

NETVIEW 2 OPERATING MANUAL

SysNova

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Installing the NetView 2

Warning: Do not move the unit whilst the power is connected and the hard disk is running.

Important note: Do not place heavy items on the unit

Choosing a location for installation

The NetView 2 is designed to be wall, rack or desk mounted. The following precautions must be taken when installing NetView 2:

- Openings in the unit's case are provided for ventilation. To prevent overheating, these openings should not be blocked or covered.
- When stacking units, ensure there is at least a 1/2" (1.5 cm) gap between each unit.
- Ensure there is a 1" (3cm) gap on either side of the unit.
- Ensure the unit is not located in an area where it is likely to be subjected to mechanical shocks.
- The unit should be located in an area with low humidity and a minimum of dust. Avoid places like damp basements or dusty hallways.

Wiring of the system

- While the wires are connected to the unit the power must be turned off
- Avoid shortage between the 12 Volt power supplies for the cameras and any other signal or ground since the 12 Volt solid state switches may be damaged.
- Check the polarity of the microphones. The red LED of the pre-amplified microphone should be on.
- The cameras are connected either directly to the screw-terminals (GND, signal V1 through V8 and the camera power supplies V1+ through V8+) or through an optional BNC expansion card. Connect in the second case the flat ribbon cable the appropriate header on the main board.
- The camera power supply can deliver a maximum of 300 mA which should be sufficient for most b/w and color cameras.

- The amplitude and the quality of the video signal decrease as the length of the cable increases. The input range of the video signal converter is 0.5 V peak-peak to 2 V peak-peak. If the NetView2 is at the end of the cable inserting the jumper corresponding to each camera should activate the on-board end of line resistor. • If other equipment has to be attached to the video cable, connect first the NetView2 unit to the cable without activating the end of line resistor and then connect the remaining equipment (using the end-of-line resistor of the remaining equipment).
- At distances of more than 100 m an optional differential driver/equalizer may dramatically increase the sharpness and the overall quality of the image.

Power-up of the system

Once all the wires are connected the system may be powered up. At startup all 8 LEDs indicating the camera selection are lit during a few seconds and then the system enters the mode before the last power down (idle or recording). Led xx should now start to blink at a rate of roughly 4 Hz. If that is not the case the system hangs and the user should wait one minute or reapply power. If the led doesn't blink the system is not functioning and should be returned for repair.

The time and date are kept in a non-volatile memory and need to be set only at the first start up after the replacement of the battery.

Connecting the system to the Network (LAN, WAN)

The unit has a 10-Base Ethernet RJ-54 interface which connects to the user's Ethernet LAN or to a router. In a (typical) application where a hub is used, a straight cable is needed. When the Ethernet connection is engaged, the middle LED of the group XXX is switched off. If the LED remains on, any configuration attempts of the IP-network will be fruitless since the base network layer is not working.

Time of life ping

It is possible to connect to the unit even if the IP-number of the unit is not known or event initialized. Therefore it is not necessary to enter the IP-number in the unit by means of a keypad, which is particularly convenient at startup. The special batch file `init_ip.bat` can be started with the new IP-number as the only parameter on the command line while the unit is powered up. During a time-window of a few seconds after start-up the unit will remember the pinged address (sent to a special MAC-address valid only at power up) and substitute its own address by the new address. At this point the user can communicate with the unit and program the remaining parameters directly through the network using IP (Internet protocol).

Using the NetView2 with a DSL/ADSL/Cable modem router

The NetView2 can be accessed from the Internet if a router is installed. The setup of the system can be frustrating, since a mistake is easily resulting in a failure of connection from outside. The following steps must be done:

1) Gateway in the NetView2. Since the communication takes place between two nodes sitting on different logical networks interconnected by a gateway (router), the packets transmitted by the NetView2 must be sent to the gateway instead of sending them directly to the peer node. Therefore the IP-address of the gateway needs to be known by the NetView2. It can be input by the keypad or by the menu.

The screenshot shows the 'Base Parameters' window of the NetView2 software. It contains several sections for configuring network settings:

- Transmitter ID:** A text field containing 'visar'.
- IP Address:** Four numeric keypad buttons showing 24, 56, 77, and 40.
- Mask:** Four numeric keypad buttons showing 255, 255, 255, and 0.
- Server #1 (alarm messages and polling):**
 - IP Server:** Four numeric keypad buttons showing 24, 56, 77, and 10.
 - Gateway:** Four numeric keypad buttons showing 24, 56, 77, and 1.
- Server #2:**
 - ID on Server #2:** A text field containing 'visar-2'.
 - IP Server:** Four numeric keypad buttons showing 24, 56, 77, and 10.
 - Gateway:** Four numeric keypad buttons showing 24, 56, 77, and 1.
- Port definition and download:**
 - Port for Receive:** A text field containing '1025'.
 - Port for Transmit:** A text field containing '6000'.
 - Connection Verification (Min):** A text field containing '1'.
 - Buttons: 'Download...', 'Accept', 'Set MACAddress...', and 'Close'.

2) Network Address Translation of the Router (NAT)

The Netview2 uses by default UDP port 1025. This port must be routed for all incoming traffic to the NetView2. Note that in the example given below, only entry 3 is actually used for the routing.

3) Firewall

The firewall must be opened for port 1025 and protocol UDP. If several simultaneous sessions are opened to view several NetView2s, more ports starting at 1026 must also be opened.

Web Configurator - Microsoft Internet Explorer
 Date: Beibehalten Ansicht: Standard English 2
 Zurück + Suchen Favoriten Medien
 Adresse: http://2456.77.1/ Wechseln zu Links

ZyXEL
 Time Warner Access Systems

Advanced Setup

- Initial Setup
- Advanced Setup
 - Port Forward
 - LAN
 - NAT
 - Dynamic DNS
 - Time Zone
 - Content Filter
 - Firewall
 - VLAN
 - Remote Management
- Maintenance
- Logout

NAT - Edit SUA/NAT Server Set

	Start Port No.	End Port No.	IP Address
1	All ports	All ports	2456.77.40
2	0	0	0.0.0
3	1025	1025	2456.77.40
4	1026	1027	2456.77.10
5	1503	1503	2456.77.11
6	1720	1720	2456.77.11
7	389	389	2456.77.11
8	522	522	2456.77.11
9	6000	6001	2456.77.11
10	0	0	0.0.0
11	0	0	0.0.0
12	0	0	0.0.0

Save Reset

Web Configurator - Microsoft Internet Explorer
 Date: Beibehalten Ansicht: Standard English 2
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Firewall - WAN to LAN - Rule Summary

The default action for packets not matching following rules: Block

☒ Default Permit Log

No.	Source IP	Destination IP	Service	Action	Log
1	Any	Any	*NetView2Jsp(TCP,UDP:1025)	Forward	None
2	Any	Any	HTTP(TCP:80)	Forward	None
3	Any	2456.77.11	*NetMeeting(TCP:389)	Forward	None
4	Any	Any	Any(UDP)	Block	None
5					
6					
7					
8					
9					
10					

Rules Reader: Move rule number 1 to rule number 1 Move

Back Apply Reset

Remote surveillance

To use the NetView2 unit for visualization and audio intercom, the included software packet FrontView is needed. Regular browsers like Netscape or Explorer are not suitable. The advantage of having special interface software is the possibility to offer a highly optimized and complete interface not suffering from the restrictions of a web-based program.

The program Frontview can be used in a stand-alone way or it can be started from a Central monitoring center software. All parameters are passed on the command line which looks like:

```
C:\visar\bin\Frontview.exe C:\visar\bin\frontview.ini /DOMAINKEY:"1 2 3 4  
5 6 7 8 9 10 11 12" /IP:24.56.77.40 /PWD:11111
```

The first parameter is the INI-file where the permanent setting information's are stored. The meaning of the other arguments is:

/DOMAINKEY : A unique key for a single domain of several NetViews needed for encryption. The maximum number of digits is 12.

/IP: The IP-address of the destination

/PWD: Password. The access to each of the 4 levels of the unit is protected by a password. Level 1 allows visualization and listening in real-time and playback mode, level 2 is needed for starting and stopping the recording as well as the configuration of the recording. Level 3 is required for the basic configuration of the unit (installer level) and level 4 allows the update of the firmware.

/DO_CONNECT: This attribute causes the frontview program to establish a connection automatically after startup.

/QUAD4, /QUAD8 : Starts the application with 4 respectively 8 images.

/DEBUG: Opens a tab with some debugging info

/ADMIN, /ADMIN2: Gives some access to controls on tabs reserved to administrator.

/SPEAKERNAME:a,b,c,d : initializes the names of locations where the speakers "a", "b", "c" and "d" are installed

/RELAYNAME:a,b,c,d : initializes the names of the devices controlled by the relay outputs

/ASK4IP: prompts the user for entering an IP number or symbolic name.

The frontview.ini file

The frontview program uses the following configuration data in the frontview.ini (in the default installation, the file resides in the \visar\bin directory):

```
[Check]
ConfigFileFound=1

[Arcnet]
NoBackPlane=0
IOBASE=0x3e0
NID=0x91
NDEST=1
PullUpSpeedByte=0x86

[Mode]
use_test_pictures=_Yes ; uses images test1, test2, test3 etc instead of logo1
requires_polling=_Yes ; does not require polling from higher system
requires_printer=_Yes ; does not require a printer
requires_receiver=_Yes ; requires a receiver
requires_password=_Yes ; requires a password at opening

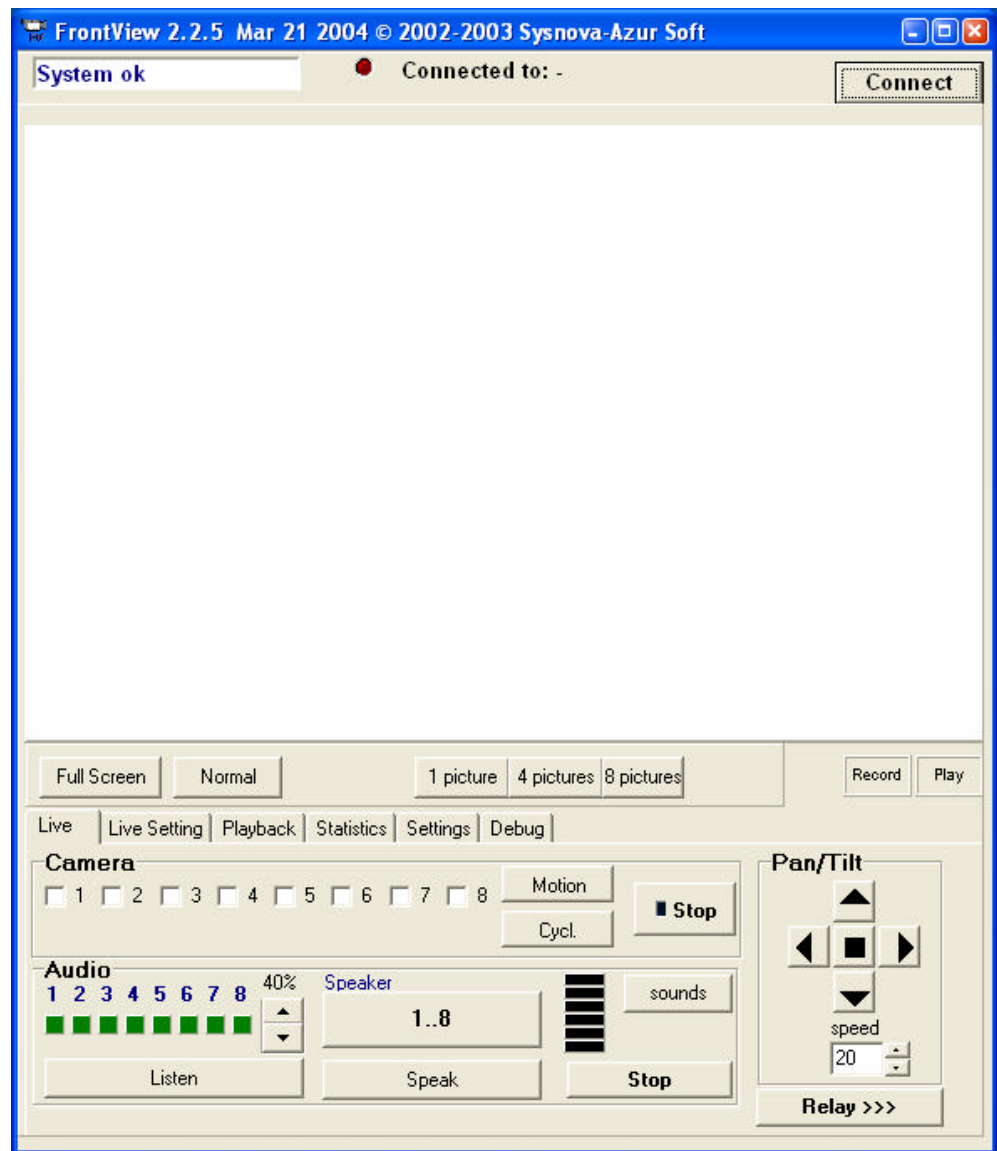
[Communication]
CommPort=COM1
SerialToArcnetConversion=0
Server=_HorusCom
ServerName=_SYSNOVA
DialHead=ATX4A3&U4&N4
;DialHeader=ATX0DT
;SeparationMark=48
HorusInstance=1
RemoteIPAddress=24.56.77.36
CommunicationChannel=COMMUNICATION_CHANNEL_IP
ArcnetLongTimeout=0
UseEncryption=1
HorusEventServer=
AllowArcnet=0
AllowMediaStorage=0
DoGenerateIndividualImages=0
RemoteIPPort=1025

[PcommDir]
MainDir=\visar\bin
ImageDir=\visar\video
AudioDir=\visar\audio
DataDir=\visar\data
MediaDir=\visar\media
ImageDirServer=
AudioDirServer=
HorusArchiveServer=
HorusArchiveServer2=
ImageReferenceDir=
PurgeRecordedFiles=0

[OperatingSystem]

[RunInfo]
LastCustomerNumber=112233
PasswordId=0
ExecShowReference=FALSE
PUC1=
NewCall=TRUE
Language=Francais

[Devices]
WaveDeviceNumberIn=0
WaveDeviceNumberOut=0
SpeakerVolume=13107
MicrophoneGain=8781352
NumericalSpeakerGain=2
```

Description of the controls:

Connect button: This button causes the program Frontview to attempt a connection to the unit selected by the IP-number. If the connection is successful, the panel “system ok” turns yellow. If the storage of the transmitted data is enabled, a new session-file is created and all received data is stored in this session file until the session is closed by pressing disconnect button (the “connect” button label changes to “disconnect”)

Camera check boxes, Motion button, Cycl button, and STOP button: The user can select a single camera by activating a single check box or it can cycle through all cameras in a round-robbing mode (Cycl) or controlled by motion detection (Motion). The STOP button stops all image transmission.

Audio check boxes, audio activity indicators, and speaker volume control: The user can select one and only one microphone at a given time for listen-in. However, while he/she is listening to one microphone, the activity of the other microphones is shown on the indicator-panels by a change of the brightness.

Speaker selection buttons, Speak button, VU-meter and STOP button: The user can select one of the two speaker groups for remote talking and transmit the audio signal captured by means of the microphone and the sound-system on the PC to the NetView. The VU-meter indicates the volume of the recorded speech and should be in the yellow zone for a clear and loud voice transmission.

The intercom is half-duplex and the user must use the speak and listen button to switch between the two modes.

The **Full screen, normal** button allow the user to switch to a mode where the image window is separated from the main form and can be changed to any size and back to normal.

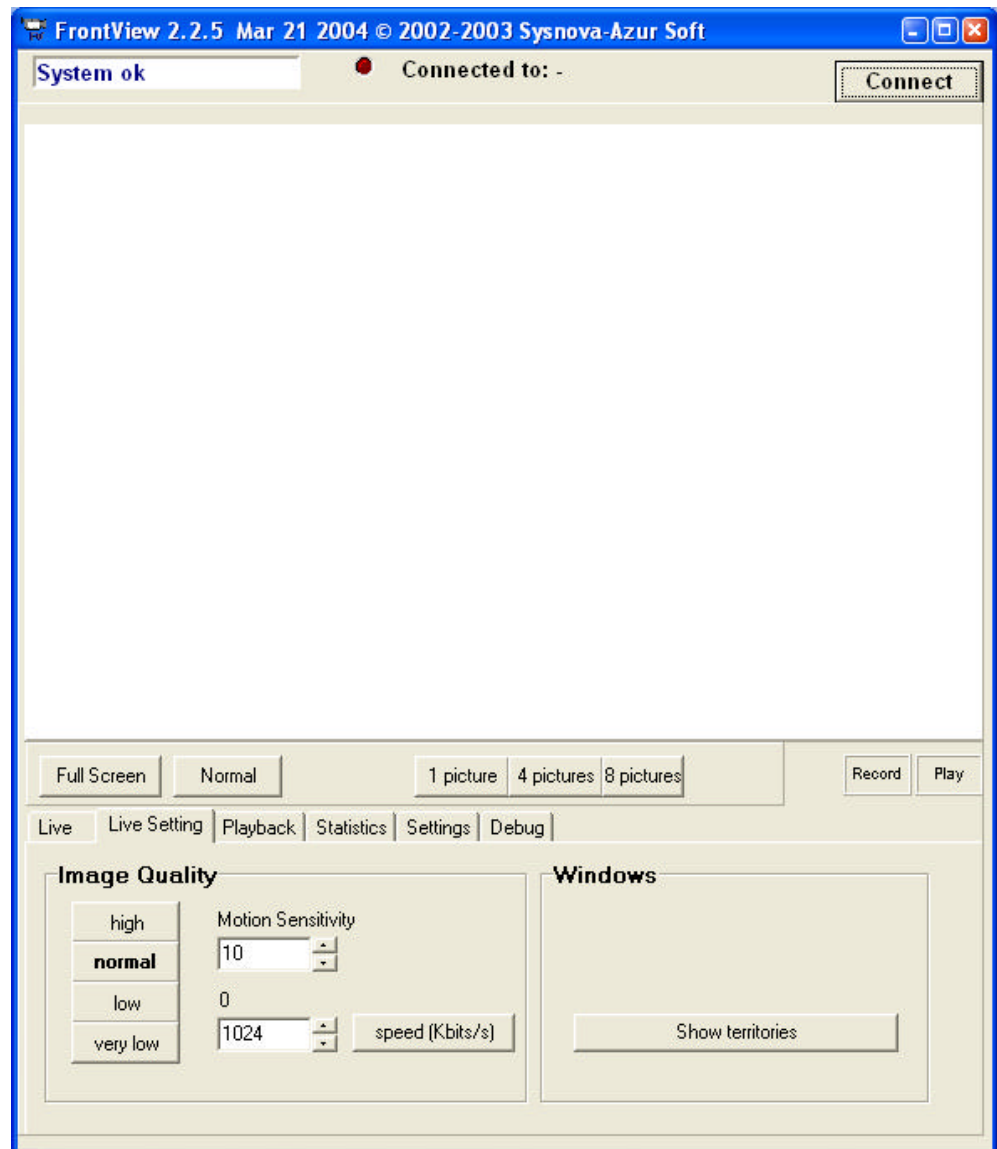
The button **1 picture, 4 pictures and 8 pictures** switch between a single image representation, a quad representation and a mosaic of 8 images.

The **Record** and **Play** panel indicate whether the system is in the recording mode or in the playback mode. After the session is closed (disconnect) the playback is stopped, the recording however is maintained. Therefore the red Record-Panel is set when the user connects to the system, if the system is currently in the recording mode.

Performance consideration and data rate

The system adapts dynamically to any speed ranging from 30 KBits to 1.8 Mbits / s. For simultaneous audio and video, a bandwidth of at least 35 KBits is required, the update of the video may then become excessively slow. The update rate of the video ranges from several seconds per image to up to 10 images per second. If the bandwidth is small, it may be advisable to lower the quality of the images (live setting folder). Another possibility is to use activity triggered transmission. In this mode, only images from cameras with motion are sent. The motion detection threshold is also set on the live setting folder.

Live setting folder



Recording with NetView2

All recording functions are protected by a password of level 2.

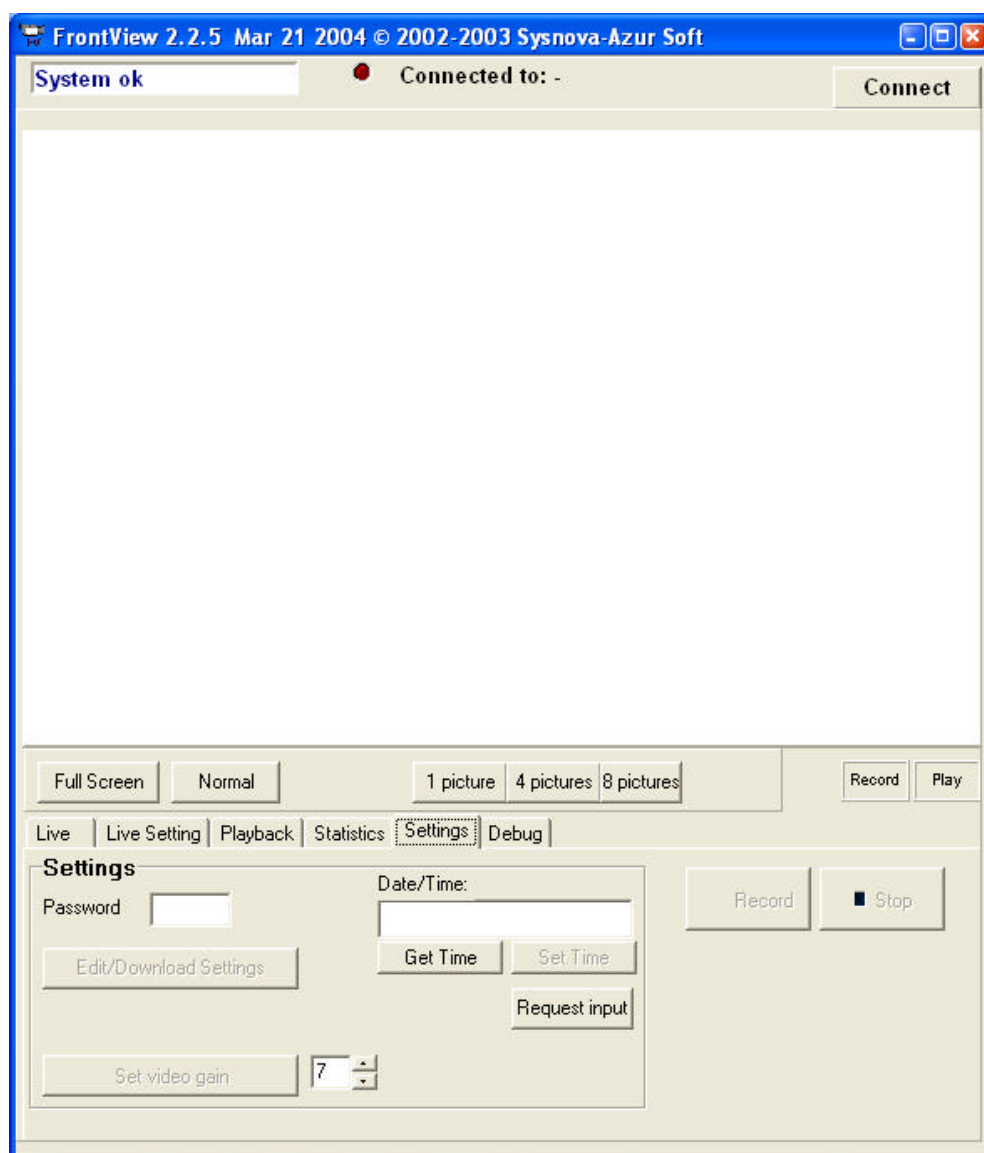
The following function are offered:

Erase disk: this function erases all data on the hard – disk and should only used with extreme care.

Edit recording: Since the configuration for recording is quite complicated, a special form for setting up the recording is provided. Once all data have been entered into

the form, the button download configuration stores the complete set to the unit, which stores the configuration in a non-volatile memory.

The buttons Record and Stop starts and stops the recording with the predefined configuration (stored in the NetView).



Playback

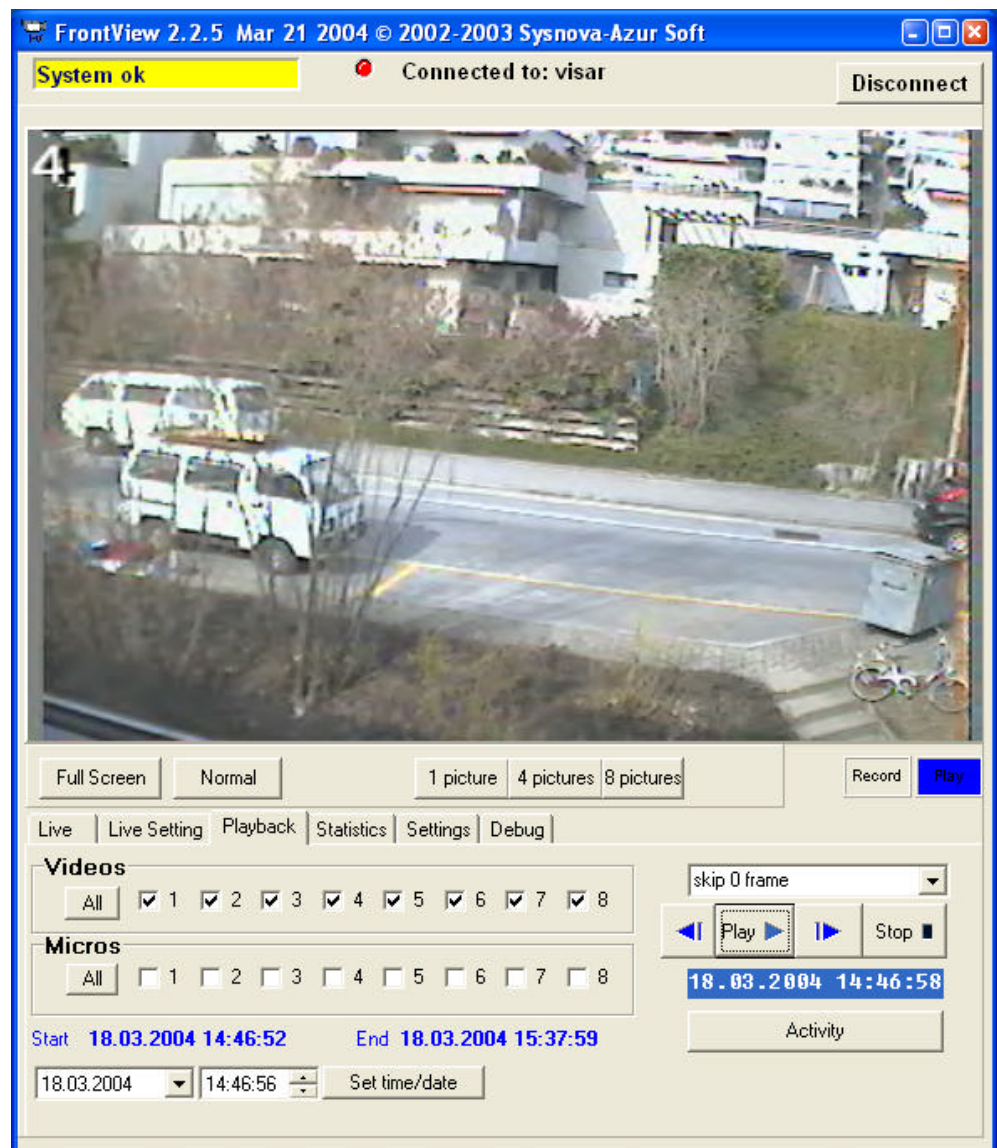
During playback, the video and audio data is read from the internal Hard disk of the unit. The playback mode allows viewing of one or several video channels as well as one audio channel. The video check boxes act as a filter and the user can select the cameras he/she is interested in. Only one audio channel can be selected.

There are several playback modes: real-time mode (audio and video), real-time x 1 mode, real-time x 2, etc, skip 0 mode, skip 1 mode, etc, and the raw mode.

In all real-time mode the system tries to keep up during transmission with the “real” time flow during recording. If the transmission channel is too slow the system will skip frames. The advantage of this mode is that user needs exactly one minute to scan through a recording period of one minute, at the cost of loss of data.

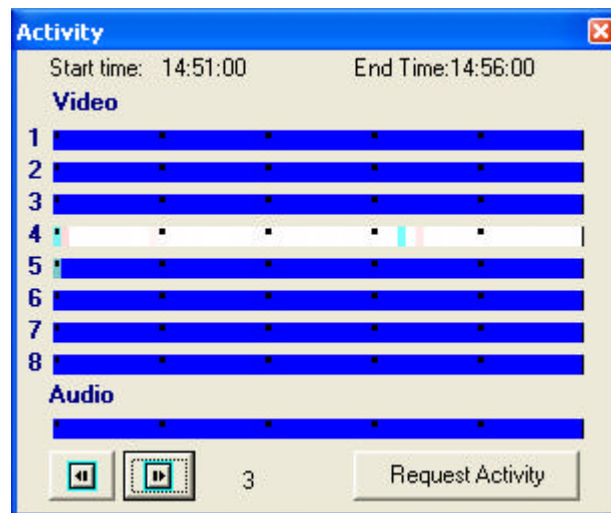
The frame-based mode allows looking at individual frames.

Finally in the raw-mode all data are transmitted as they are stored on the hard disk of the NetView.



Before the play back can be started, a starting time must be entered. By default, the time of the last recording is used. As an alternative the **Activity representation** can

be used. Clicking on the Activity button opens the activity window. Several tracks of different colors show the activity of the individual cameras and the user can click on any spot to have the system transmit the images associated to this event. By default, the last 5 minutes of recording prior to the connection are shown. If the user wants to look at earlier or later recordings he/she can use the arrow, which will move the time window by plus or minus 5 minutes. The red spots mean that motion has been detected, the turquoise color indicates that the recording on the given track has already been visualized (or listened to in the case of the audio track). Dark blue means that there is now information about the activity available.



Statistics

This folder shows different information about the storage like first LBA (linear binary address of a sector), last LBA etc. The logical storage architecture is a closed loop. Once the system has reached the end of the Hard-disk(s) it sets the writing pointer at the beginning and starts overwriting the oldest recordings. This method ensures that the longest possible history will be available and that the data loss caused by a power failure will be minimal.

Editing the recording parameters

This table allows the user to edit the whole configuration of the NetView2. In the current release of the product, some features are not yet enabled as it can be seen on the snapshot of the input form.

If continuous recording is desired, only the checkbox “In use” has to be checked and the capturing period needs to be set.

If motion detection is wanted, the “in use” needs to be checked. the sensitivity level entered as well as the duration. The “mic” input allows to record from the given microphone during the period of the duration. Once the period is over and no other motion has been detected the system automatically switches back to the default microphone.

In the current release, the alarm input is not implemented and only the “normal” configuration will be used.

	in use	always	control by zone								Motion				Duration(s)	mic	capture period (1/100s)
			1	2	3	4	5	6	7	8	motion sens	Relay	XRelay	Transmit			
1: normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
1: alarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
2: normal	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
2: alarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
3: normal	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
3: alarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
4: normal	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
4: alarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
5: normal	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
5: alarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
6: normal	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
6: alarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
7: normal	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
7: alarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
8: normal	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	
8: alarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>								0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	1	100	

default mic: 1
Motion Relay Base: 1

Download... accept Close

Download of recording parameters and start/stop of recording

Once the recording parameters are edited, the configuration can be downloaded. This action needs access level 3 (default password is 33333). The system will reset after download and the user has to reconnect to the system. The recording configuration is permanently stored on the unit and the user can simple start/stop recording according to the stored configuration. This action also needs the password of level 3.

It should be mentioned that system remembers the recording mode even during a power loss. Thus it cannot be stopped simply by cycling off the power switch.

Download of I2C input port parameters

I2c Parameters

I2C-Input Port Configuration

OK Cancel Download...

baudrate 1: 9600 baudrate 2: 9600 baudrate 3: 9600

Port	Used	Code	Closed	Alarm End	24h	Partial	Inhibit (s)
1	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
2	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
3	<input checked="" type="checkbox"/>	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
4	<input checked="" type="checkbox"/>	4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
5	<input checked="" type="checkbox"/>	5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
6	<input checked="" type="checkbox"/>	6	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
7	<input checked="" type="checkbox"/>	7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
8	<input checked="" type="checkbox"/>	8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
9	<input checked="" type="checkbox"/>	9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
10	<input checked="" type="checkbox"/>	10	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
11	<input checked="" type="checkbox"/>	11	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10
12	<input checked="" type="checkbox"/>	12	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10

Menu Mode

Menu mode is mainly used to enter the data which need to be known by the system before the supervisor can connect to it and download the rest of the configuration.

The following menus can be used

Code	Function	Factory setting	Level
101	Change IP number	24.56.77.35	3
102	Change IP mask	255.255.255.0	3
103	Change IP gateway 1	0.0.0.0	3
121-131	Password Level 1 (11 positions)	11111 for first position void for remaining positions	2

132	Password Level 2	22222	2
133	Password Level 3	33333	3
134	Password Level 4	44444	4
200	Factory initialization (code 7 2 5 6)		3
201	Report configuration		3
214	Call service number		2
613	Reboot the system		3
811	Input time		2
812	Input date		2
901	Change Mac address	0.1.0.0.0.1	3

In order to enter the menu mode, the security code of level 2 or level3 is entered. During menu mode, a slow periodic beeping can be heard. The menu mode is automatically left if the user doesn't enter any data for more than 1 minute.

Direct commands

A few commands can be entered through the keypad, mainly to control the local display:

Code	Function
11	Send camera 1 to video output 1
12	Send camera 2 to video output 1
13	Send camera 3 to video output 1
14	Send camera 4 to video output 1
15	Send camera 5 to video output 1
16	Send camera 6 to video output 1
17	Send camera 7 to video output 1
18	Send camera 8 to video output 1
21	Send camera 1 to video output 2
22	Send camera 2 to video output 2
23	Send camera 3 to video output 2
24	Send camera 4 to video output 2
25	Send camera 5 to video output 2
26	Send camera 6 to video output 2
27	Send camera 7 to video output 2
28	Send camera 8 to video output 2

End of draft.