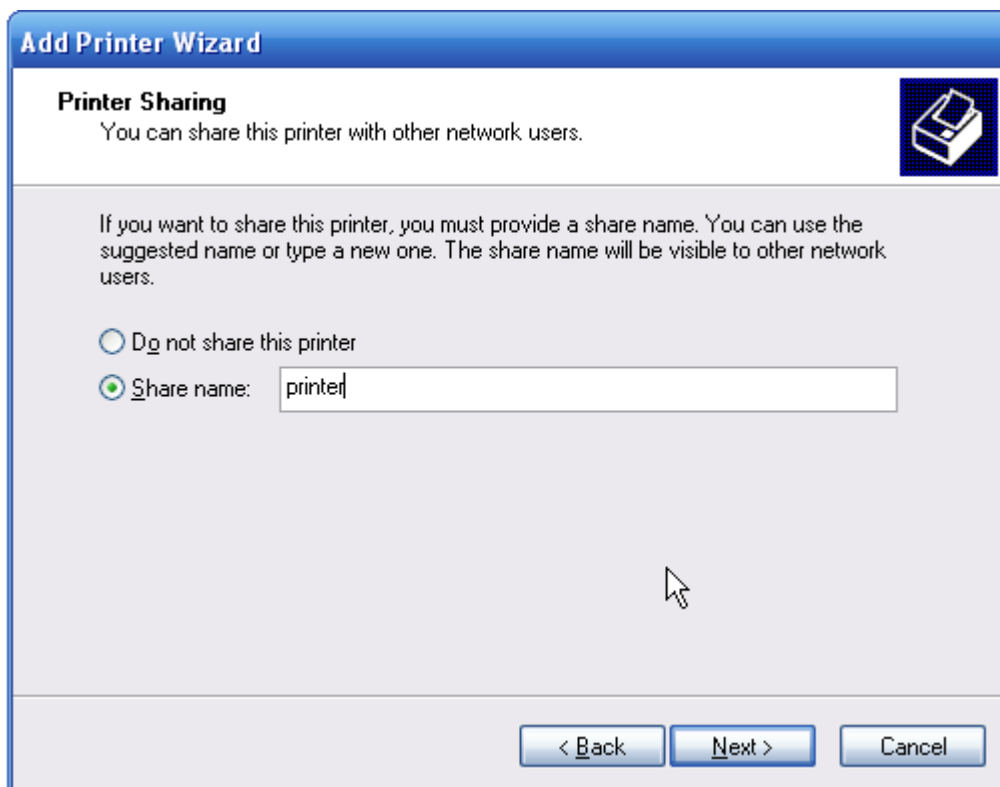


Select "Generic"→"Generic/Text Only" and then click "Next".

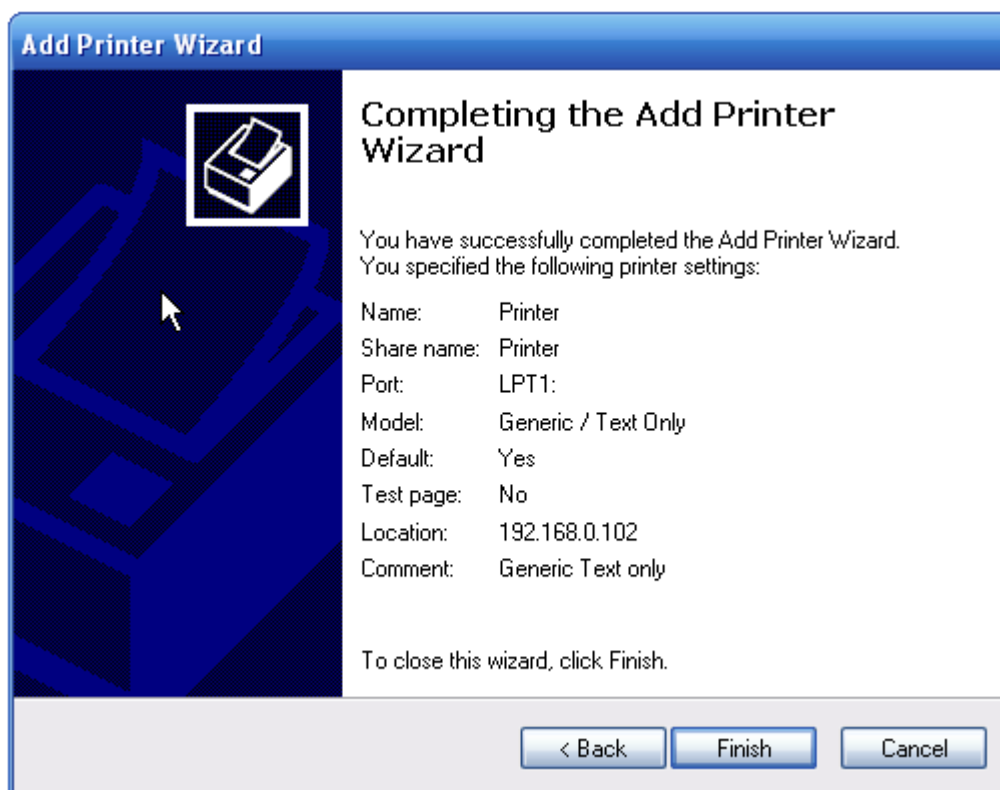


Select "Generic"→"Generic / Text Only"

Fill in a simple share name for your local printer. It will be used again in the later operation. So please remember it.



Share the “printer”



Now you can regard the Galaxy NV Series DVR as a shared printer.

2. Add the printer on the PC that runs as a network printer for POS (such as 192.168.0.192) and set it as the default printer for POS.


Add Printer Wizard

Local or Network Printer
The wizard needs to know which type of printer to set up.

Select the option that describes the printer you want to use:

☐ Local printer attached to this computer
☒ Automatically detect and install my Plug and Play printer

☒ A network printer, or a printer attached to another computer

 To set up a network printer that is not attached to a print server, use the "Local printer" option.

< Back Next > Cancel

Add a network printer

Add Printer Wizard

Specify a Printer
If you don't know the name or address of the printer, you can search for a printer that meets your needs.

What printer do you want to connect to?

☐ Browse for a printer

☒ Connect to this printer (or to browse for a printer, select this option and click Next):

Name:

Example: \\server\printer

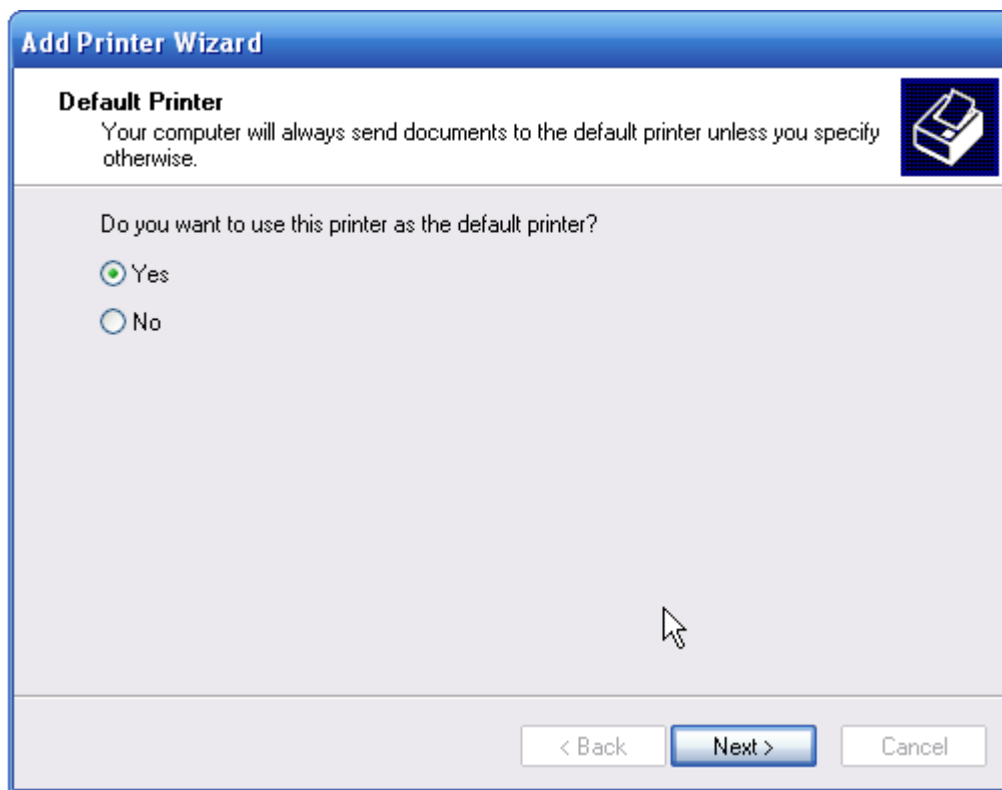
☐ Connect to a printer on the Internet or on a home or office network:

URL:

Example: http://server/printers/myprinter/.printer

< Back Next > Cancel

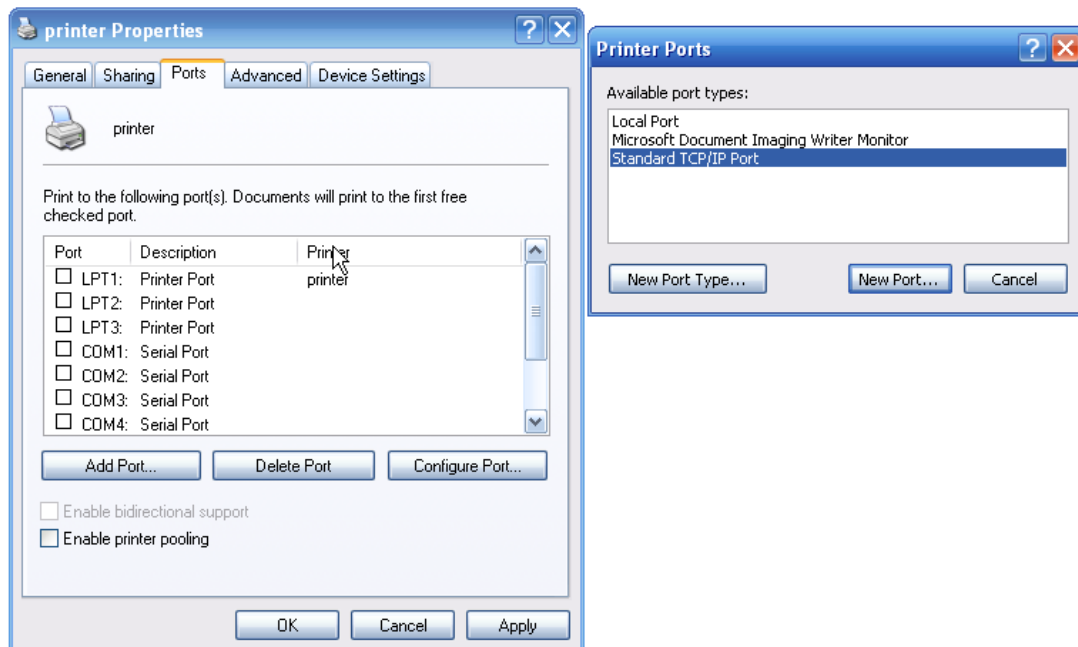
Add the printer shared in 192.168.0.102 (Galaxy NV Series DVR)



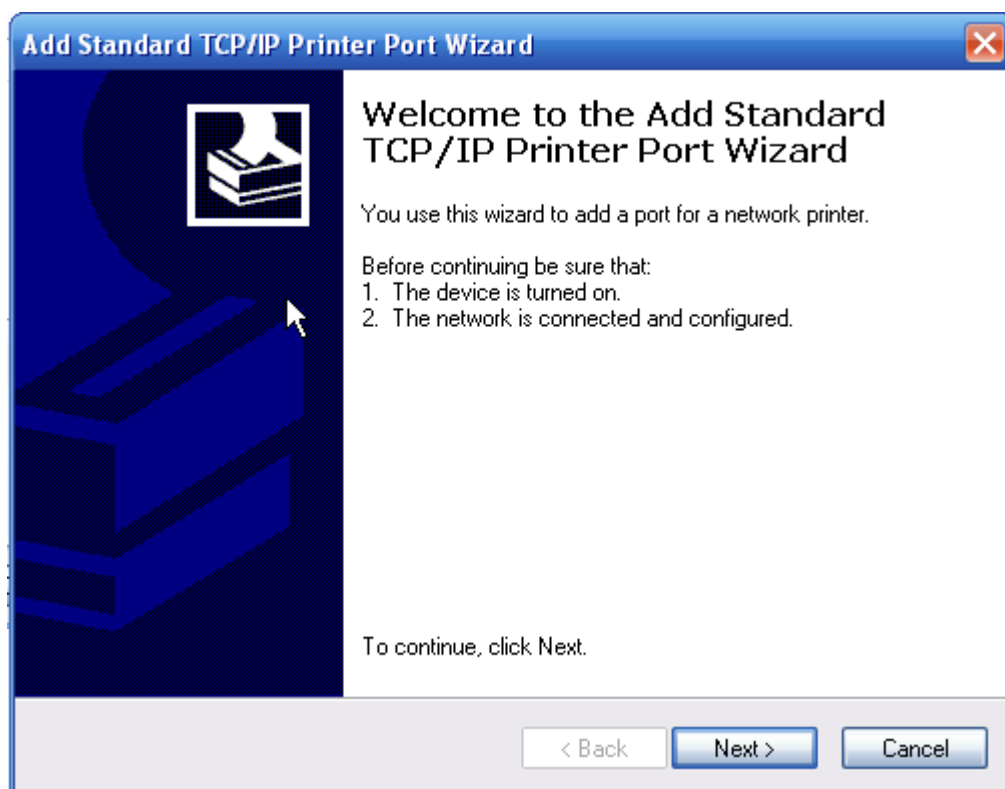
Set the shared printer in 192.168.0.102 as the default printer

3. Add a standard TCP/IP Port for default printer of POS:

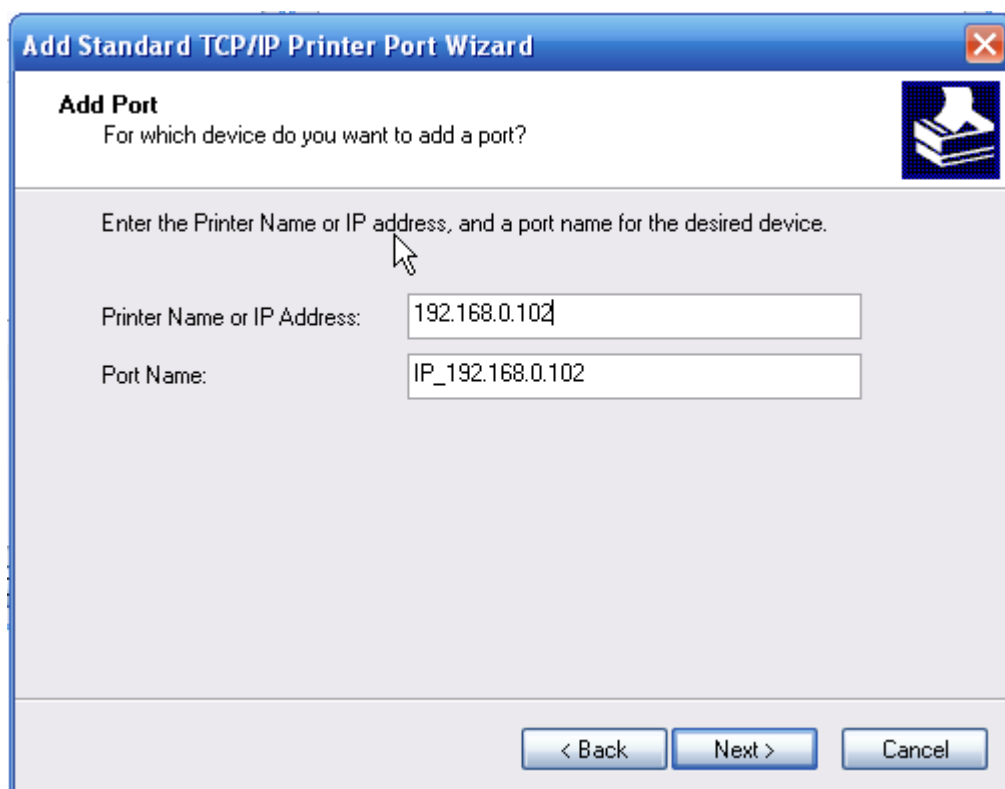
Single-right-click the printer name to enter its properties when it's added successfully. Click "Ports"→ "Add Port", double click "Standard TCP/IP Port" to get the add port GUI shown in the next page.



Add Standard TCP/IP Port



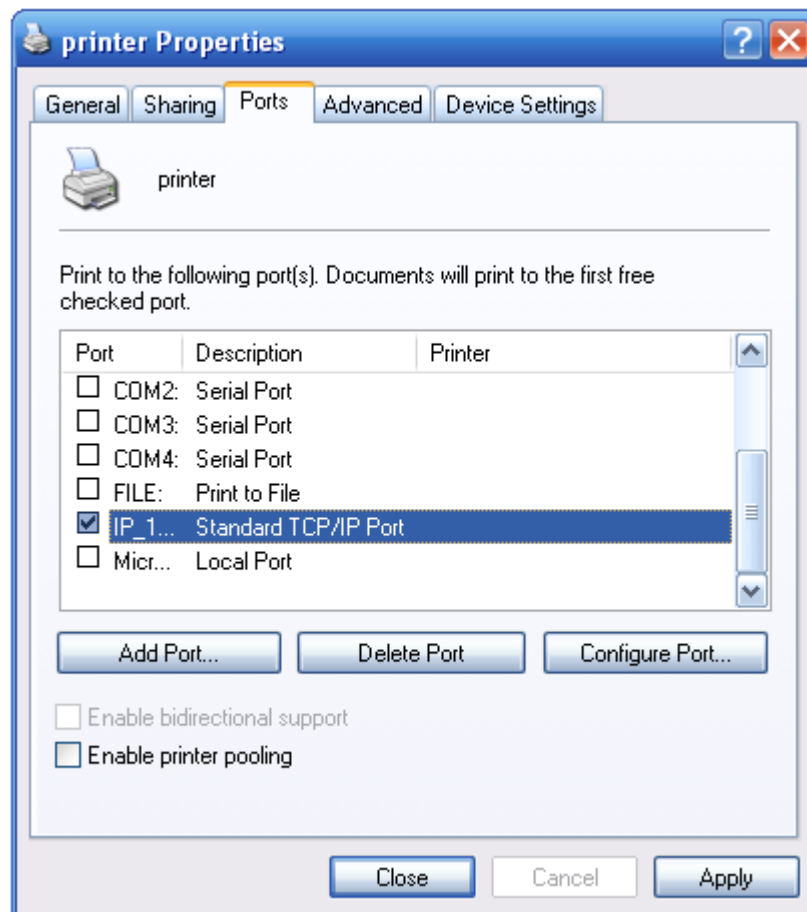
Fill in the IP of your local printer you added just now:





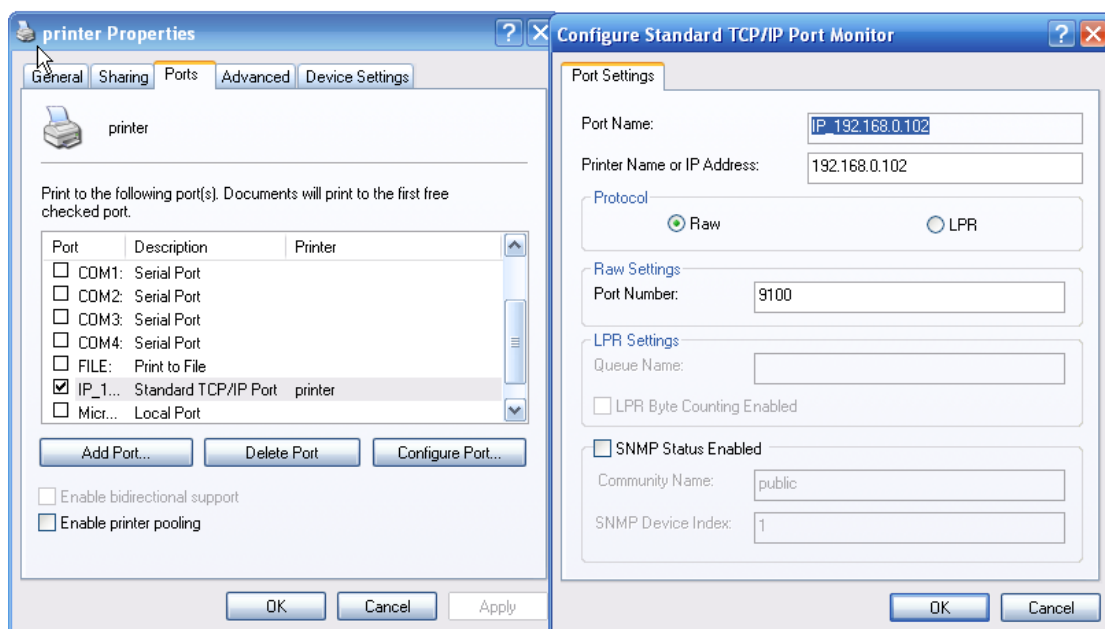
Network printer: IP 192.168.0.102, default port: 9100

When TCP/IP printer port is added successfully, you will see the following GUI when you enter the properties of your network printer again.



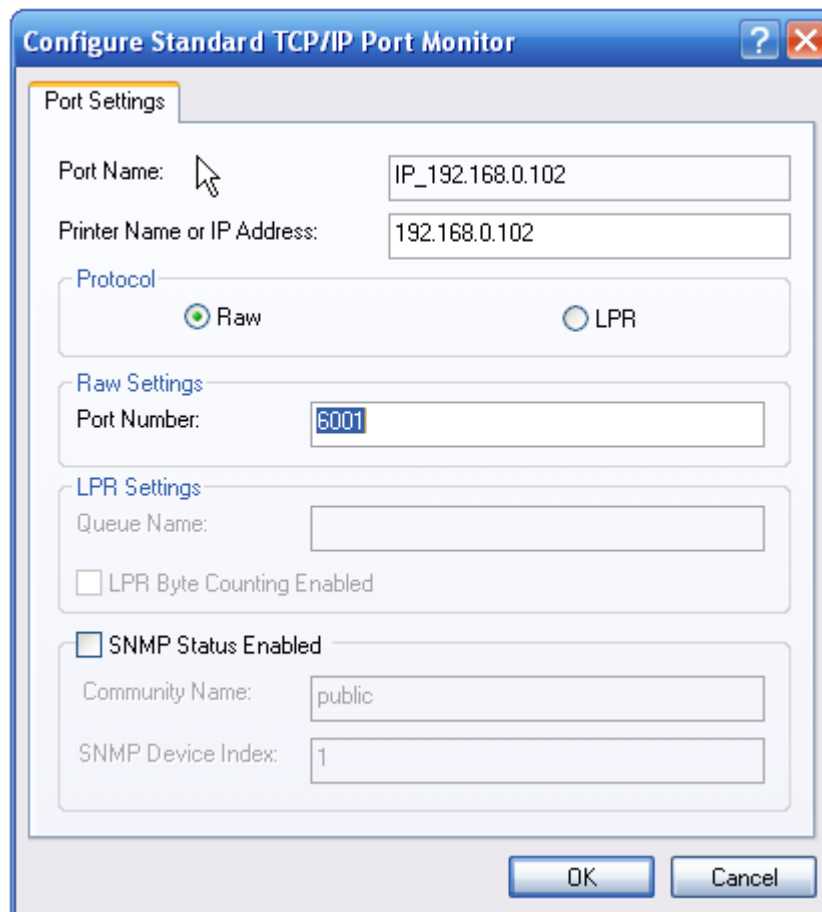
The result of setting

You can click “Configure Port” to change the default port (9100) to others when the TCP/IP port is selected.



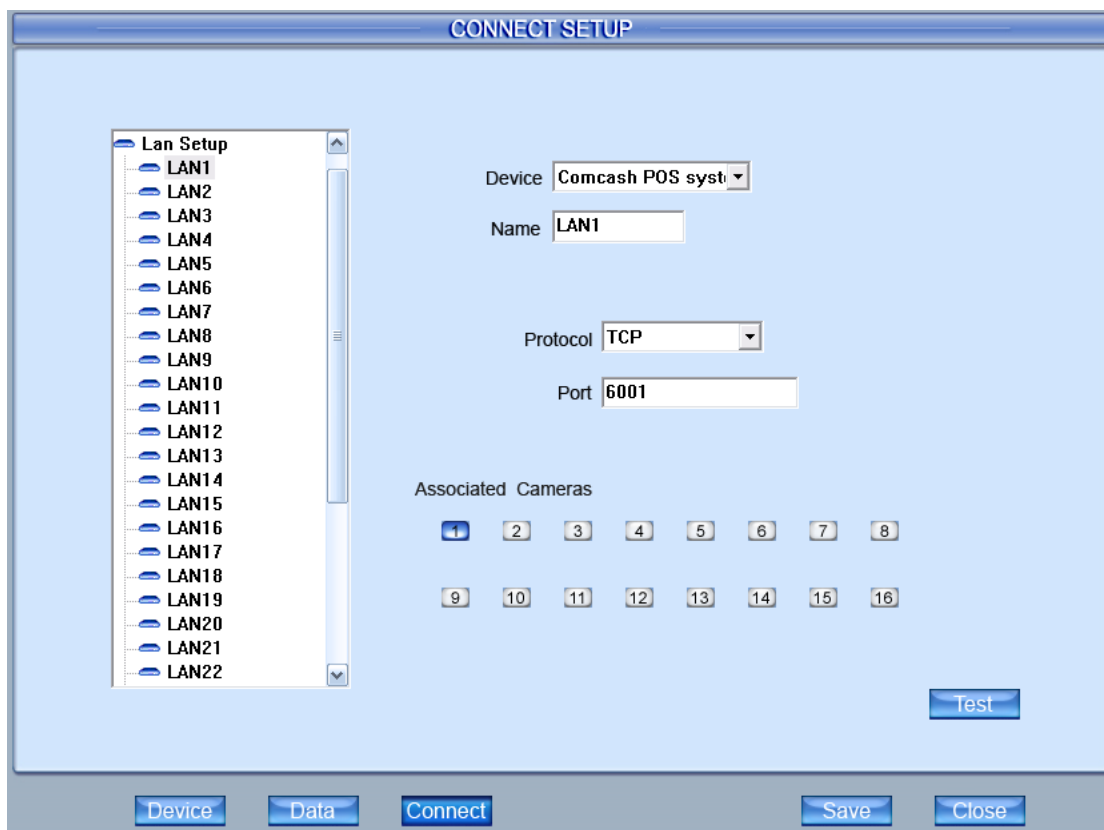
Configure the standard TCP/IP Port

For example, you can change the port to 6001. Then, you have to set the POS function port in DVR to 6001.



Change the default port 9100 to 6001

4. Set a port (such as 6001) to get text information from POS under POS setup interface in Galaxy NV Series DVR.



Set the port 6001 in Galaxy NV Series DVR to receive the text information from POS

The port 6001 is the port for DVR to receive the information from POS. Also, user can change the receive port of DVR to 9100, which should be the same

as the default network printer port.



The result after all the above settings (Network print from POS to DVR)

1.2 POS setup

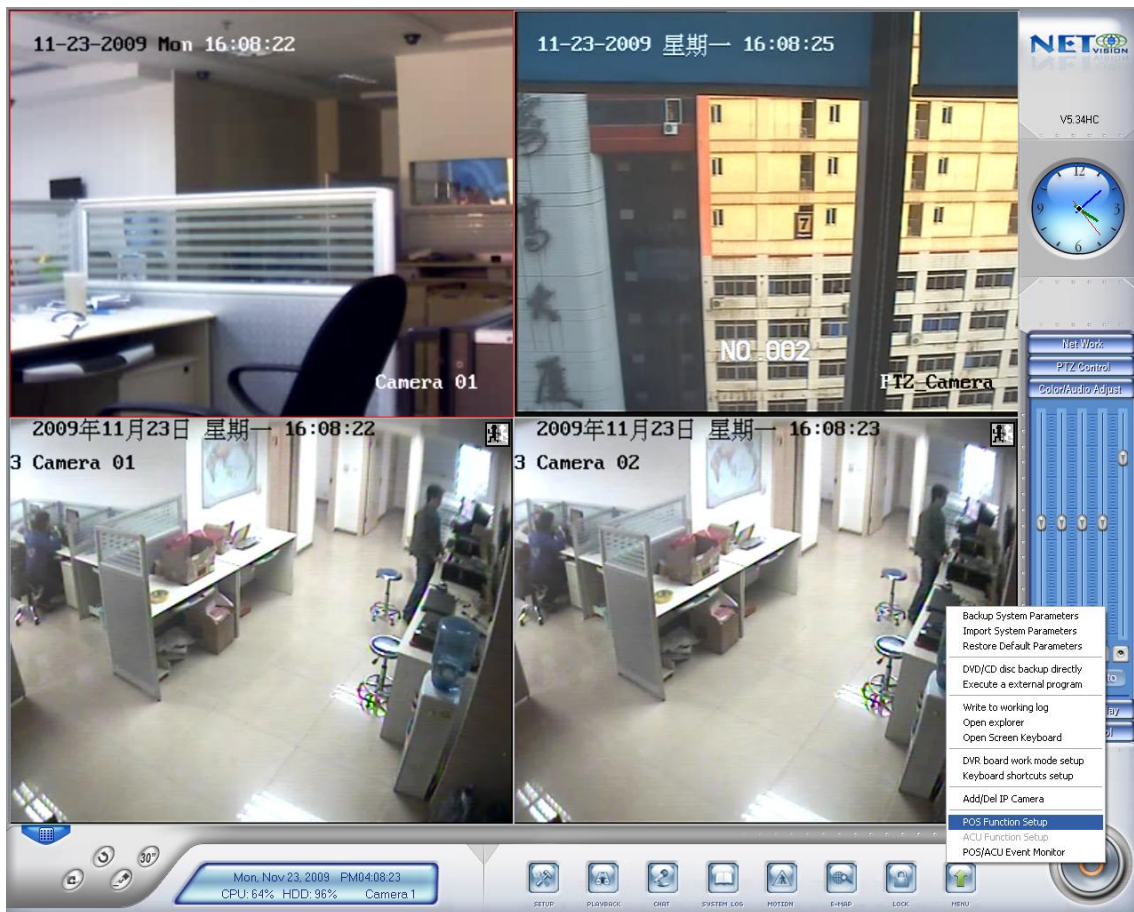
Firstly, you should enable "POS Function" in system setup. The function will take effect after the software restarted.

SYSTEM SETUP			
Number of Channels	1	Sensor Inputs(DI)	8
Audio Monitoring	Disable	Use E-Map	Disable
DI/DO Port		System Keystroke	Allow
DI/DO Device	NV7608	Alarm Beep	Disable
POS Function	Enable	Date Format	Sat Jan 22, 2005
ACU Function	Disable	Time Format	PM 03:12:18
Language	English	HS Card 4CIF Mode	Disable
Sensor outputs(DO)	8	Camera Sequencing Interval	2 Sec
		Save Log For	30 Days
		Alarm Camera popup Interval	Sec
		Default Camera type	NTSC
		Grab Picture Save to	D:\Grab
		Auto Upgrade	Disable

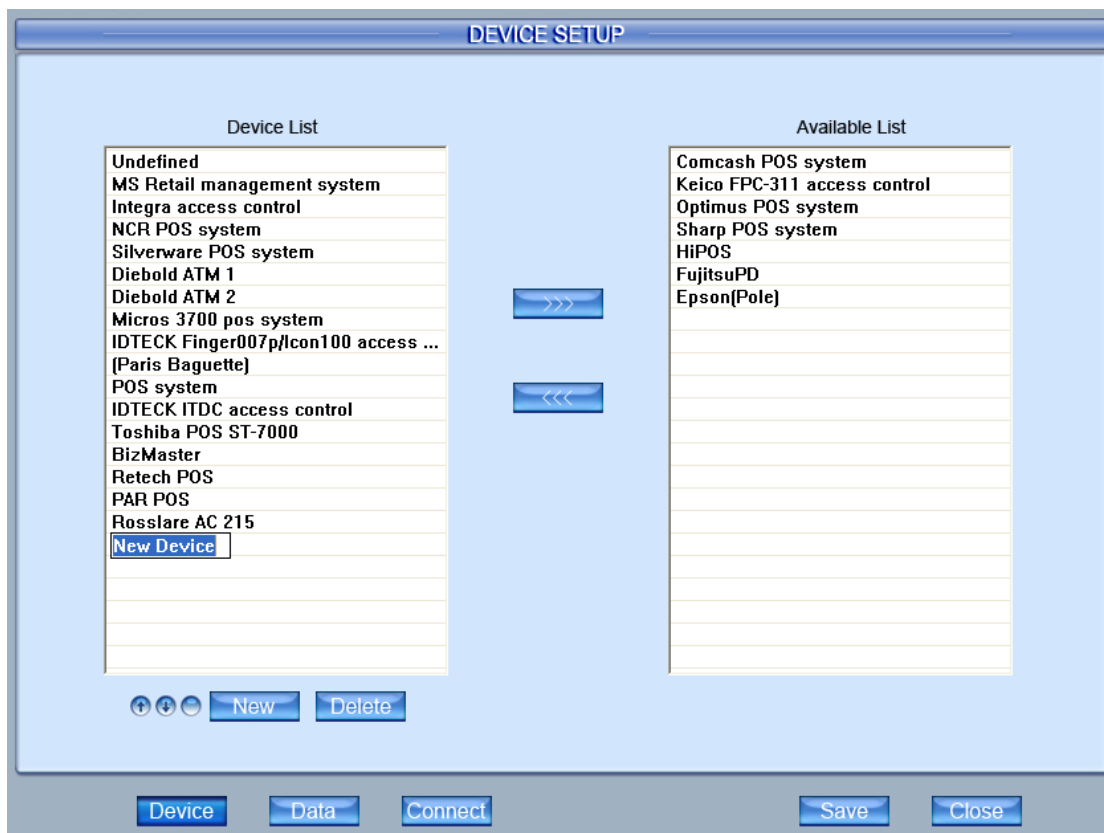
NETWORK SETUP			
Remote Connection	Enable	Remote Connect Port	5100
PDA Connection	Disable	PDA Connect Port	5101
Automatic Alarm Notification Client IP		Alarm Send Port	5300
Use DNS	Disable	Remote Buffer Priority	smooth
		Web Server Port	80
		Permit Max Connect Video Num	128

BOOT SETUP	
<input checked="" type="radio"/> Exit to Windows	<input type="radio"/> Exit and Shutdown
<input type="radio"/> Auto Shutdown	0 H 0 M
Auto Reboot Date(Mon - Sun)	1 2 3 4 5 6 7
Reboot at	0 H 0 M

Then open POS function setup interface by clicking "POS Function Setup" in system menu.



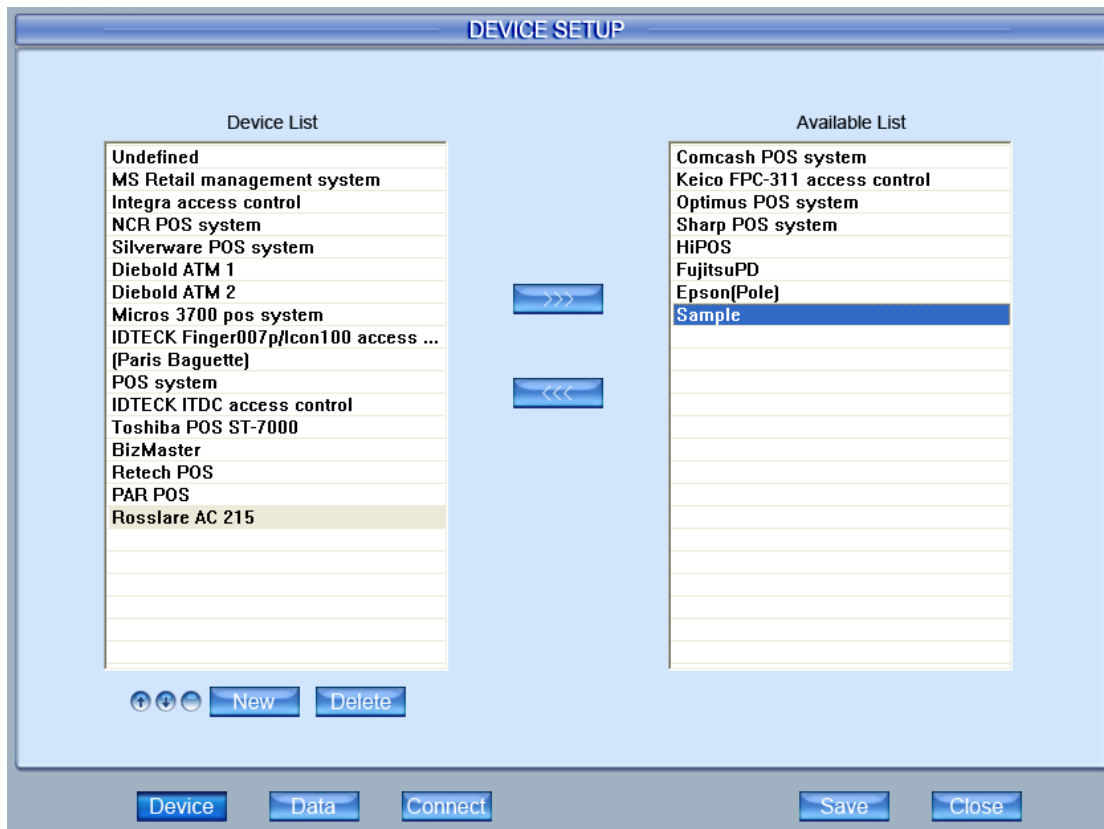
1.2.1 Add/delete device



Open **POS Setup** interface and press **Device** button, user can add/delete device in the left list:

Press **New** button, system will add a device named "**New Device**", user can single-left-click to select it and again to change its name as you like.

After that, user can press the arrow in the middle to add them to the available list.

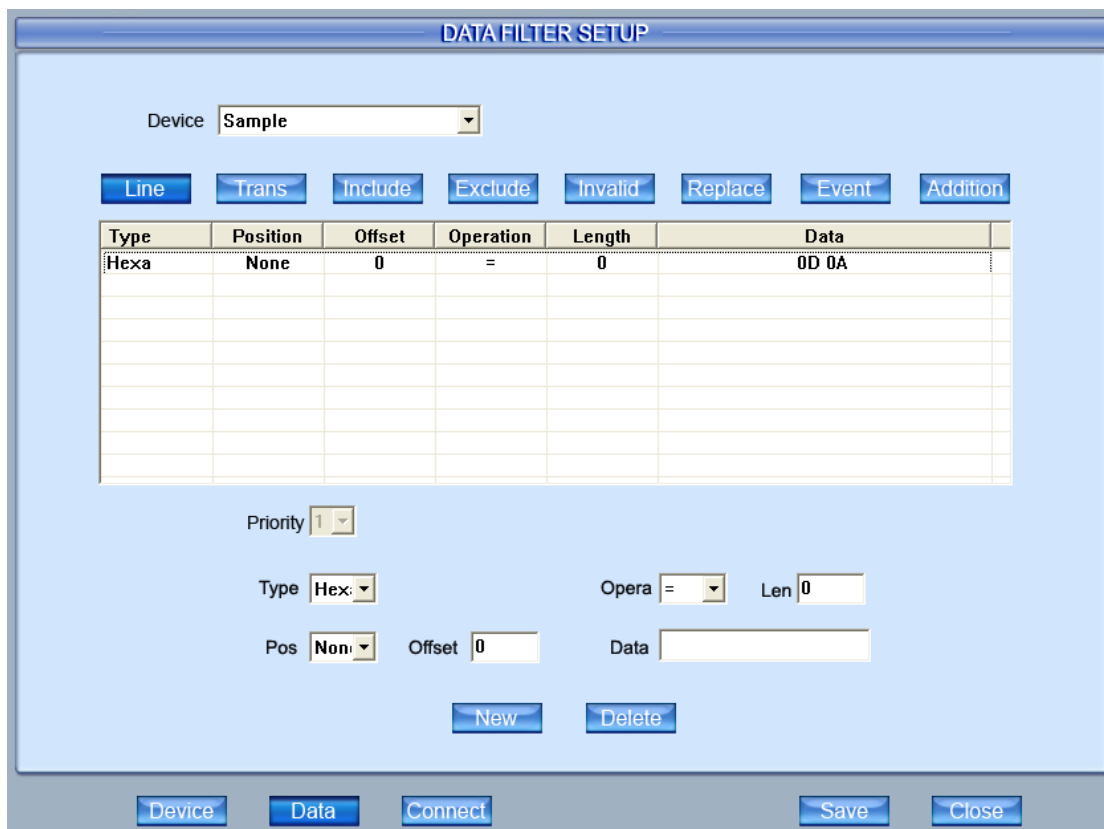


Add a new device named "Sample" to available list

1.2.2 Data setup (Text filter rules)

Press **Data** button and select the device (you want to set, such as **Sample**) to set pos text filter rule:

1. Line Break



Set Line Break

Set a rule for separating each line.

Priority: Default priority 1, user can't modify it.

Type: Choose a type of data. Data types must be either 'Hex' or

'ASCII'.

Position/Offset: Select a position to search the data string (ex. Start to search from begging ---- not useful right now)

Operation: Select an operator to be used when comparing 'Data' with data from POS.

Data: Set Data that will trigger the operation.

When system receives the character or string, which is equal to the setting here, system will process these characters as below:

Only line break character or string set here – discard;

Any other characters and string before line break character or string set here – discard line break character or string and display the other characters or strings and change to new line.

2. Transaction Break

The screenshot shows the 'DATA FILTER SETUP' window. At the top, there is a 'Device' dropdown menu set to 'Sample'. Below this are several buttons: 'Line', 'Trans', 'Include', 'Exclude', 'Invalid', 'Replace', 'Event', and 'Addition'. The 'Trans' button is selected. A table with 6 columns (Type, Position, Offset, Operation, Length, Data) is shown. The first row is highlighted with 'Ascii', 'None', '0', '=', '0', and 'Thanks'. Below the table, there are fields for 'Priority' (set to 2), 'Type' (set to 'Asci'), 'Opera' (set to '='), 'Len' (set to 0), 'Pos' (set to 'Non'), 'Offset' (set to 0), and 'Data' (set to 'Thanks'). At the bottom of the window are buttons for 'Update', 'Delete', 'Device', 'Data', 'Connect', 'Save', and 'Close'.

Type	Position	Offset	Operation	Length	Data
Ascii	None	0	=	0	Thanks

Set Transaction Break

Set a rule for separating each Transaction.

Priority: Set the priority of this rule.

Type: Choose a type of data. Data types must be either 'Hex' or 'ASCII'.

Position/Offset: Select a position to search the data string (ex. Start to search from begging ---- not useful right now)

Operation: Select an operator to be used when comparing 'Data' with data from POS.

Data: Set Data that will trigger the operation.

3. Include

DATA FILTER SETUP

Device Sample

Line Trans Include Exclude Invalid Replace Event Addition

Type	Position	Offset	Operation	Length	Data
Hexa	None	0	=	0	32

Priority 6

Type Hex Opera = Len 0
 Pos None Offset 0 Data 32

Update Delete

Device Data Connect Save Close

Set a line to be displayed, which include the specific character or string

Set a rule for a line with a string or character to be displayed.

Priority: Set the priority of this rule.

Type: Choose a type of data. Data types must be either 'Hex' or 'ASCII'.

Position/Offset: Select a position to search the data string (ex. Start to search from begging ---- not useful right now)

Operation: Select an operator to be used when comparing 'Data' with data from POS.

Data: Set Data that will trigger the operation.

4. Exclude

DATA FILTER SETUP

Device Sample

Line Trans Include Exclude Invalid Replace Event Addition

Type	Position	Offset	Operation	Length	Data
Ascii	None	0	=	0	Welcome

Priority 5

Type Asci Opera = Len 0
 Pos None Offset 0 Data Welcome

Update Delete

Device Data Connect Save Close

Set a line to be discarded, which include the specific character or string

Set a rule for a line with a string or character to be not displayed.

Priority: Set the priority of this rule.

Type: Choose a type of data. Data types must be either 'Hex' or 'ASCII'.

Position/Offset: Select a position to search the data string (ex. Start to search from begging ---- not useful right now)

Operation: Select an operator to be used when comparing 'Data' with data from POS.

Data: Set Data that will trigger the operation.

5. Invalid

DATA FILTER SETUP

Device Sample

Line Trans Include Exclude Invalid Replace Event Addition

Type	Position	Offset	Operation	Length	Data
Ascii	None	0	=	0	Wine

Priority 7

Type Ascii Opera = Len 0
 Pos None Offset 0 Data Wine

Update Delete

Device Data Connect Save Close

Set the character or string to be discarded

Set a rule to discard a string or character

Priority: Set the priority of this rule.

Type: Choose a type of data. Data types must be either 'Hex' or 'ASCII'.

Position/Offset: Select a position to search the data string (ex. Start to search from begging ---- not useful right now)

Operation: Select an operator to be used when comparing 'Data' with data from POS.

Data: Set Data that will trigger the operation.

6. Replace

DATA FILTER SETUP

Device Sample

Line Trans Include Exclude Invalid Replace Event Addition

Type	Old data	Type	New data
Ascii	Wine	Ascii	Alarm

Priority 3

Type Ascii Type Ascii

Old Wine Data Alarm

Update Delete

Device Data Connect Save Close

Set the character or string to be replaced

Set a rule to replace a word or character to another

Priority: Set the priority of this rule.

Type: Choose a type of data. Data types must be 'Hex' or 'ASCII'.

Old: Enter data string that needs to be replaced.

Data: Enter a new data string that will take a place of the Old Data.

7. Event

DATA FILTER SETUP

Device Sample

Line Trans Include Exclude Invalid Replace Event Addition

Type	Data	Notify
Ascii	Wine	M

Priority 4

Type Ascii Data Wine

☐ Beep ☒ Mark ☐ Popup

Update Delete

Device Data Connect Save Close

Set a rule to trigger a beep, mark or popup event. (It is not useful right now)

Priority: Set the priority of this rule.

Type: Choose a type of data. Data types must be either 'Hex' or 'ASCII'.

Data: Set Data that will trigger the operation

Methods: Select a method of event.

8. Addition

Device: Sample

Line Trans Include Exclude Invalid Replace Event Addition

Type	Position	Offset	Operation	Length	Data
Ascii	None	0	=	0	Bye Bye

Priority: 8

Type: Asci Opera: = Len: 0

Pos: Non Offset: 0 Data: Bye Bye

Update Delete

Device Data Connect Save Close

Set a rule to add a string or character.

Priority: Default priority 8, user can't modify it.

Type: Choose a type of data. Data types must be either 'Hex' or 'ASCII'.

Position/Offset: Select a position to search the data string (ex. Start to search from begging ---- not useful right now)

Operation: Select an operator to be used when comparing 'Data' with data from POS.

Data: Set Data that will trigger the operation.

1.2.3 Connection selection and settings

1. Select connection method

The image shows a software window titled "CONNECT SETUP". On the left is a tree view with three items: "Com Setup" (selected), "COM1", "Lan Setup", and "Cam Setup". To the right of the tree view are several configuration fields: "Device" is a dropdown menu showing "Comcash POS syst"; "Name" is a text box containing "COM1"; "Baud" is a dropdown menu showing "9600"; "Stop" is a dropdown menu showing "1"; "Data" is a dropdown menu showing "8"; and "Parity" is a dropdown menu showing "None". Below these fields is a section labeled "Associated Cameras" with ten numbered buttons (1-10). Buttons 1 and 2 are highlighted in blue. At the bottom right of the main area is a "Test" button. At the very bottom of the window is a bar with five buttons: "Device", "Data", "Connect", "Save", and "Close".

Select COM port connection method and set parameters

All available Com ports are listed in tree view. Select the COM Port you like.

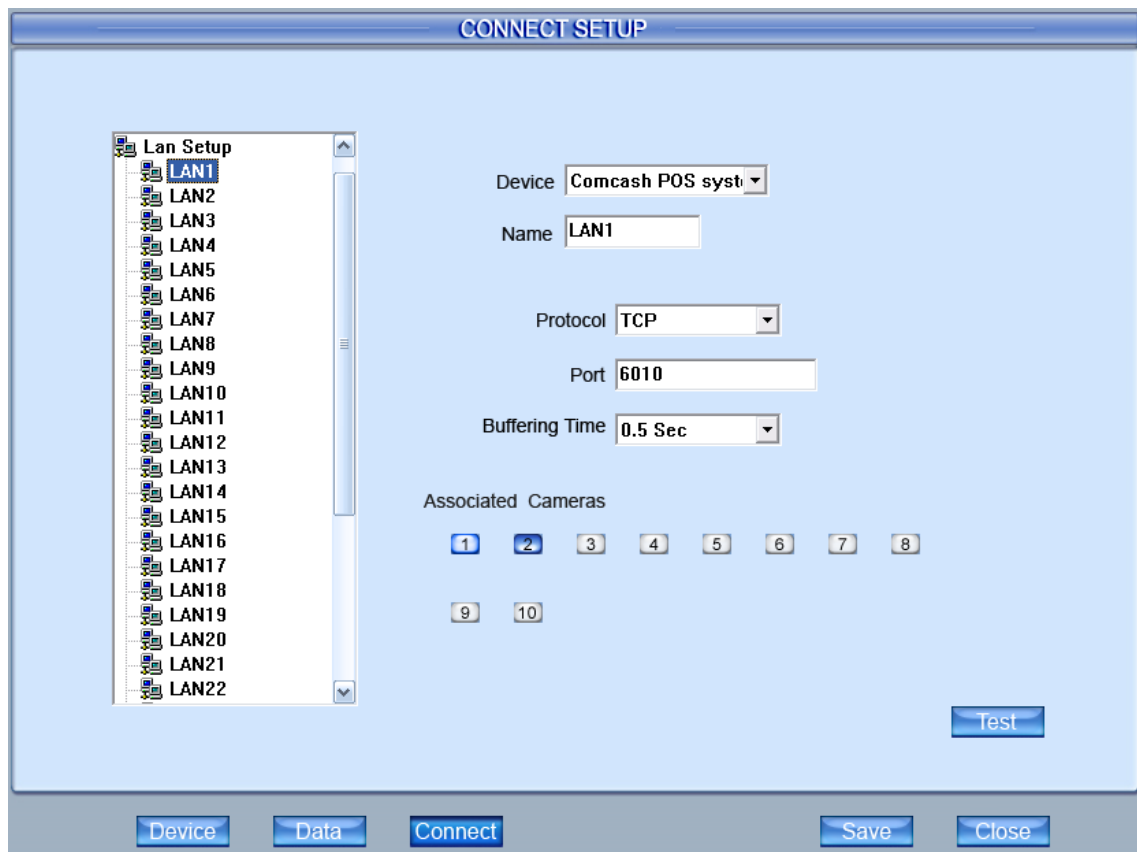
【Device】 Select the Device connect to this COM Port.

【Name】 Set a name for current connection

【COM Port Parameters】 Set the parameters of COM Port, includes baud rate, stop bit, data bit and parity.

Choose Associated Camera/Cameras. Associated Cameras have three statuses:

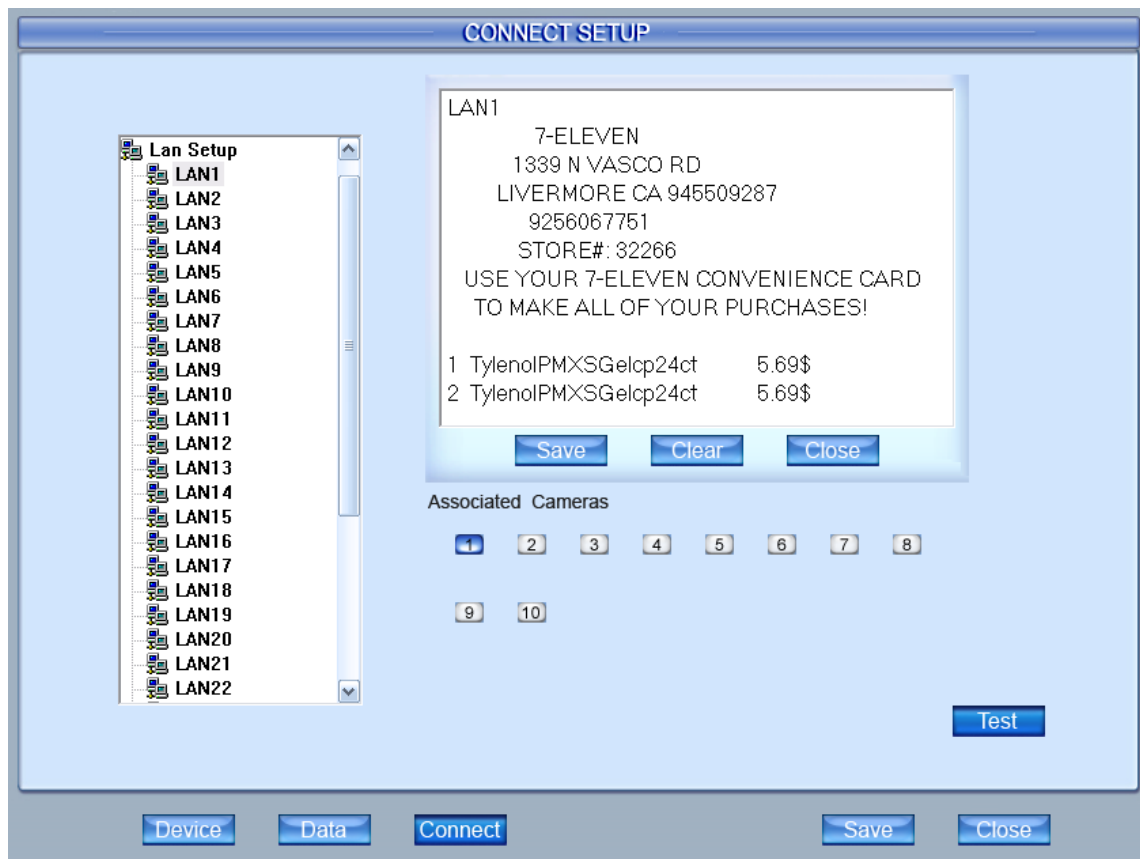
- 5 Not selected by any COM.
- 2 Selected by current COM.
- 1 Selected by other COM.



The image shows a software window titled "CONNECT SETUP". On the left is a tree view labeled "Lan Setup" containing a list of LAN ports from LAN1 to LAN22. LAN1 is selected and highlighted in blue. To the right of the tree are several configuration fields: "Device" is a dropdown menu showing "Comcash POS syst"; "Name" is a text box containing "LAN1"; "Protocol" is a dropdown menu showing "TCP"; "Port" is a text box containing "6010"; and "Buffering Time" is a dropdown menu showing "0.5 Sec". Below these fields is a section titled "Associated Cameras" which contains ten numbered buttons (1-10). Buttons 1 and 2 are highlighted in blue, while buttons 3 through 10 are grey. At the bottom right of the main area is a "Test" button. At the very bottom of the window is a grey bar containing five buttons: "Device", "Data", "Connect", "Save", and "Close".

Select network connection and set parameters

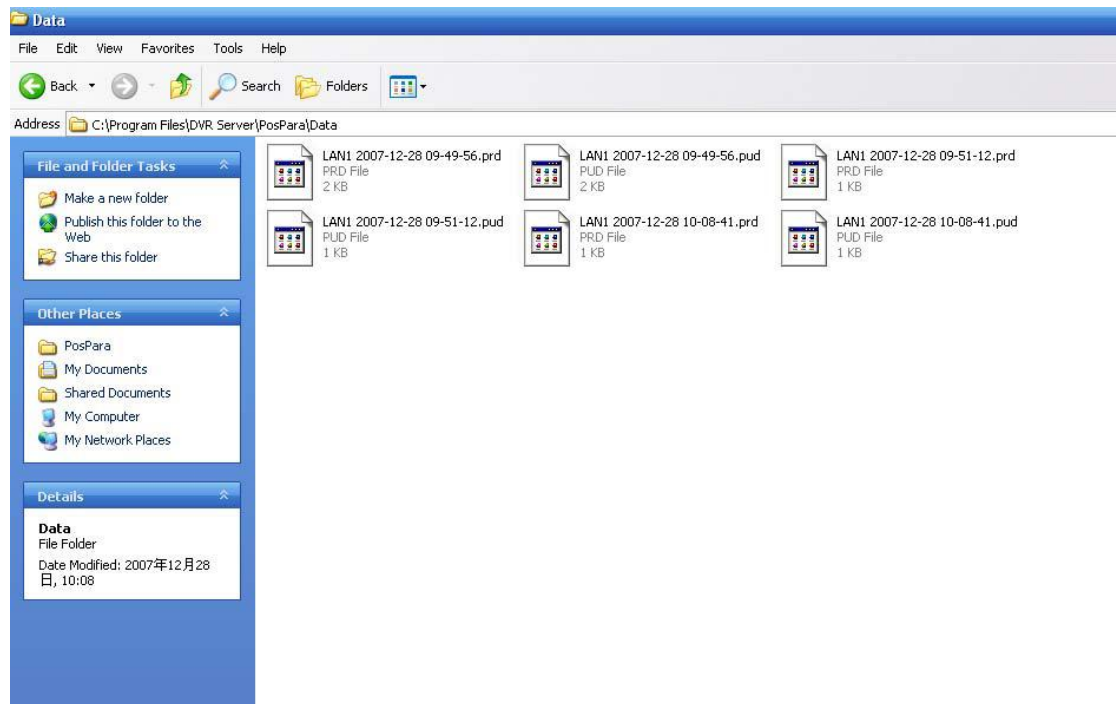
2. Test connection



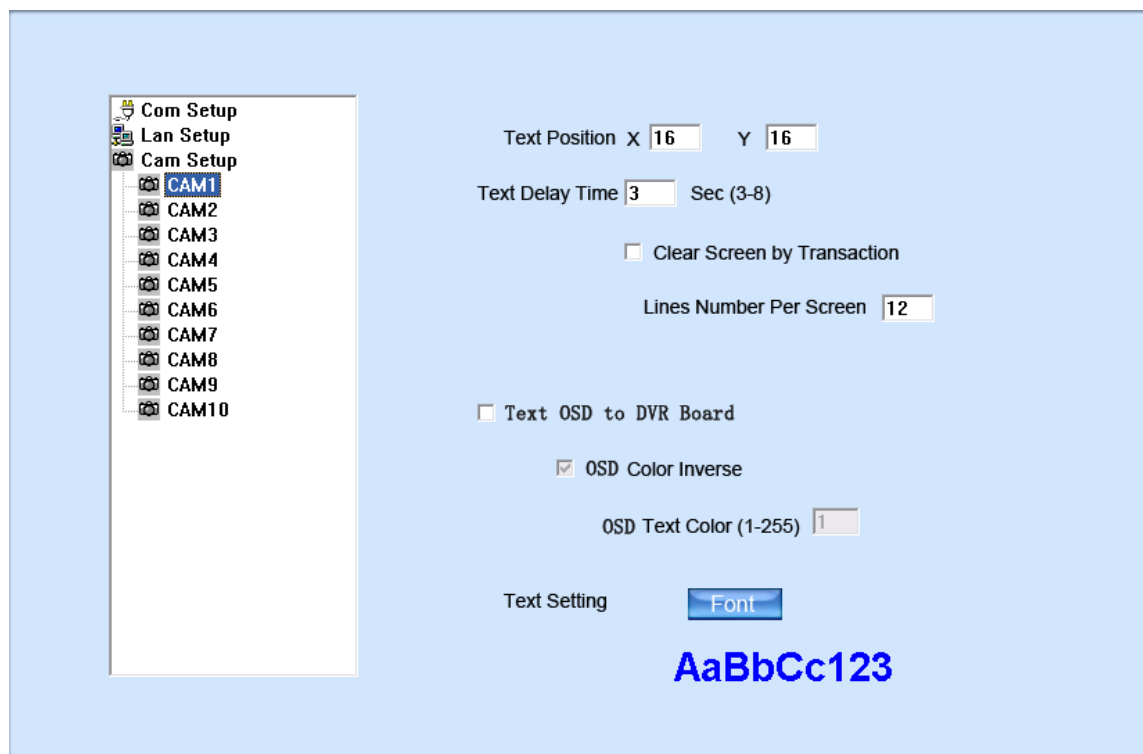
Press Test button to test connection

Press **Test** button on the **Connect** interface, if system popup a window, that is to say, the connection is ok.

When text data is sent from POS, the data will be shown on the window, user can press **Save** button to begin saving and press it again to end saving. After that user can find the data is saved under *installed folder/pospara/data*, the suffix name is .prd. User can analyze the data or send back to Smart Vision Direct, our engineer will analyze for you.

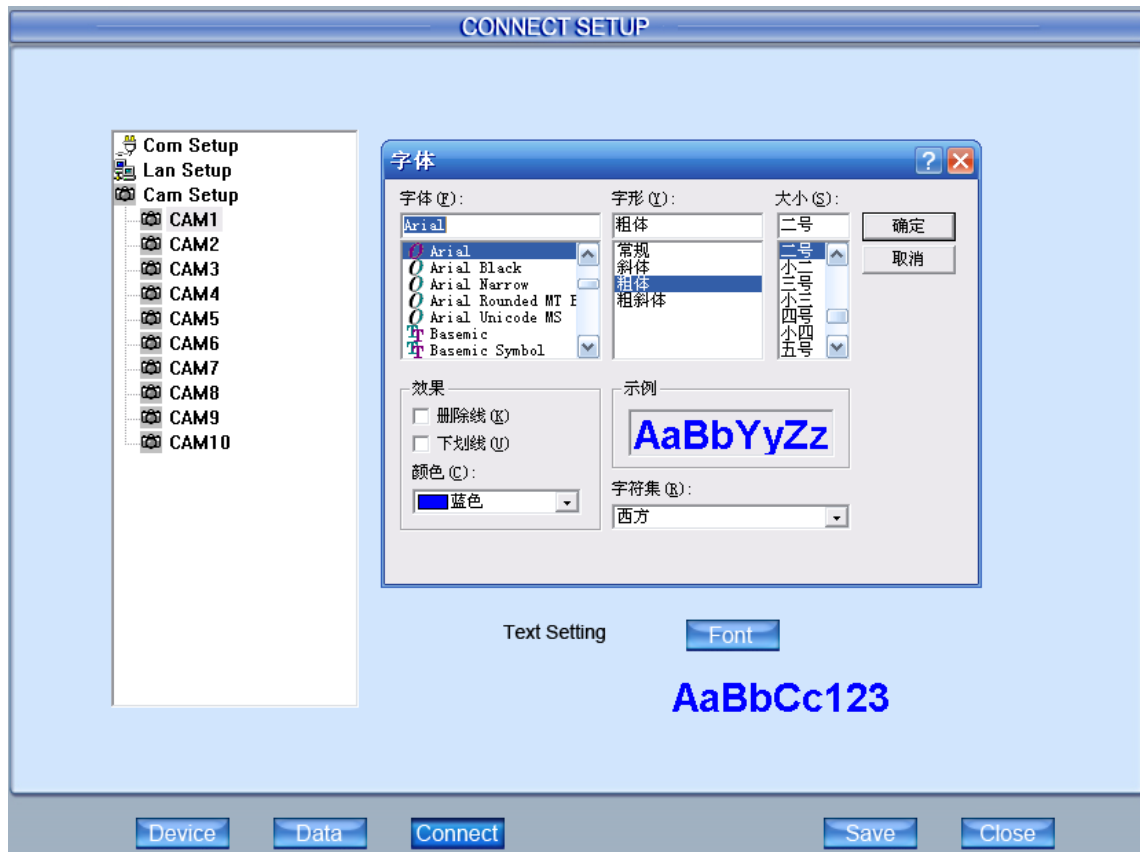


3. Cam setup



Firstly, choose camera number in list.

【Font】 Click “Font” and change font, size and color as below:



【Text Position】 Setup the position of text. Default is set to top of the screen. As number increases, text will be displayed farther from the top.

【Text delay time】 Set time (sec 3-8) for text to stay on screen.

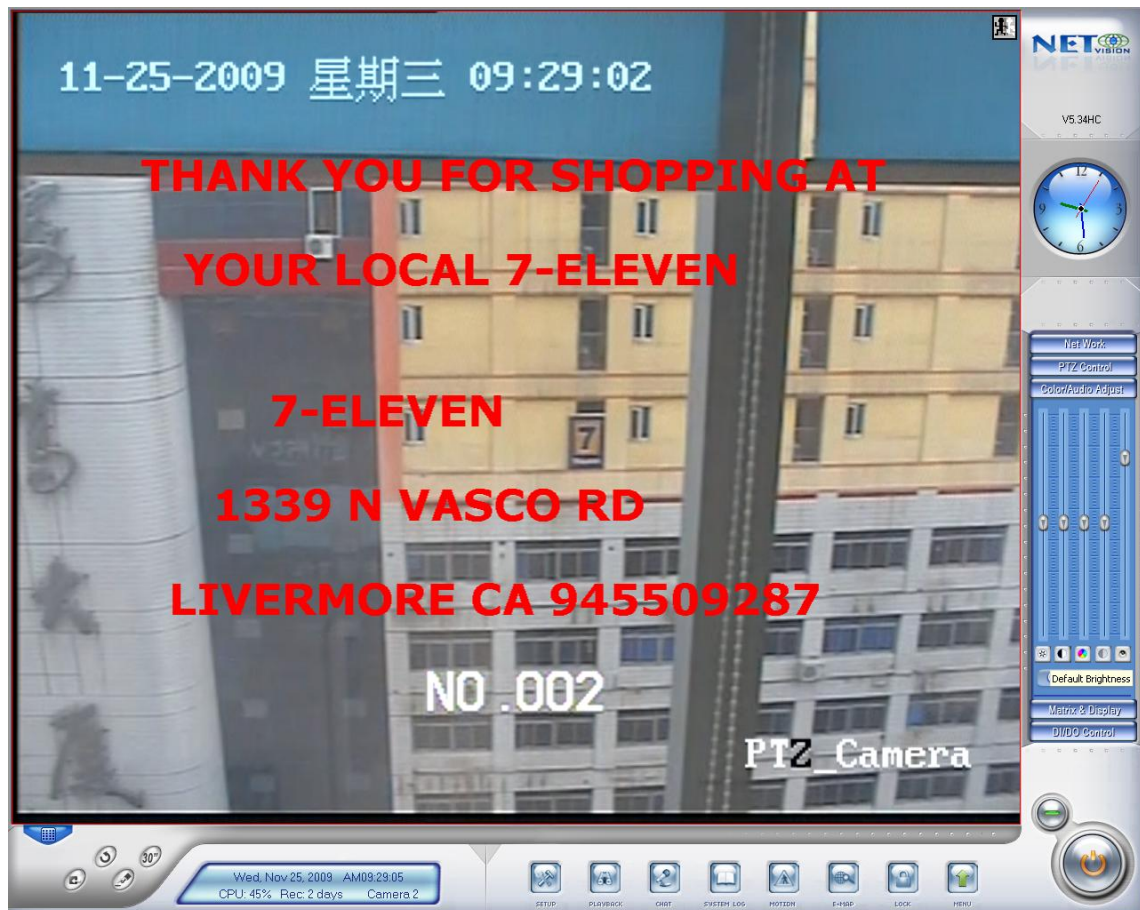
【Clear screen by transaction】 Keep display text until transaction break is delivered.

【Lines number per screen】 Set the desired lines(1-8) to display text. Disabled if "by transaction" is displayed.

【Text OSD to DVR Board】 When checked, camera image and data from external device is compounded together. When unchecked, they are not compounded together. However, it is still possible to verify the data and image together in Search and remote access.

Note:

Now, to IP cameras, user should not check the option. And user can set the font and "Lines Number per Screen". However, the size of the characters will not be changed automatically according to the window size. For example, when you set the characters to be suitable for one view mode, they will be too large for more views mode. So, we recommend user select one view mode and set the font to be larger so that the characters will be clearer when he want to display POS data on IP camera video.



1.2.4 Pos Event Monitor

Access Pos monitor interface:

ACU&POS Setup

ACU&POS Parameter Setup POS Field Filter Setup

☒ Show ACU&POS Server

Max Show Record Count Max Search Record Count

Play Back Set

Forward Time sec Back Time sec

Save

Exit

Max Show POSRecord Count

The toolbar can set the POS Record Count to be displayed. The max count is 1000.

ACU&POS Setup

ACU&POS Parameter Setup POS Field Filter Setup

ID	Key Word
1	7-ELEVEN
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	

Key Word

Color ■ clRed

☒ Only Work Between

→

☒ Enable Alarm

☐ Alarm Output

Alert Message

Save


Exit

User can set the POS Field Filter in this interface, such as: if set the color of 7-ELEVEN to be red and the work time between 0:00:00 and 23:58:00, when the 7-ELEVEN appears in this period, it will be displayed in red on screen.

The settings to **Alarm Output** are the same. The alarm will display the alert message.

ACU&POS Monitor				
Pos Device(4)		ID	Time	Content
LAN1		1	14-Apr-08 5:59:54 PM	USE YOUR 7-ELEVEN CONVENIENCE CARD
LAN2		2	14-Apr-08 5:59:55 PM	TO MAKE ALL OF YOUR PURCHASES!
LAN3		3	14-Apr-08 5:59:56 PM	
LAN4		4	14-Apr-08 5:59:57 PM	1 Spicy Bg Bte 3/1 OM 1.79\$
Acu Device(6)		5	14-Apr-08 5:59:58 PM	1 Spicy Bg Bte 3/1 OM 1.79\$
COM1		6	14-Apr-08 5:59:59 PM	1 BgGlpPlstcCar32z 1.09\$
COM2		7	14-Apr-08 6:00:00 PM	1 Spicy Bg Bte 3/1 OM 1.79\$
LAN1		8	14-Apr-08 6:00:01 PM	1 Spicy Bg Bte 3/1 OM 1.79\$
LAN2		9	14-Apr-08 6:00:02 PM	1 BgGlpPlstcCar32z 1.09\$
LAN3		10	14-Apr-08 6:00:03 PM	1 Spicy Bg Bte 3/1 OM 1.79\$
LAN4		11	14-Apr-08 6:00:04 PM	1 Spicy Bg Bte 3/1 OM 1.79\$
		12	14-Apr-08 6:00:05 PM	1 BgGlpPlstcCar32z 1.09\$
		13	14-Apr-08 6:00:06 PM	=== STORE TO MEMORY ===
		14	14-Apr-08 6:00:07 PM	
		15	14-Apr-08 6:00:08 PM	THANK YOU FOR SHOPPING AT
		16	14-Apr-08 6:00:09 PM	YOUR LOCAL 7-ELEVEN
		17	14-Apr-08 6:00:10 PM	T#02 OP25 TRN0000 04/04/06 02:15 pm
		18	14-Apr-08 6:00:11 PM	7-ELEVEN
		19	14-Apr-08 6:00:12 PM	1339 N VASCO RD
		20	14-Apr-08 6:00:13 PM	LIVERMORE CA 945509287
		21	14-Apr-08 6:00:14 PM	9256067751
		22	14-Apr-08 6:00:15 PM	STORE#: 32266
		23	14-Apr-08 6:00:16 PM	USE YOUR 7-ELEVEN CONVENIENCE CARD
		24	14-Apr-08 6:00:17 PM	TO MAKE ALL OF YOUR PURCHASES!

Select a record and double-click it.

ACU&POS PlayBack		
	14-Apr-08 5:59:54 PM USE YOUR 7-ELEVEN CONVENIENCE CARD	
	14-Apr-08 5:59:55 PM TO MAKE ALL OF YOUR PURCHASES!	
	14-Apr-08 5:59:56 PM	
	14-Apr-08 5:59:57 PM 1 Spicy Bg Bte 3/1 OM 1.79\$	
	14-Apr-08 5:59:58 PM 1 Spicy Bg Bte 3/1 OM 1.79\$	
	14-Apr-08 5:59:59 PM 1 BgGlpPlstcCar32z 1.09\$	
	14-Apr-08 6:00:00 PM 1 Spicy Bg Bte 3/1 OM 1.79\$	
	14-Apr-08 6:00:01 PM 1 Spicy Bg Bte 3/1 OM 1.79\$	
	<input checked="" type="checkbox"/> Show Text Replay	

The video will display the period bases on the Forward time and Back time.