Product Information

NETrec

High Speed Digital Recorder with up to 200 Frames per Second, 8 or 16 Video Inputs, M-JPEG or MPEG2 Compression with High Resolution

Product Data

- recording speed up to 200 frames per second
- resolution 720 x 288 pixels (in conformity with UVV-Kassen)
- either M-JPEG or MPEG2 compression for each camera
- Linux operation system for high operational safety
- operation in the integral**net**® concept
- expanded motion detection function
- Movecontrol control of cameras
- audio recording and transmission
- automatic capacity calculation
- preset-synchronous recording
- Logic Search function for easy picture replay
- recording of IT**cam**s in Storage Server concept
- SMARTarea® function

Description

With the NET**rec** system a modern, network based high speed recorder with high image quality, high recording speed, very extensive functionality and integral**net**® connection becomes available.

Two NET**rec** versions are currently available. The NET**rec**/8 can process the signals of 8, the NET**rec**/16 of 16 analogue cameras. With the option NET**rec**/+digital16 it is possible to additionally record 16 network cameras via a LAN interface in the Storage Server concept. Motion-selective recording becomes possible when using a web camera with motion detection function.

The digital recorder is based on the Linux operating system and allows parallel recording of up to 8 cameras with 25 frames per camera / second (live) (NET**rec**/16). A different compression method can be selected for each individual camera. With M-JPEG compression a good compression result at high resolution is achieved in time lapse operation. When recording continuously in MPEG2 operation an even better result can be achieved. This makes it possible to reduce the image to be recorded to the optimal size for each camera situation and to make optimal use of the available hard disk capacity.

The SMARTarea® function allows to mask areas in the MPEG2 image detail that are unimportant to the viewer, e.g. tree-covered areas.

NET**rec**

The patented SMARTarea® function on the one hand makes an even higher degree of compression possible and on the other hand allows to completely mask areas. This masking (privacy zones) can selectively be carried out for live image and/or recording. If a user for instance should not be allowed to monitor a specific area in the live image, but this area is still - due to security requirements - to be recorded, than this can be achieved with the SMARTarea® function - and vice versa.

In the basic version the NET**rec** system comes with a 120 GByte hard disk, different sizes are available for expansion. In total the system can manage up to 6 IDE (internal) and 15 SCSI (external) hard disks.

The maximum number of pictures to be recorded and the maximum recording time (in days, hours, minutes) - considering all parameters set by the user - is automatically calculated in the configuration software (memory management).

Recording is carried out either as ring recording or as direct alarm recording.

Ring recording

In ring recording the respectively oldest information in the ring gets overwritten when the ring is full. The ring can be set up for each camera or can consist of a recording of different cameras. These rings can be saved via contact (alarm) or via calendar, thereby protecting these areas from being overwritten.

For bank applications the system is equipped with several parallel rings for suspicion- and alarm recording.

After an alarming a new ring is automatically started for the recording after the alarm. As a novelty the NET**rec** system offers the possibility to switch between image qualities and compression methods. If a daily ring recording for instance is carried out with high compression in M-JPEG, the system can switch to highest quality in MPEG2 in the event of alarm.

Due to the fact that any number of rings can be assigned for each camera, hard disk capacity is the only limitation for recording.

Especially camera-selective ring recordings thus offer a multitude of recording possibilities.

Finding recorded pictures is very easy. Although the cameras are recorded in different rings a parallel (simultaneous) display of the images can be carried out via multi-picture search.

Alarm recording (sequence recording)

A targeted recording can be carried out in case of contact-triggered recording. Recording of up to 10 pre-alarm images is also possible. These recordings are afterwards presented in a clearly laid out selection list.

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The resolution of the NET**rec** can be freely selected for each type of compression and camera. For MPEG2 and M-JPEG the resolutions 720 x 288 and 352 x 288 are available. It is possible to set image quality in 10 steps.

An integrated motion detection function with 256 fields allows targeted, event-triggered ring recordings in dependency of the calendar (M-JPEG and MPEG2). With an “&” link to a freely selectable pre-alarm field interfering influences can be minimised and it is possible to record only persons that enter from one direction; if required also with 10 pre-alarm images. This can significantly reduce data to be stored and simultaneously makes an even faster finding of important video images possible.

All actions or information of the NET**rec** systems can be individually controlled via the integrated calendar. This makes e.g. individual recording at different times of the day possible.

An extensive alarm processing is integrated into the NET**rec** system. Alarms can be activated via 9 (NET**rec**/8) respectively 17 (NET**rec**/16) input contacts. These contacts can trigger:

- direct recording in the event of alarm triggering incl. pre-alarm time
- sensor arming in the event of alarm triggering
- sensor arming in dependency of the calendar in the event of alarm triggering
- ring area locking in the event of alarm triggering

An additional contact with overriding importance allows general alarm triggering. In addition to the recording the user also gets an alarm information in the form of a display on the screen or in the form of voice information. It is furthermore possible to transmit an e-mail incl. alarm image attachment and to carry out an active connection to another client via LAN or ISDN. 4 (NET**rec**/8) respectively 8 (NET**rec**/16) relay contacts as well as an additional relay contact with overriding importance allow additional information output.

By a targeted setting of reference areas in an image the NET**rec** can be enabled to report sabotage to the user if the camera gets moved out of position or if paint is sprayed on its lens. The reference areas are checked cyclically, any video signal loss is reported to the user. All reports are documented in a LOG file.
System failure is reported in different ways. Depending on the type of failure it can be signalled in the front display, via the RS232 interface or via the network connection.

The large info display on the front - in addition to displaying status information - offers the possibility to display an individual text, e.g. the telephone number of the service company.

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Dome cameras or pan/tilt heads connected to the NET**rec** can be controlled in an easy and efficient way. The cameras are connected to the NET**rec** system via VNI modules. The patented Movecontrol control panel in the graphical user interface of the monitor software allows easy camera operation. Thus the NET**rec** system not only functions as a recorder but instead is also central technology for the complete video system.

A preset-synchronous recording of all cameras is possible if cameras with preset positions are used. The positions, order and dwell times at the corresponding positions are freely definable and can be e.g. started via calendar.

A monitor place licence (option) can be used for remote operation and remote maintenance via LAN or ISDN (option). This makes it possible to configure and operate the complete system as if being on site.

The optional DynIP software module allows dynamic IP assignment in order to get access to the system via internet with a standard internet browser. All functions can be enquired and configured with VPN (Virtual Private Network) via internet.

In addition to video recording the NET**rec** system is also equipped with audio channels in MPEG2 mode - 4 audio channels (mono) for NET**rec**/8 and 8 audio channels for NET**rec**/16. Audio data can be played either live or during recording replay synchronous to image data and can be listened to on a standard PC via TCP/IP. Recording of audio data can be activated respectively deactivated parallel to the MPEG2 image stream via the signal inputs or the calendar.

Time and date can be set via external servers, both are cyclically updated via TCP/IP. This ensures that all NET**rec**s operate with the same time, even in larger systems. In case that no server is present one NET**rec** can be defined as master clock - all other NET**rec** systems then will synchronise themselves to this master clock.

An integrated multi-user and level administration allows the following access entitlements for up to 4 users: administrator, live image access only, live image access and image replay, export images, delete images, external access via ISDN, pan/tilt control.

A free of charge software update (available: fourth quarter 2003) will allow to monitor - on an FBAS video output or a connected VGA monitor - live video images in an easy and efficient way and to select recorded sequences at the device itself.

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The complete scope of functions is available via the LAN network interface even for multi-user operation. In addition to the 10/100 Mbit network card included in the scope of delivery it is also possible to operate an optional 1000 Mbit network card in the system.

For ease operation, configuration and operation are split into two software modules. In the configuration software all settings are carried out in clearly arranged menus. The graphical user interface of the monitor program allows easy operation of the system by the user.

Monitor program

Live image

In the monitor program one can choose between full- / quad- or multi-screen for the display of live images. In addition to viewing images it is also possible to control connected pan/tilt- or dome cameras via the Movecontrol panel and to activate relays. A manual, camera-selective recording can be started with a corresponding recording button.

Recording evaluation

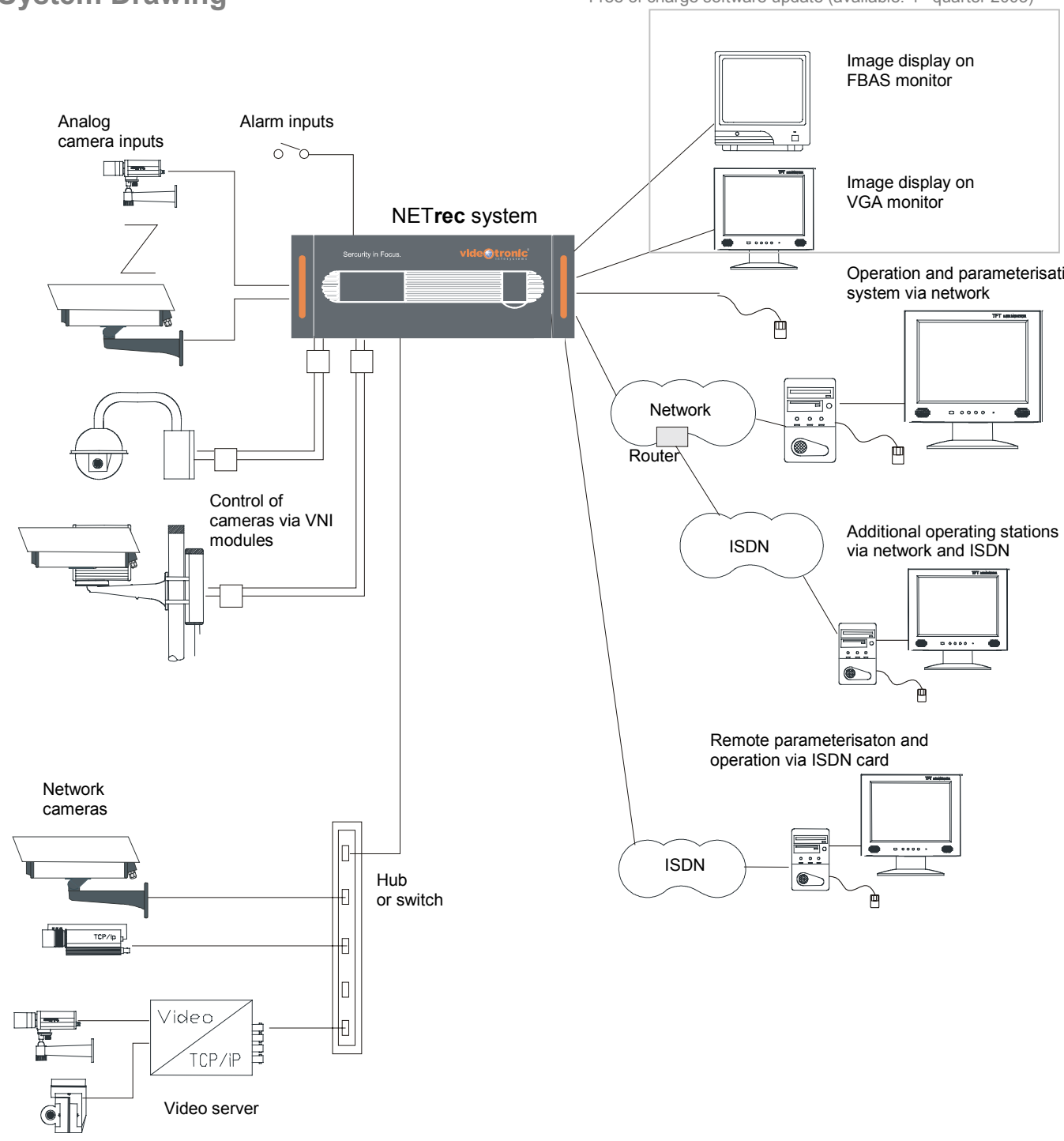
One can search for recorded image information according to time, date and camera number, the alarm recording information (locked ring areas) is filed in a list.
Two options are available for searching for images in the permanent recordings. The first is to search for an image via a manual full image or multi-image search, the second is to search via the Logic Search function. The Logic Search function allows to mark an area in the image and then automatically finds all changes that took place in this area (24 hours are searched in approximately 4 minutes). The found sequences are listed in a selection list and can selectively be replayed according to time and date. This makes finding relevant image information very fast, even in long recordings. After finding the searched for sequences it is possible to export these in a special file format (incl. viewer). This information can be archived, e.g. on DVD or CD-ROM with a corresponding writer in the local PC. A direct print-out of the image information incl. data on a network printer is possible.
Furthermore included is an auto-backup function for alarm sequences. With this function data of the NET**rec** system is exported to a user-specified server in the network at a specific time of day.

Configuration program

The configuration program allows the complete parameterisation of the system via clearly arranged menus. Means of communication (e.g. e-mail via LAN) as well as recording parameters (with integrated automatic capacity calculation) are defined here. Furthermore it is possible to e.g. selectively set each video channel's brightness, contrast, colour saturation and activation level for sabotage.

NETrec

System Drawing



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Technical Specifications

	NETrec/8	NETrec/16
Video inputs	8 (F)BAS (BNC)	16 (F)BAS (BNC)
Audio inputs	4 x mono 22 kHz / 8 bit (MPEG2 mode)	8 x mono 22 kHz / 8 bit (MPEG2 mode)
Network cameras	16 (1 LAN interface) with NETrec/+digital16 option	
Alarm inputs	8 (external contacts) terminal screws	16 (external contacts) terminal screws
Control input	1 (external contact)	
Alarm outputs	4 (switch-over contacts) terminal screws	8 (switch-over contacts) terminal screws
Control output	1 (relay)	
Resolution	720 x 288 pixels or 354 x 288 pixels Pixel (in conformity with UVV-Kassen)	
Compression	M-JPEG or MPEG2 (incl. SMARTarea codec) freely selectable for each camera input	
Image quality levels	1 -10 levels	
Image sizes (M-JPEG/MPEG2)	15 - 60 K / MPEG2 variably high compression depending on image content	
M-JPEG recording speed (non-synchronous or synchronous)	total 100 images / second = 8 cameras parallel with 12.5 images / second	total 200 images / second = 16 cameras parallel with 12.5 images / second or 8 cameras parallel with 25 images / second
MPEG2 recording speed (non-synchronous or synchronous)	total 50 images / second = 8 cameras parallel with images / second	total 100 images / second = 16 cameras parallel with 6 images / second or 8 cameras parallel with 12.5 images / second
Hard disks	min. 120 GB hard disk integrated, additionally 5 internal IDE hard disks and 15 external SCSI hard disks possible	
Capacity calculation	automatically via configuration program	
Storage areas	any number of rings (each camera/different cameras), any number of alarm rings (with changing image quality/compression mode), alarm sequence, limited only by hard disk memory	
Alarm recording	direct recording in case of alarm triggering incl. pre-alarm time, ring area locking in case of alarm triggering	
Recording start	external contact, motion detection, calendar or combination of all three	
Motion detection function	256 fields / 6 sensitivity levels for each video input incl. pre-alarm field with adjustable stay time (w/o performance loss of the system	
Text display	30 characters / video input	
Password protection	integrated multi-user- and level administration for up to 4 users different access entitlements: administrator, live image access only, live image access and image replay, export images, delete images, external access via ISDN, pan/tilt control	
Image display	1, 4 or 9 cameras	1, 4, 9, 13 or 16 cameras
Interfaces	2 serial interfaces (RS232) (1 x system set-up / 1 x data information to external systems (9 pole Sub-D socket)), 1 x PS2 mouse connection	
Recording replay	up to 25 images / second, single image, full image, or multi-image, Tetraplex mode for simultaneous image replay (permanent recording/alarm recording and evaluation from several stations)	
Search criteria	finding sequences according to time, date, camera number or, in permanent recordings, via Logic Search function and multi-image slider search	
***Signal output* video signal**	1 (F)BAS monitor output for image display and basic recording evaluation available: 4th quarter 2003 (free of charge software update)	
***Signal output* VGA**	1 VGA monitor output for image display and basic recording evaluation available: 4th quarter 2003 (free of charge software update)	
***Signal output* network**	1 (LAN) Ethernet western socket for complete operation of allfunctions of the NETrec system, operation via monitor program, system parameterisation via configuration program	
Remote operation and maintenance	via ISDN option, ISDN-HeiTel option, via remote network connection (LAN/WAN/Internet), via option DynIP with standard internet browser over internet VPN (Virtual Private Network)	
Log file	for documenting all events (download as .txt file)	
Operating system	Linux	
Scanning system	CCIR, 625 lines, 50 Hz/PAL / NTSC, 525 lines, 60 Hz/NTSC	
Operating temperature	0° to 60° C	
IP rating	IP 42 / cl. III	
Operating voltage	230 VAC / 110 VAC / 300 W	
Metal housing	19“ rack, 4 U	
Weight	min. 13 kg (depending on hard disk configuration	
Dimensions (W x H X D)	423 x 172 x 390 mm	
Options	**HD-XXGB** = for expanding the storage capacity **ISDN** = for remote maintenance and evaluation Net/1000Mbit = for network connection with 1000 Mbit network card **VNI series** = for controlling dome- and pan/tilt technology **NETrec/+Digital16** = for expanding the system with max. 16 digital video inputs **NETrec/MON** = licence for an additional monitor station **DynIP** = software for dynamic IP address assignment for internet access	

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