

The Digital Video Surveillance System of Shuttle for Home and Office Applications



Product Description

The NVS-System is an innovative digital networking video system which belongs to the S-Vision product series of Shuttle. It is able to monitor, record, control and access many local and remote video cameras with analog video signal for any surveillance and documentary application.

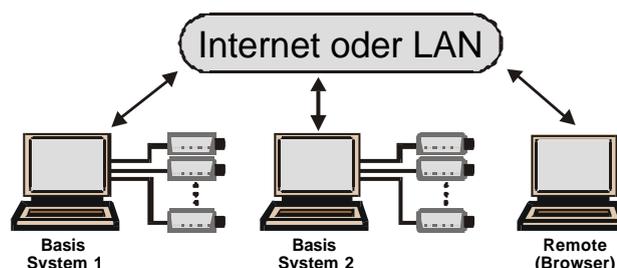
The NVS-System replaces ordinary analog video surveillance systems, which require expensive equipment such as quads, multiplexers, matrix-switchers and control units. Entire features are integrated in one unit and can be controlled under the user friendly Windows operating system.

Both, the in-house developed Image Compression Technology and the Intelligent Motion Detection features, provide efficient usage of the harddisk capacity, in order to achieve longest recording period of several weeks for each video channel.

Several NVS-Stations can be connected together through PSTN (via modem), ISDN, Internet, LAN and WAN, thanks to the networking ability of the NVS system. The transmission of high quality live-images and the surveillance and control of many remote NVS-Stations as well, mark out the comprehensive functionality of the NVS system. Multi-site alarm features complete the extensive surveillance functions of the system.

NVS is an excellent choice for the usage in small video surveillance equipment and in wide networking surveillance systems as well. A variety of setup settings allow the suitable configuration of the NVS for any specific needs in a wide application field range.

System Architecture:



General Surveillance Features

Windows 98 application

All functions of the NVS system are realized in one client software, which runs under the operating system Windows98/98SE on the NVS computer.

#Up to 16 video channels

Versions with 1, 2, 3 or 4 video boards for 4, 8, 12 or 16 video channels respectively for monitoring and recording are available.

Adjustable size and number of windows

The position of the monitored image on the screen can be setup individually by the advanced window technique.

Connection to existing security systems

The system can be connected to already installed alarm systems and other security facilities such as light, doors, access control etc. through optional integrated Input/Output-ports.

Pan/Tilt/Zoom control

You can easily control pan/tilt heads and other camera features such as zoom, iris and focus, for each camera directly from the user console.

Digital Recording Features

Long recording period through SCT

Due to the own special developed image compression technology SCT (for "Super Compression Technology"), a fast and high compression rate for each video stream is achieved.

Event triggered recording

One of the most important features of the NVS system is the event triggered record and alarm function. When motion is detected within the marked areas in the image, the intelligent image motion detection function releases certain initialized multi-site alarm functions which also include the image recording by event. Within one image can be marked up to 3 areas.

High quality recording

The NVS-Station is a real time multi-channel system which allows independent recording of all video channels simultaneously, in satisfied digital video quality.

Adjustable image quality

The image quality depends on the compression rate and can be adjusted according to the requirements.

Adjustable image resolution (NTSC, PAL)

In NTSC: 320x240, 240x180, 160x120 pixels
In PAL : 352x288, 126x192, 176x144 pixels

Adjustable image frame rate

The frame rate of each image is adjustable up to 30 frames per second. When all 16 channels are enabled the frame rate decreases down to not less than 2 frames per second.

Capture pictures during recording

While monitoring or recording, snapshots can be taken and stored as standard bitmap (BMP) files onto the systems harddisk. The captured pictures can be used as fast accessible material of evidence and can be printed out or sent by email to a remote computer very easily.

Recyclable recording

Video data can be recorded recyclable if required. This option assures the maintenance free continuous recording of the recent video images, for the designed recording period of the system, by erasing automatically the oldest video files when the free disk space reaches a certain limit.

Playback Features

Convenient video file search mode

The recorded video files are stamped by date, time, camera name and file length and can be searched and sorted easily in the video file table.

Adjustable playback speed

A variety of playback functions, such as fast search and slow motion in different speeds and pause, make a comfortable event search and tracking possible.

Detailed playback informations

Date, time and camera name are shown during video playback, therefore an event can be identified very precisely.

Playback during recording

Recorded video files can be played back without interrupting the recording and monitoring function of the system.

Simultaneously Playback of many video files

Many video files can be played back simultaneously even if the surveillance state is active.

Alarm Features

Alarm local messages

An alarm will be released when an event occurs within the set masked area of a monitoring or recording camera. NVS features the following functions for local alarm messaging:

- Alarm video recording for the alarm event period.
- Take pictures of the alarm event.
- Play warning sound file.
- Enable optional output ports for external alarm signals and switches.

Alarm remote messages with live image transmission

Following possibilities are available for the transmission of alarm messages to remote receivers:

- To telephone as sound message.
- To pager as text message.
- To NVS-Station with live image transmission of the alarm event. Both NVS-Stations are required to be connected over TCP/IP through LAN or Internet.

Remote alarm message

The real-time reception of an alarm video is possible on any computer which has installed the client NVS software and is connected over IP-Address to the network of the alarm transmitting station. Also customer based alarm sound files can be played to specify the remote alarm event.

Alarm logging table

The occurred alarm videos are listed in the alarm logging table in two separated groups. In the local group the alarms are stamped with date, time, camera name and alarm object. In the remote group the alarms are listed additionally with remote NVS-Station name and IP-Address.

Harddisk Full Alarm

If the remaining free space on the harddisk reaches the critical value defined in the system setup, the NVS-Station will play a warning sound through the internal sound card.

Control Features

PTZ Control

The client software of the NVS-Station supports easy and direct control of optional equipment like dome cameras, pan/tilt heads and lens features, such as motorized zoom, focus and iris. These remote components are connected via RS-485 interface directly or through external controller modules to the NVS-Station.

I/O-Port Control

The NVS-Station can be equipped with an optional I/O-module which supports 8 Input- and 8 Output-relay-ports. Contact switches, motion detectors and sensors can be connected directly to the Input-ports of this unit. Lights, warning sounds, electric doors etc. can be activated through the Output-relays. The alarm event captured by visual motion detection can be passed on already installed security systems.

Even more I/O-port modules can be connected via RS-485 interface to a single NVS-Station. Thereby remote sense and control signals can be transmitted over long distances up to 1200m and are insensitive to environmental disturbances.

Each I/O-port can be configured individually by the system software and can be controlled manually from the user console during a surveillance activity.

Management Features

Auto Start & Auto Record function

As soon as the NVS-Station starts up, the S-Vision client program will be automatically launched and the preset surveillance state will be activated.

Access security

The NVS system offers password protection with three access levels: Supervisor, Local User and Remote User. This security management prevents unauthorized access to local and remote operators.

Programmable recording

The NVS system will execute automatically the record or monitor function for each camera separately according to the schedule table which can be activated if required. This feature allows to create recorded video files only once or on daily, weekly or monthly repeated surveillance periods.

Programmable alarm activity

All available alarm messages can be initialized in a schedule to be active only during certain periods, e.g. every night. This feature allows to mark in advance the prohibited area of a camera and enable the alarm activity automatically only during the surveillance period.

Window layout

- The monitored camera images can be zoomed in/out or be displayed in full screen.
- The auto scan function displays all enabled cameras to each image window periodically.
- Size and position of the image windows on the screen can be saved just by mouse click.

This feature helps to restore the desired overview of the monitoring cameras, if any other activities have rearranged the screen layout of the NVS-Station.

Network Features

Networking ability

Many NVS-Stations can be linked together through the NVS-Server software module. Using TCP/IP for a reliable data transfer, connections can be build through local area networks (LAN), Internet or PSTN by modem. Unauthorized access to the video server will be denied due to password protection.

Multi-link video system

- More than 16 cameras can be observed in a local surveillance system by linking two or more NVS-Stations together through Local Area Network (LAN).

- Several remote NVS-Stations can be linked together through Wide Area Network (WAN) or Internet. In order to achieve a sufficient image transfer rate, a network connection with adequate bandwidth should be used.

The images from a camera can be monitored or recorded at several NVS-Clients in the network simultaneously.

Auto Restart & Link Network function

The NVS-Server starts automatically after system boot up. The NVS-Client can connect itself automatically to a pre-selected NVS video server. Thus, all NVS-Stations are automatically linked together to a homogeneous video system.

Remote monitoring & recording (during local recording)

Outstanding feature of the NVS system is the simultaneously monitoring or recording of the images of many cameras from a remote NVS-Station. The remote images can be received without affecting the surveillance functions (monitoring, recording, event alarm) of the local cameras.

Remote control of I/O-modules, pan/tilt heads, dome cameras, zoom/iris/focus

Any remote NVS-Station can be equipped with dome cameras, relay switches and other motorized camera features. These components can be easily controlled from a single NVS-Station, when both local and remote stations are linked over the NVS-Server module.

Accessories

Internal I/O-module (NVS-8180)

8 edge triggered Input-ports for 5V to 12V DC and 8 relay switches (normally open or close).

RS-232/485 converter (NVS-7520)

RS-485 converter for the serial port interface of NVS.

Input-port controller module (NVS-811)

8 Input-ports controlled through NVS-7520 (with RS-485 interface).

Output-port controller module (NVS-908)

8 potential-free relay Output-ports (n.o/c) controlled through NVS-7520 (with RS-485 interface).

PTZ controller (NVS-820)

Pan/tilt-head-/Zoom-receiver module controlled through NVS-7520 (with RS-485 interface).

Pan/tilt head (scanner)

Indoor pan/tilt head (NVS-302) and outdoor pan/tilt head (NVS-301), controlled through NVS-820.

TV converter (NVS-100)

External module for RGB to FBAS composite signal conversion (TV-Out).

Specifications**# Connectors**

Video input:	FBAS / 1Vss / 75 Ohm, BNC-jack Model NVS-2000A: 4 video channel Model NVS-2000B: 8 video channel Model NVS-2000C: 12 video channel Model NVS-2000D: 16 video channel
Monitor output:	VGA, 15-pol. SUB-D connector
Parallel interface:	1 x 25-pol. SUB-D for PC-printer
Serial interface:	2 x RS-232, 9-pol. SUB-D for RS-485 adaptor
Audio connectors:	Microphone input, line input, line output, stereo, 3,5mm cinch jack
Keyboard, mouse:	2 x PS/2 connectors
USB ports:	2 x USB connectors
Network interface:	Ethernet 10/100Mbit/s, 10BaseT, RJ45jack (option)
DC voltage output:	12V DC / 500mA (option)
Input-/Output-ports:	8 signal inputs (edge triggered 5..12V DC), 8 relay outputs (potential free) (option)

Image processing

Video norm / resolution:	NTSC / 320x240, 240x180, 160x120 pixels PAL / 352x288, 256x192, 176x144 pixels
Compression:	SCT (Super Compression Technology)
Compression rate:	Dynamic range 40:1 ~ 240:1, depends on image change rate and quality
Max. frame rate:	30fps (NTSC) / 25 fps (PAL), 1 channel

Digital recording

Video file length:	Adjustable in 10, 20, 30, 60 min.
Image quality:	Adjustable in 16 levels, standard: level 8, middle: level 12, high: level 16
Overall recording speed:	

At 352x288 pixels (PAL) :
1 channel : 25 frames /sec
2 channels: 12.5 frames /sec
3 channels: 6.5 frames /sec
4 ~16 channels: 2.5 frames /sec
Capture static pictures (BMP)

Storage facility:	1 to 3 harddisks, 30GB to 120GB
Recording mode:	Recyclable recording, harddisk full alarm
Storage capacity:	

1 camera, 352x 288 (PAL), middle image quality (level 12), 4 fps					
Motion	Example	Data rate	MB/h	30GB	Period
95%	Road traffic	3 MB/min	180	166 h	7 days
85%	Access control	1 MB/min	60	500 h	3 weeks
10%	Night guard	0,1 MB/min	6	5,000 h	6 months

Record function:	Continuous Triggered by event Schedule (for each camera: only once, daily, weekly, monthly) Switched (through I/O-port) Remote access
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Playback

Searching mode:	Calendar, date, time, camera name, alarm log
Playback function:	Adjustable fast forward and slow motion by 2x, 4x, 6x, 8x, 10x, pause
Screen split mode:	1, 4, 8, 12, 16 images as fullscreen or variable Window size stamped with Camera name, date, time
Recording / playback:	Full duplex – simultaneous recording and playback
Alarm logging:	Immediate playback of recent recorded alarm videos

Alarm events

Multi-masked area:	Up to 3 individual surveillance area masks per camera
Motion Sensitivity:	Adjustable in 32 levels
Local alarm messages:	<ul style="list-style-type: none">✗ Event triggered recording✗ Warning alarm sound (WAV files 24kbps ADPCM)✗ Capture event pictures✗ Enable I/O-ports
Remote alarm messages:	<ul style="list-style-type: none">✗ Send alarm video image to remote station✗ Send voice message to telephone (PSTN or mobile)✗ Send text message to pager

Remote access

Features:	<ul style="list-style-type: none">✗ Monitor remote video images✗ Record remote video images✗ Control remote DOME-/ PTZ-cameras✗ Enable remote I/O-ports✗ Capture remote static pictures
Connection modes:	<ul style="list-style-type: none">✗ Through LAN with Ethernet (TCP/IP)✗ Through Internet (TCP/IP) via modem (analog, ISDN) or dedicated line (router)✗ Through PSTN via modem (analog, ISDN)
Image transfer speed:	352x288 (PAL) : min. 1 frame per second 320x240 (NTSC) : min. 1 frame per second

Security

Log function:	Logging list of all alarm events and password accesses
Password protection:	3 levels: Supervisor, Local User, Remote User
Watchdog Function:	Supported by internal Input/Output-card (option)

Other features

19" 4U Rack robust industrial case
Measurements: 50 x 43 x 18 cm
Weight: approx. 10-12 kg
230V AC / 50Hz voltage supply incl. power cable
Real time clock, automatic summer / winter time adjustment