POS NVR System Structure

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1 POS NVR System Structure



Fig.1 POS NVR System structure of the POS application

1.1 "POS +NVR" mode

1.1.1 Introduction

Currently there are two ways to connect NVR with POS terminals, via network or via serial port.

For example: The NVR initiates the connection to the POS server for the POS data communications between POS server camera.



Fig.2 Basic network connection with camera

How to realize the connection is mainly based on the type of POS machine. It's very important that what type of POS machine is adopted. The following is POS NVR sever with model introduction.

1.1.2 NVR Configuration

We need to configure the NVR firstly.

1. Login the NVR on the local NVR page, select "system"->" POS", and edit a POS channel.

NVR 4.0	s de la companya de l			🥸 1 <i>I</i> S	4 🛛 🖉
General	⊡Select + Add	🗹 Edit 🛛 🖂	Del [> Enable 🤇	∋ Disa	
പ്പ User					
Network >		3			
Event >	D1 POS 1	D2 POS 2	D3 POS 3	D4 POS4	D5 POS 5
😪 Live View >					
RS-232	D6 POS 6	D7 POS 7	D8 POS 8	D9 POS 9	D10 POS 10
Holiday					
E POS 2	0				
	D11 POS 11	D12 POS 12	D13 POS 13	D14 POS 14	D15 POS 15
	D16 POS 16				

Fig.3 POS configuration page

2. Select a connection type. If the connection type is UDP Reception, you also need to configure the UDP Reception parameters.

NVR 4.0		
රිටු General	< Back Modify POS	
A User	Enable V POS Name POS 1 - POS Prot Universal Protocol - Basic Connectio UDP Reception 1 - Pa	aram
Network >	RS-232	
Event >	Channel Linkage and Display Arming Schedule Event Linkage USB-to-RS-232	
🜊 Live View >	25-17-2018 Thu 17:03:17 Character UDP Reception 2	
RS-232	Overlay M Multicast	
Holiday	Font Size Sniff	
POS	Display fo 5	
	Timeout(s) 5	
	For example, the entered card number will be show	
	Display on	

Fig.4 POS connection parameter setting 1

NVR 4.0	& D @ C @ 🔅	JS	🤹 🖻 O
General	< Back Modify POS		
0	Enable 🔗 POS Name	POS 1	-
SZ User	POS Prot Universal Protocol - Basic Connectio	UDP Reception	-1 Param
Network >	UDP Connection Settings		
🗒 Event >	Port 10102 2]	2
🔍 Live View >	Allowed Remote IP 10 . 18 . 113 . 18 3	D1] IP camera 01 JTF-8	-
RS-232		Scroll	
Holiday		Large Medium	Small
🗐 POS	4	5	
	OK Cancel	Jun	
	50	r example, the externel card number	will be chos
	Display on		
	Apply		

Fig.5 POS connection parameter setting 2

3. Then, select the overlay mode, font size, overlay time(s), font color in this page and so on.

1	IVR	4.0	K Back	Modify POs	,	Q	۲ <u>ـــــ</u>			89	19. 	A 19	10
0	General												
ß	User		En	able 🤍	5. 	NAME OF T			POS Name	POS 1	and a second		
1000			PO	S Prot	Universal P	rotocol	Basic		Connectio	UDP Re	eception		Param.
()	Network	2											
	Event	>	Ch	annel Linka	age and Disp	lay Armir	ng Schedule	Event	Linkage				
				-				1000	Linked Ch	(D1) IP (camera 01	<u></u>	
2	Live View	>		15-17-2	918 . 01 . 17:32	181	3		Character	UTF-8		12	
P	RS-232					DENCA			Overlay M	Scroll		13	
	100000			10	1		No.		Font Size	Large	Medium	Small	1
[11]	Holiday			and the second	and and	C.	100		Font Color]
					10		8 -		Display fo	5			
		-		- ALL	A	20			Timeout(s)	5			
					Summer of		IP cancra	01	Privacy S	nun			
										For example, the	entered card numb	ter vil te shre	ě
									Display on	2			
				- Comb									
				PARENT.									

Fig.6 POS overlay setting

4. After setting the GUI of NVR, we should set the parameter in the Convert Tester. Including protocol, local host IP, local host port and then click 'connect'.

🙀 USR-TCP232-Test RS232 to Ethern	net Convert tester			
File(F) Options(O) Help(H)				
COMSettings COM port of	lata receive	Network data receive		NetSettings
PortNum COM1 💌				(1) Protocol
BaudB 115200 -			1	UDP 🗾
				(2) Local host IP
DPaity NONE			2	10.16.113.16
DataB 8 bit 💌			IT	(3) Local best port
StopB 1 bit 💌			3	10102
Open			4	🔵 Connect
Kecv Uptions				Kecv Uptions
Receive to file				Receive to file
Add line return				Add line return
🔽 Receive As HEX				🔽 Receive As HEX
🔲 Receive Pause				🔲 Receive Pause
Save Clear				Save Clear
Send Options				Send Options
🗖 Data from file				🗌 Data from file
🔲 Auto Checksum				🗌 Auto Checksum
🔲 Auto Clear Input		97		🗌 Auto Clear Input
🔲 Send As Hex				🗌 Send As Hex
Send Recycle				🔽 Send Recycle
Interval 1000 ms Jinan USR	Technology Co.,		^	Interval 1000 ms
Load Clear	Send		5end ▼	Load Clear
💓 Ready! Send	:0 Recv:0 Reset	💣 Ready!	Send: 72660	Recv:0 Reset

Fig.7 POS Convert Tester—Net setting 1

5. We should fill in the Remote IP as NVR's IP, Port, the POS content and click 'Send' in the Convert Tester.

😜 USR-TCP232-Test RS2	32 to Ethernet Convert tester				
File(F) Options(O) Hel	p(H)				
COMSettings	COM port data receive		Network data receive		NetSettings
PortNum COM1 -					(1) Protocol
BaudR 115200 -					(2) Loop heat IP
DPaity NONE 💌					10.16.113.16
DataB 8 bit 💌					(3) Local host port
StopB 1 bit 💌					10102
🔘 Open					🔅 Disconnect
Recv Options					Recv Options
🔲 Receive to file					🗌 Receive to file
🗌 Add line return					🗌 Add line return
🔽 Receive As HEX					🔽 Receive As HEX
🔲 Receive Pause					🥅 Receive Pause
<u>Save</u> <u>Clear</u>					Save Clear
Send Options					Send Options
🗌 Data from file					🗌 Data from file
🔲 Auto Checksum					🗌 Auto Checksum
🗌 Auto Clear Input			1	2	🗌 Auto Clear Input
🗌 Send As Hex				10100	🗌 Send As Hex
🔲 Send Recycle			RemoteIP 10.16.113.4	14 Port 10102	🔽 Send Recycle
Interval 1000 ms	Jinan USR Technology Co.,	Cond	price 10.00	A Cond	Interval 1000 ms
Load Clear	Ltd.	Jenu	change 90.00	+ 4 Jenu	Load Clear
👉 Ready!	Send:0 Recv:0	Reset	🍯 Ready!	Send: 173020	Recv:0 Reset

Fig.8 POS Convert Tester—Net setting 2

6. Then the POS overlay you set will display to the live view local page. You can choose to display or not in POS configuration page or live view page.



Fig.9 POS overlay setting



Fig.10 POS overlay setting in living view

7. Record configuration: Enable the POS schedule in the Storage. And click "edit" to check the day is POS record.

NVR 4.0		ÐĽ) 🛛	۲		£33	ß	<u>e</u> @	
Recording Sche	Camera No.		camera D1	-					
Capture Schedule	Enable Sched								
📇 Storage Device	Casti	Durat	Mation	0.12.000	-			Advance Edda	ed:
💾 Storage Mode	0 3	2 4	6 8	10	12	14 16	18 20	22 24	-1
Advanced	Mon Tue Vved Thu Fri Sat Sun								1 2 3 4 5 6 7
	Cop	oy to	nen the normae	Acoly &	inents exce	eus une minit (r	97.		

Fig.11 POS local record configuration1

8. Playback the POS channel in the local NVR playback page. The POS record bar is red as an event record. You can also click Disable POS overlay .Please refer to the below picture:



Fig.12 POS Playback

- Main POS parameter introduction;
 - POS Protocol: At present, there are four kinds of compatible protocols: Universal Protocol, EPSON, AVE, NUCLEUS.
 - POS Settings:

Overlay Channel: It can show most half of the POS cameras. Select the correct channel, you can overlay the information on it.

- Connection ways: Network connection (TCP, UDP, multicast, Sniff) Serial Port connection (RS-232) USB connection (USB to 232)
- Main POS Configuration tips:
 - **D** POS only overlay to the main stream.
 - □ All the streams are stored in the disk, there is a control switch when playback, we can choose to show the overlay or not. The overlay is not in the stream.

1.1.3 Network POS + NVR

For example: We based on TCP Reception type, NVR will initialize the connection between camera and POS terminal for POS data transmission. The topology as shown in Fig.12Fig.12.



Fig.13 Network POS with NVR topology

1.1.4 RS-232 POS (Serial Port) + NVR

To RS-232 POS, there are three connection ways.

1) POS machine connect to the NVR, the topology usually like this below:





2) Also, we usually will see the IO server in this mode. The POS machine connect to the IO server, the IO server turn 232 signals into network signals, the topology usually like this below:



Fig.15 RS-323 POS with DVR topology2

3) Use RS-232 to USB convertor, there is an extra RS-232 hardware with the USB to connect to the NVR, the port in convertor and POS are one to one correspondence, POS1 should be connected to port1 of convertor. The topology like this below:





1.1.5 Product selection

Table 4 Product List

Produc	Product	Description	Image
t	Model		

		1.Support POS rule configuration	
		2.Support POS local live view, record	
	l series NVR	local playback	
NVK		3.Support POS event playback, backup	
		4. It can support half of the channels to	
		overlay the POS information.	

1.2 "iVMS 4200+POSNVR+POS" mode

1.2.1 Introduce

With high compatibility and wide adaption, the iVMS-4200 can manage analog, IP and hybrid signal devices; it can access to the devices of different network environment namely LAN, WAN, cable or wireless connection. For example, we add the POS to the NVR, then we use the following topology:



Fig.17 "iVMS 4200+POSNVR+POS" mode topology

1.2.2 Configuration

1. Firstly, we need to keep the NVR with cameras online; then, we can add the device in the 4200, do the configuration in the 4200 configuration page.

File System View Tool Help	iVMS-4200	admin 🕀 💷 🏪 19:37:53 🔒 🗕 🗖 🗙
Control Panel 🔂 Main View	Device Management	
Operation and Control		
Imain View Viewing live video, controlling PTZ functionality and setting image parameters. Emap Adding, modifying, deleting, and basic operations of E-map.	Renote Playback Barching the record files and playback. Security Control Panel Ontrolling and monitoring the zone and playtacito or the security control panel.	Video Wall Configuring and operating video wall functions. Video Intercom Controlling and operating the video intercom device.
Maintenance and Management		
Device Management Adding, editing and deleting the devices and groups. Adding, editing and deleting	Event Management Configuring the alarm, exception parameters and the linkage actions for eting the devices and groups.	Storage Schedule Configuring the storage schedule and related parameters.
Account Management Adding, deleting users and assigning the permissions.	Log Search Searching, viewing and backing up local and remote logs.	System Configuration Configuring general parameters.
🙆 🥼 🗃 🍁 No e-mail account is configured, and all th	e sending operations are stopped.	<u>م</u> م

Fig.18 "iVMS 4200 "maintenance management page

2. Select the POS NVR, click to open the device remote configuration page, click the POS tab to set the parameters.



Fig.19 Remote configuration page

3. Live view the test overlay.



Fig.20 Live view the test overlay

4. Record configuration: configure the event record in the storage schedule page.

File System View Tool Help			iVMS-4200	wuji6 🤤
Control Panel			Templates Management	×
Camera	 All-day Template 	🖉 Cont	inuous 🖉 Event Recording 🖉 Command 🕱 💼 🗊	
Search				
🖭 🔄 DS-7732NI-I4	 Weekday Template 		0 2 4 6 8 10 12 14 16 18 20 22 24	
💌 🚭 10.16.113.56	Event Template	Mon		
- 🔄 10.16.113.44	Template 01	Tue	0 2 4 6 8 10 12 14 16 18 20 22 24	
IP Camera1_10.16 IP Camera2_10.16	Template 02		0 2 4 6 8 10 12 14 16 18 20 22 24	
IP Camera3_10.16	Template 03	wed		
IP Camera4_10.16		Thu	0 2 4 6 8 10 12 14 16 18 20 22 24	
IP Camera5_10.16	Template 04			
IP Camera6_10.16	Template 05	Fri	0 2 4 6 8 10 12 14 16 18 20 22 24	
IP Camera7_10.16	Template 06			
IP Camera8_10.16		Sat		
IP Camera9_10.16	Template 07		0 2 4 6 8 10 12 14 16 18 20 22 24	
IP Camera10_10.16	Template 08	Sun		
IP Camera11_10.16		L		
📽 IP Camera12_10.16				
IP Camera13_10.16			OK C	ancel
📽 IP Camera14_10.16				
IP Camera15 10 16				

Fig.21 Storage schedule configuration

5. You can search the record by key word, such as: enter the keywords to filter in a period of time. Enter Remote Playback firstly, and then click POS playback. Enter the keywords, click Search, and you can search the POS video including the keywords.



Fig.22 POS playback



Fig.23 POS keywords playback

1.2.3 Product selection

Table 5 Product List

Product	Product Model	Description
iVMS-4200	V2.7.1.4	1.Support configure NVR's POS parameter
	build20180403	2.Suppot POS live view and playback
		3.Support search POS video