

VidRev Video Server System

User's manual

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1 Welcome to VidRev Video Server System

The VidRev Video Server system is designed as a high-end software system. Potential customers can be large corporations, multinational companies, government agencies, SMI/SME, SOHO, educational institutions or residential customers who want surveillance with remote access across the Internet. It can handle up to 16 PTZ cameras with multiple concurrent accesses (currently up to 50). It has excellent performance in terms of reliability, confidentiality, connection capacity, audio/video quality and friendly user interface. It meets the optimal end users' requirement.

VidRev Video Server - Professional video server end software, from which cameras and client users are managed.

VidRev Video Server System can be used for multi-site real-time video surveillance, video monitoring, extended distance education, remote medical diagnosis and any other industry, which needs high quality real-time audio/video communication.

2 Specifications

The system in real-time captures AV data streams from the video server end and then redistributes the streams back to any client (user, site) terminals, on request by running the VidRev video player.

Cameras selections:

- Professional CCD cameras combined with a dedicated video capture card.

System Specification:

- Video Performance

VIDEO QUALITY (PAL)	RESOLUTION	BANDWIDTH	CPU
1 (25fps)	256x192	128Kbps	Celeron/PIII 600
3 (25fps)	384x288	256Kbps	Celeron/PIII 1G
5 (25fps)	512x384	384Kbps	Celeron/P4 1.5G
7 (25fps)	640x480	512Kbps	Celeron/P4 2G
9 (25fps)	768x576	1Mbps	P4 3G
VIDEO QUALITY (NTSC)	RESOLUTION	BANDWIDTH	CPU
10 (30fps)	160X120	128Kbps	Celeron/PIII 600
12 (30fps)	320X240	256Kbps	Celeron/PIII 1G
13 (30fps)	480X360	384Kbps	Celeron/P4 1.5G
14 (30fps)	640X480	512Kbps	Celeron/P4 2G

Table 1 Video performance

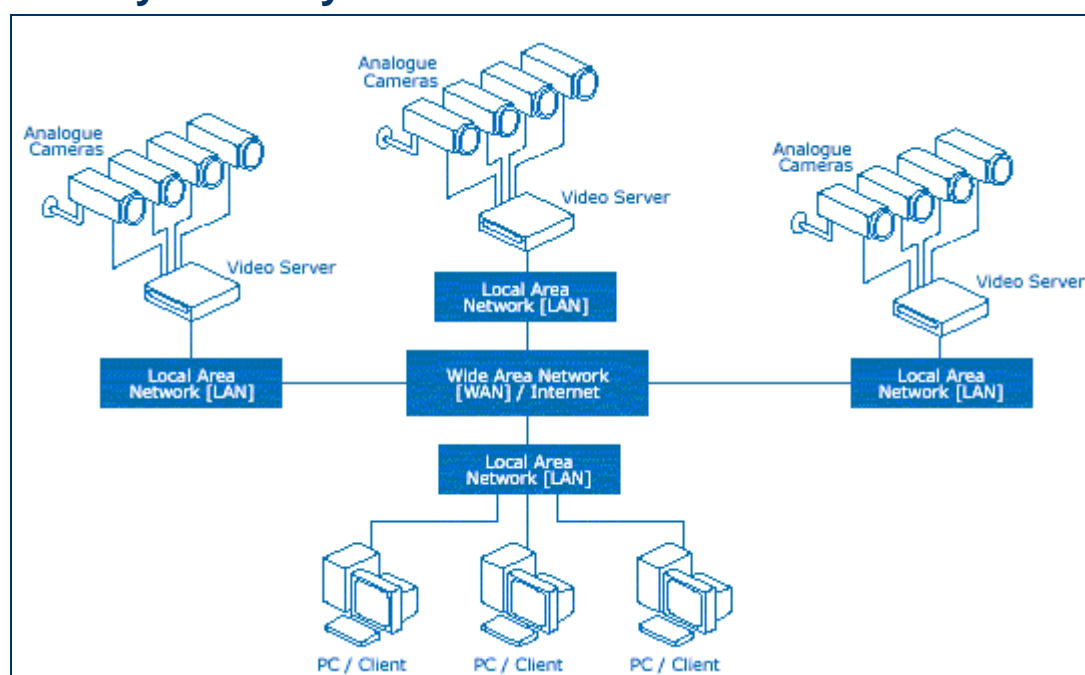
- Audio Performance
Equivalent 12 bit sampling rate, which is higher than the standard telephone quality rate, which is 8 bit.

Bandwidth Requirement (upload/download) at Video Server End:

- Total sum of the bandwidth of all client terminals.

Network Connection Protocol: TCP/IP

3 System Layout

**Figure 3-1 System layout**

4 Video Server System Operation Environment

4.1 Video Server System software & hardware

4.1.1 Operation systems

MS Windows ME/2000/XP

4.1.2 Hardware requirement

CPU: Pentium 4 /2GHz plus

RAM: 256MB

Monitor: 800*600 SVGA or better

Soundcard: Full-duplex

Speakers set or headphone set

Microphone

Camera(s): Professional CCD cameras with dedicated video capture card.

4.2 NETWORK SETUP

Setup firewalls and routers: Open/forward any port number between 2000 and 3000 to the local IP.

5 Characteristics of VidRev Video Server System

1). **Advanced CODEC and dynamic network technology**

Based on stream broadcast technology, VidRev proprietary CODEC technology gives shorter relative average silent time. The multi-layer buffers, dynamic stream broadcast speed eliminate the mosaic. TCP network and the network non-contention technology guarantees the smooth data flow.

2). **Large main screen display in high resolution in real-time**

A near DVD grade video (640X480@25fps) can be displayed on the main screen, which, by a simple click, can explode to full screen.

3). **Real-Time Multi-Channel Mixing**

With the real-time multi-channel audio full-multiplex mixing mechanism, every user can talk and listen to others at the same time. Microphones are live all the time without the control and release processes. This makes the Video Server more friendly and natural.

4). **Multi-channel simulcast and Display**

All users can watch the same video in real-time concurrently. This delivers real multi-point Video Server rather than traditional point-to-point scenarios. The highly efficient streaming transport picture-smoothing algorithm greatly improves the system resource utilization.

5). **Proxy and firewall support**

No special setting needed if the Video Server system is used with the most popular NAT firewalls. Otherwise, a dedicated port should be opened.

6). **Pure software compression scheme**

Pure, high efficient software compression scheme delivers the network AV transmission solution. The state of art, world class, proprietary CODEC is reliable, safe and stable. Video Servers are delivered straight to normal PCs other than expensive hardware equipment. Client terminal software is free to download and no duplications of hardware settings appear on a client's site.

7). **System Mobility**

With VidRev proprietary IP resolution technology, a Video Server system can be easily set up anywhere in the world, as long as Internet connection is available with reasonable bandwidth.

8). Data Confidentiality

Proprietary CODEC with the most advanced private key exchange and administration, high-level confidentiality of both audio and video data is secured.

9). Instant Text Messages

Two way instant text messaging functions are available

16). TCP/IP network compliance

Standard point-to-point TCP/IP protocol and dynamic software compensation gives reliable stream media delivery.

17). User-friendly Interface

User-friendly interface gives all users a comfortable control on both server end and remote client user ends.

18). Fast Instant PTZ Camera Control

All PTZ cameras can be controlled from both the server end and remote client end (If the necessary access permission is granted) with instant response.

19). Quality audio sampling

Audio sampling rate are equivalent to 12 bits, which is higher than standard telephone grade.

6 Working With Video Server System

Once the Video Server System is running, you have a screen shot as the following figure. If a camera and the dedicated capture card are installed correctly, you should see your local video screen on the main screen.

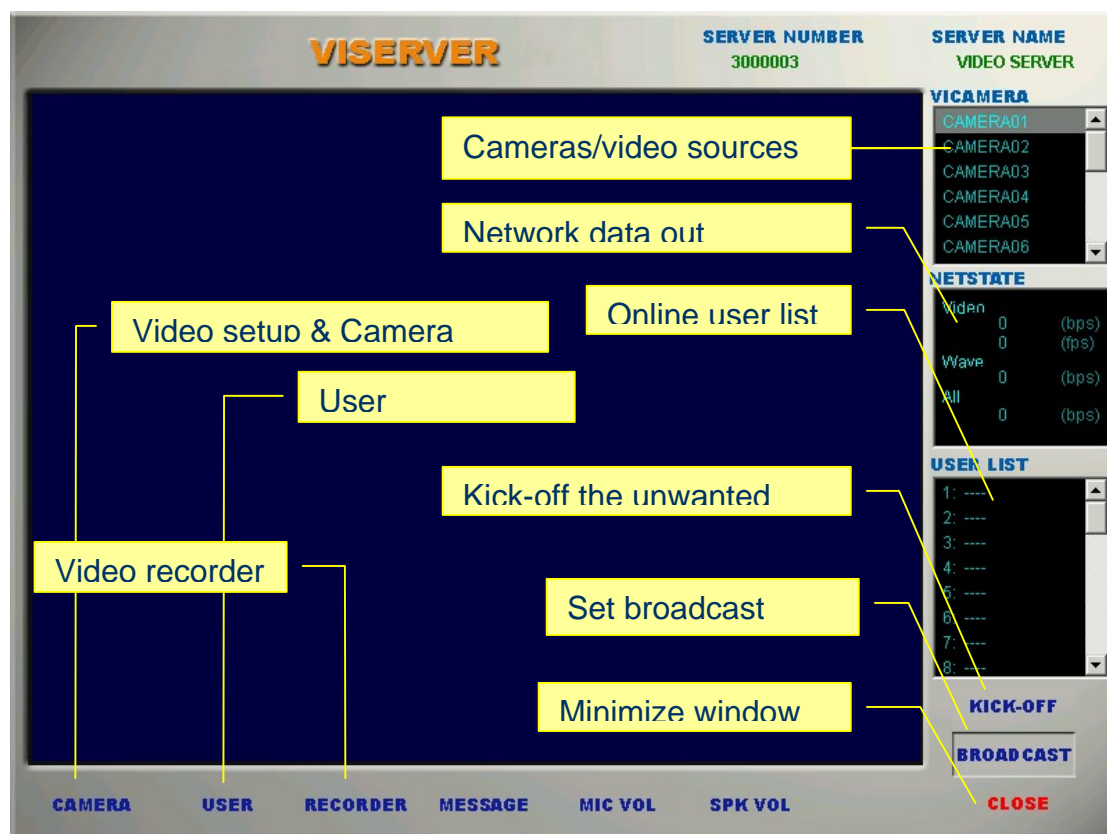


Figure 6-1 Video Server Main Screen

7 Detailed Instructions

7.1 Video Source/Camera List

VICAMERA: Highlight to select the camera you want to view. Click CAMERA button and you may edit the properties of the selected camera.

The Video source/camera list displays up to 16 available video sources and/or cameras. Operators can choose any source to view the video content. All camera names can be customised to show the relevant sources.

7.2 Network Statistics

NETSTATE: Video: Video data speed in bps and frames rate (fps); Wave: Audio data speed in kbps; All: Composite data speed in bps.

Network statistics column displays the current video stream out data in bit per second, frame rate, audio stream out data in bit per second and the combined total data out.

7.3 User List

USER LIST: Current online visitors list

User list gives a list of current online users' list, which displays user names and their IP addresses.

7.4 Camera/Video Source Property Adjustment Button



Figure 7-1 Video properties pop-up screen

The button brings a pop up window, from which, a Pan-tilt-zoom camera can be controlled and video brightness, contrast, colour, resolution level and video input interfaces can be adjusted or set.

CAMERA: Click to open camera menu, here, current camera properties are set.

Source: 000 and 001 are BNC video composite input and 002 is S-Video input.

Quality:

1-9 for PAL format video input

10-14 for NTSC format video input.

Resolution: (Refer to the table in Video Performance section.)

7.5 User Information Management Button

USER

NO	Name	Password	Level	Cameras	Online	IP	Login Time	Logout Time
1	Customer	*****	0	Y Y Y N N N ...	Y	192.16...	02-19 23.01.39	02-19 22.56.30
2	guest	*****	0	Y Y Y N N N ...	N	61.177...	02-19 16.29.58	02-19 16.30.26
3	VIP	*****	1	Y Y Y Y Y Y ...	Y	192.16...	02-19 23.00.27	02-19 22.59.00
4	hyn	*****	2	Y Y Y N N N ...	N	61.132...	01-31 23.52.09	01-31 23.53.50
5	friend	*****	0	Y Y Y N N N ...	N	192.16...	01-31 21.22.27	01-31 21.24.27
6	guest	*****	0	Y Y Y N N N ...	N	61.132...	02-17 00.09.11	02-17 00.10.17
7	US Cust	*****	0	N N N Y Y Y ...	N	192.16...	02-19 22.56.39	02-19 22.56.43
8	test	*****	0	Y Y Y N N N ...	N	210.11...	02-17 15.39.43	02-17 15.40.19
9	class...	*****	0	Y Y Y N N N ...	N	192.16...	02-15 23.36.19	02-15 23.36.23

ADD EDIT DEL CLOSE

Figure 7-2 User Add and Edit pop-up screen

EDIT

NAME

PASSWORD

LEVEL

CAMERAS

- CAM RES 5
- CAM RES 9
- CAM RES 1
- S-in RES 9
- CAMERA05
- CAMERA06
- CAMERA07
- CAMERA08
- CAMERA09
- CAMERA10
- CAMERA11

OK CLOSE

Figure 7-3 Add and edit user profile pop-up screen

7.6 Video Recorder

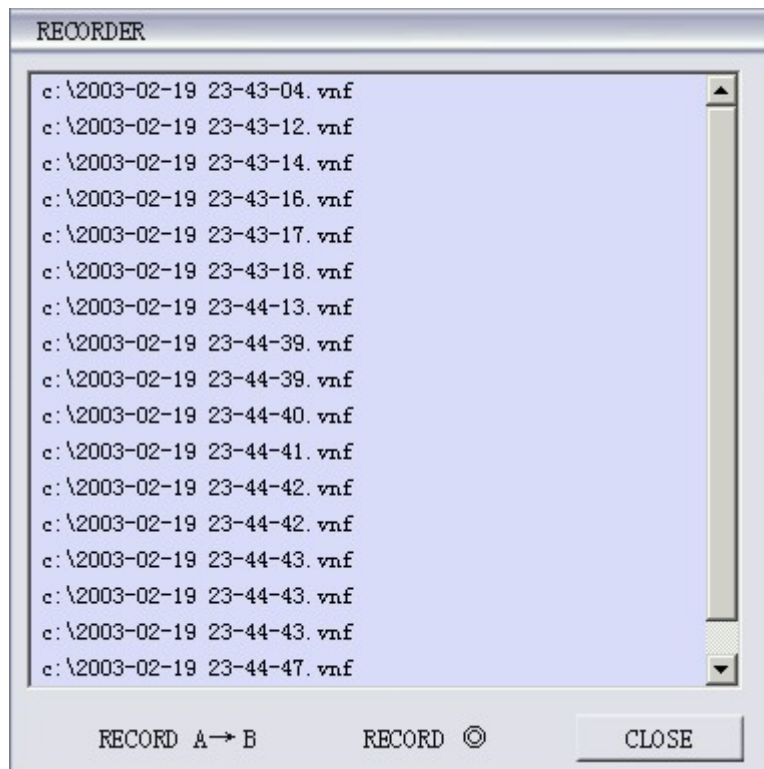


Figure 7-4 Recording pop-up screen

Sectional recording

RECORD A → B

Round the clock recording

RECORD ©

7.7 Sending Instant Message Box

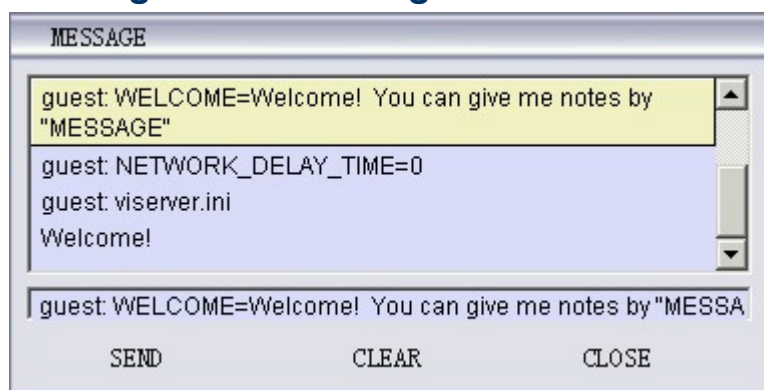
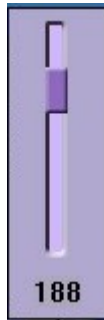


Figure 7-5 Instant message box

7.8 Audio Volume Control



Microphone and speaker volume

8 PTZ Control System Setup

8.1 Features

Lens Control

-- Zoom: +/-

-- Focus: +/-

-- Iris: +/-

Pan-Tilt Control: Fixed speed pan-tilt control

Auto-scan.

8.2 Control Protocol

'Format: Which com port, baud rate, parity checking, stop bit, data bits

'Port 0=com1 1=com2 etc...

'baud rate 0=110 1=300 etc... 6=9600 12=256000 etc...

'parity 0=Non parity checking 1=even 2= odd etc...

'stop bit 0=1 stop bit 2= 2 stop bits

'data bits 6=6 bits 8=8 bits etc...

'Refer the following table

'ComTable = {"com1", "com2", "com3", "com4"};

'BaudTable = {

' CBR_110, CBR_300, CBR_600, CBR_1200, CBR_2400,

' CBR_4800, CBR_9600, CBR_14400, CBR_19200, CBR_38400,

' CBR_56000, CBR_128000, CBR_256000

'};

'ParityTable = {

' NOPARITY, EVENPARITY, ODDPARITY, MARKPARITY,

SPACEPARITY

'};

'StopBitsTable = {

' ONESTOPBIT, ONE5STOPBITS, TWOSTOPBITS

'};

[COMPORT]

'The following setting for com1, 9600 baud, non parity, 2 stop bits, 8 data bits, this set for video switch only

'SELECTCOM_PORT=0 for com1, =1 for com2, etc.

```
SELECTCOM_PORT=0
SELECTCOM_BITPS=6
SELECTCOM_PARITY=0
SELECTCOM_STOPBIT=2
SELECTCOM_DATABIT=8
```

'The following setting for com2, 9600 baud, non parity, 1 stop bit, 8 data bits, this set for PTZ decoding

```
MOVECOM_PORT=1
MOVECOM_BITPS=6
MOVECOM_PARITY=0
MOVECOM_STOPBIT=0
MOVECOM_DATABIT=8
```

'Format: command using hexadecimal (4 letter), every two letters represent one byte (8 bits)

```
[SELECT]
SELECT00=220000000000FF
SELECT01=220000000001FF
SELECT02=220000000002FF
SELECT03=220000000003FF
SELECT04=220000000004FF
SELECT05=220000000005FF
SELECT06=220000000006FF
SELECT07=220000000007FF
SELECT08=220000000008FF
SELECT09=220000000009FF
SELECT10=220000000010FF
SELECT11=220000000011FF
SELECT12=220000000012FF
SELECT13=220000000013FF
SELECT14=220000000014FF
SELECT15=220000000015FF
```

' Sample configured to Kalatel PTZ protocol.

```
[MOVE00]
MOVEUP_ON=15U001~
MOVEUP_OFF=15u001~
MOVEDOWN_ON=15D001~
MOVEDOWN_OFF=15d001~
MOVELEFT_ON=15L001~
MOVELEFT_OFF=15l001~
MOVERIGHT_ON=15R001~
MOVERIGHT_OFF=15r001~
```

' Iris increase: For every 10ms there is a stop command followed.

```
IRISINC_ON=00P001~
IRISINC_OFF=00p001~00c001~
```

```
IRISDEC_ON=00C001~
IRISDEC_OFF=00p001~00c001~
ZOOMINC_ON=00I001~
ZOOMINC_OFF=00i001~00o001~00n001~00f001~
ZOOMDEC_ON=00O001~
ZOOMDEC_OFF=00i001~00o001~00n001~00f001~
FOCUSINC_ON=00N001~
FOCUSINC_OFF=00i001~00o001~00n001~00f001~
FOCUSDEC_ON=00F001~
FOCUSDEC_OFF=00i001~00o001~00n001~00f001~
MOVEAUTO_ON=00A001~
' "_" is for universal cancel
MOVEAUTO_OFF=00_001~
AUX1_ON=40aa
AUX1_OFF=40ba
AUX2_ON=40ab
AUX2_OFF=40bb
```

' Sample configured to LinLin PTZ protocol.

```
[MOVE01]
MOVEUP_ON=41a6
MOVEUP_OFF=41b6
MOVEDOWN_ON=41a7
MOVEDOWN_OFF=41b7
MOVELEFT_ON=41a8
MOVELEFT_OFF=41b8
MOVERIGHT_ON=41a9
MOVERIGHT_OFF=41b9
IRISINC_ON=41a0
IRISINC_OFF=41b0
IRISDEC_ON=41a1
IRISDEC_OFF=41b1
ZOOMINC_ON=41a2
ZOOMINC_OFF=41b2
ZOOMDEC_ON=41a3
ZOOMDEC_OFF=41b3
FOCUSINC_ON=41a4
FOCUSINC_OFF=41b4
FOCUSDEC_ON=41a5
FOCUSDEC_OFF=41b5
MOVEAUTO_ON=41ac
MOVEAUTO_OFF=41bc
AUX1_ON=41aa
AUX1_OFF=41ba
AUX2_ON=41ab
AUX2_OFF=41bb
```

' Sample configured to SONY EVI-D30,D31,D70,D100 PTZ protocol.

```
[MOVE02]
MOVEUP_ON=8101060102020301ff
MOVEUP_OFF=8101060102020303ff
```

```

MOVEDOWN_ON=8101060102020302ff
MOVEDOWN_OFF=8101060102020303ff
MOVELEFT_ON=8101060102020103ff
MOVELEFT_OFF=8101060102020303ff
MOVERIGHT_ON=8101060102020203ff
MOVERIGHT_OFF=8101060102020303ff
IRISINC_ON=8101043302ff
IRISINC_OFF=8101040b00ff
IRISDEC_ON=8101043303ff
IRISDEC_OFF=8101040b00ff
ZOOMINC_ON=8101040727ff
ZOOMINC_OFF=8101040700ff
ZOOMDEC_ON=8101040737ff
ZOOMDEC_OFF=8101040700ff
FOCUSINC_ON=8101040802ff
FOCUSINC_OFF=8101040800ff
FOCUSDEC_ON=8101040803ff
FOCUSDEC_OFF=8101040800ff
' Following items reset to the initial position
MOVEAUTO_ON=81010604ff
MOVEAUTO_OFF=81010604ff
AUX1_ON=81010604ff
AUX1_OFF=81010604ff
AUX2_ON=81010604ff
AUX2_OFF=81010604ff

```

' More protocols will be added to the list.

8.3 Reference tables

COM port				
Data	0	1	2	3
Port	com1	com2	com3	com4

Table 2 Com port selection

Baud table				
Data	0	1	2	3
Baud	CBR_110	CBR_300	CBR_600	CBR_1200
Data	4	5	6	7
Baud	CBR_2400	CBR_4800	CBR_9600	CBR_14400
Data	8	9	10	11
Baud	CBR_19200	CBR_38400	CBR_56000	CBR_128000
Data	12			
Baud	CBR_256000			

Table 3 Baud selection

Parity Table					
Data	0	1	2	3	4
Parity	No	Even	Odd	Mark	Space

Table 4 Parity selection

Stop Bits Table			
Data	0	1	2
Stop Bit	NONE STOP BIT	ONE STOP BIT	TWO STOP BITS

Table 5 Stop bit selection

' CAMERA SELECT DATA in hexadecimal

CAMERA SELECT DATA	
SELECT00	220000000000FF
SELECT01	220000000001FF
SELECT02	220000000002FF
SELECT03	220000000003FF
SELECT04	220000000004FF
SELECT05	220000000005FF
SELECT06	220000000006FF
SELECT07	220000000007FF
SELECT08	220000000008FF
SELECT09	220000000009FF
SELECT10	220000000010FF
SELECT11	220000000011FF
SELECT12	220000000012FF
SELECT13	220000000013FF
SELECT14	220000000014FF
SELECT15	220000000015FF

Table 6 Camera selection

9 Disclaimer

At the time of preparing this document, VidRev has attempted to ensure that the information in this document is accurate. However, VidRev does not:

- a) warrant that the information is accurate, or
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