



NETWORK VIDEO RECORDER

Video surveillance is an integral and critical part of an organization's security strategy. Organizations expect 24x7x365 uptime for live monitoring and tracking events. Video quality, reliability and dependability are the hallmarks for selecting a professional video surveillance solution.

Presenting Matrix SATATYA NVR – An IP video surveillance solution for centralized surveillance management which removes the burden of excessive cabling and maintenance. The system is well equipped with latest functionalities like feature rich Centralized Management Software, Web Client and Mobile Application that today's security sensitive organizations require. This thoroughly engineered NVR is highly efficient in strengthening security and increasing productivity and discipline in an organization.

Do not trust cheap SOHO products for your video surveillance security. Trust Matrix SATATYA - video surveillance solutions specifically engineered for enterprises.

SATATYA NVR SOLUTION



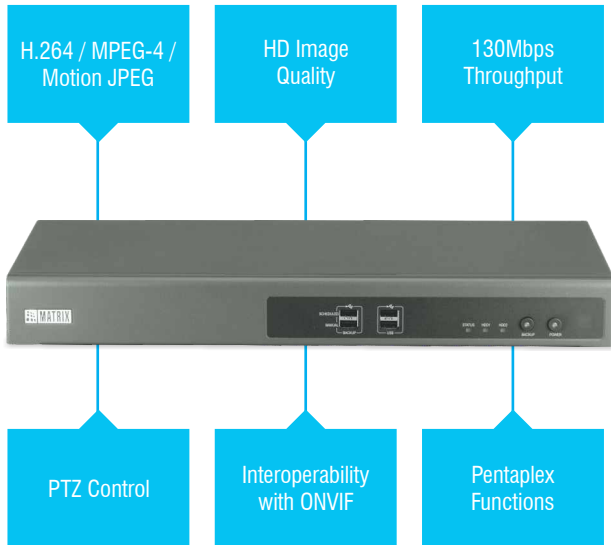
NVRs • CMS • Web Client • Mobile Application • IP Cameras

Why Matrix SATATYA NVRs are the best-in-class enterprise-grade Network Video Recorders?

Matrix SATATYA NVR series is best suited for enterprises with features like Full HD Recording and Playback, Remote Monitoring, Smart Search, Backup Redundancy and Event Alerts. These features safeguard an organization from security vulnerabilities.

Key Features	MATRIX SATATYA NVR
Recording	<ul style="list-style-type: none">• Camera wise Motion and Scheduled Centralized Recording• Supports Full HD Recording of all Cameras
Monitoring	<ul style="list-style-type: none">• CMS, Web Client, Mobile Application and Local• Monitor Multiple NVRs from a Single NVR Locally
Playback and Search	<ul style="list-style-type: none">• Timeline and Event based Search• Synchronous and Asynchronous Playback
Backup	<ul style="list-style-type: none">• Scheduled and Manual Backup on USB/FTP and NAS• Crop and Backup in AVI Format
Data Storage and Security	<ul style="list-style-type: none">• Camera wise Recording Retention• RAID0 and RAID1 Support
Event	<ul style="list-style-type: none">• Motion Detection, View Tamper and Connection Failure• Manual Trigger, Storage Alert, Disk Volume Full
Notifications	<ul style="list-style-type: none">• SMS Notification, Email Notification with Snapshot• Calling assigned Contact Number from SATATYA Mobile Application
Network	<ul style="list-style-type: none">• Dual Gigabit Ethernet Ports for 130Mbps Throughput• Addition of Cameras from 2 Different Networks
Connectivity	<ul style="list-style-type: none">• Mobile Broadband (3G/LTE)• Free Matrix DNS
Bandwidth Optimization	<ul style="list-style-type: none">• Dual Streaming for Viewing and Recording• Camera wise Constant and Variable Bit Rate
User Management	<ul style="list-style-type: none">• Camera wise User Roles and Rights• IP and MAC based Access and Blocking of Users
Integration	<ul style="list-style-type: none">• Ethernet based Integration with Matrix Access Control• 3rd Party Integration with Access Control and Fire Alarm
Interoperability	<ul style="list-style-type: none">• All ONVIF or RTSP Compliant Cameras• Direct Support of Axis, Acti, Vivotek, Sony, Samsung, Panasonic and other Brand Cameras

SYSTEM FEATURES



Video Compression Formats

Built-on H.264/MPEG-4/Motion JPEG compression standards, SATATYA NVRs reduce the amount of bandwidth to transmit and memory to store videos. This reduces overall network and storage costs and increases effectiveness without compromising on image quality during recording and playback.

Full HD Image Quality

Higher resolution increase clarity and brings out details in the images making it easy for users to identify and respond faster. The SATATYA NVRs offer a combination of high image (HD) quality and high frame rates optimizing image quality.

Higher Throughput*

SATATYA NVR24P has two gigabit Ethernet ports for distributing network traffic. These two Ethernet ports ensure smooth and continuous viewing even during high activity period by the sharing network load. Moreover, IP cameras from two different networks can be added to the SATATYA NVR24P .

Interoperability

SATATYA NVRs are ONVIF compatible. Customers can build a solution using Matrix NVRs and cameras from other manufacturers. In addition, Matrix NVRs support almost all popular IP camera brands using RTP/RTSP. If a user and the camera are in the same network, users can get video directly from the camera even if the NVR is in a separate network. This reduces usage of bandwidth for local viewing.



Pentaplex Functions

A video recorder's performance is measured on how effectively it performs five functions - live recording, monitoring, playback, backup and remote access functions simultaneously. SATATYA NVRs are designed to perform all these functions simultaneously without degrading its performance.

PTZ Control*

Pan, Tilt and Zoom (PTZ) are very important functions for any real-time surveillance application. SATATYA NVR24P allows connections up to 24 PTZ cameras. Users can control these cameras from Web Client, Mobile Application, CMS and local NVR GUI. PTZ tour supports up to 64 different camera positions per channel covering large area with special zoom-in on critical zones.

System Health Status

Admin can monitor system functional status and events in real time including hard disks status, storage, motion detection, connection, manual recording, tamper, alarm, PTZ tour, sensor input, etc.

User Interfaces*

MATRIX SATATYA NVR24P offers wireless mouse, remote control and IR extender for easy and intuitive user experience.

Universal Plug n Play (UPnP)

Universal Plug n Play (UPnP) is a set of networking protocols permitting networked devices to discover each other for data sharing and communication. Using UPnP, SATATYA NVRs can detect and add IP cameras automatically making NVR installation simple and quick.

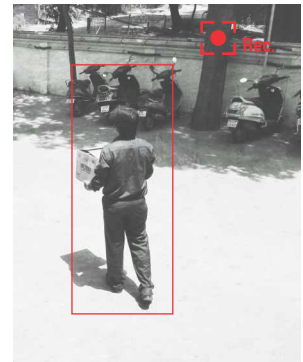
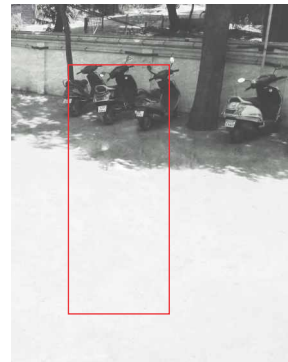
Bandwidth Optimization

Bandwidth is always a scarce resource. It becomes an important aspect during IP video surveillance design and deployment. Video data quantum depends on many factors including camera resolution, image quality and frame rate. These factors also decide storage capacity, making bandwidth optimization a pre-requisite. Variable Bit Rate (VBR) and Constant Bit Rate (CBR) allow admin to manage the bandwidth within a given range with higher frame rate and better image quality .

User Management

SATATYA NVR offers flexibility of user roles with admin, operator and local. Up to 40 users can login simultaneously having different roles and rights including live view access, playback, PTZ control and audio. Admin can set camera-wise different access rights for each user ensuring complete flexibility, control and security.

RECORDING



Recording Flexibility

SATATYA NVRs offer various recording options including manual, scheduled and event based. Pre-event and post-event (motion, tamper, connection failure and others) ensure the recording of an entire event. These efficient options help in optimizing storage.

Privacy Masking*

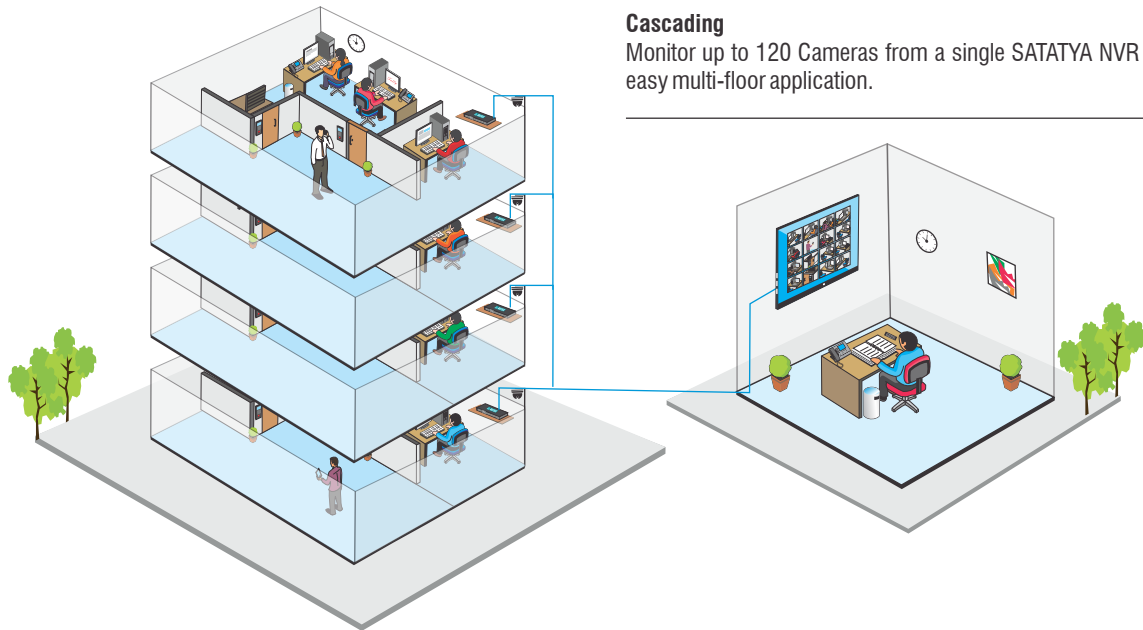
At times, it is necessary to block certain areas of an image due to privacy reasons. Depending on camera angle, user can define certain areas as privacy masks. SATATYA NVR replaces live images with a black color patch before recording or streaming.

Motion Detection*

Motion detection allows NVR to start recording only when any motion is detected in the defined area of a camera. Motion detection can generate an alert and initiate pre and post event recording.

* Feature can be activated only if the installed IP camera supports this function.

MONITORING



Cascading

Monitor up to 120 Cameras from a single SATATYA NVR locally for easy multi-floor application.

Monitoring Modes

Matrix SATATYA NVRs provide different monitoring modes like single, sequential and variety of layout templates such as 1x1, 2x2, 3x3, 4x4, 5x5, 5+1, 7+1, 4+3, 8+2, 12+1, 1⊙+12, 1+9, 4+9, 2+12 for effective monitoring of live and recorded video streams.

Locally Manage 5 NVRs (Cascading)

Multiple NVRs can be managed from a single NVR. If more than 24 cameras exist in a network, they can still be managed from one NVR locally. A single NVR can act as the master NVR and it can control up to 4 other NVRs.

Digital Zoom

Even with a fixed lens and non-zoom camera, digital zoom feature allows user to get a closer view of the defined area on the screen. Digital zoom function is available in local GUI, Web Client, CMS and Mobile Application.

Video Snapshot

It is necessary to take a snapshot from the video stream and store it as an image file for record, analysis and sharing with others. SATATYA NVR allows capturing a snapshot of the video during live monitoring or playback and storing it for future reference. Mobile Application also allows taking snapshots.

SEARCH AND PLAYBACK



Timeline based Search

Search can be done from the available recorded videos on the basis of channel number, recording type and timeline of the event. The color codes used to indicate the recording types make it simpler for the user to search for the required video.

Synchronous Playback

Synchronous playback allows tracking of an entire event by doing a playback of up to 4 cameras simultaneously across the organization.

Asynchronous Playback

Asynchronous playback is essential when we know the location of occurrence of event but not the time. With asynchronous playback you can search a particular camera at different time simultaneously. Also, playback can also be done using, date and time, type of recording, channel number to assist in quick investigation.

NETWORK

Matrix DNS

Matrix provides a free DNS which is beneficial in case static IPs are not available. It saves cost of static IP for SATATYA NVRs along with easy and secure viewing of multiple streams.

3G Connectivity

Customers can connect 3G/LTE dongles on SATATYA NVRs using the USB port if wired Internet is not available at remote sites. Admin and users can configure, manage and use the NVRs remotely.

IP and MAC based User Access

Networking functions like static routing, IP and MAC address filtering (allow/deny), media file access cater to a high level of security protecting video surveillance from unauthorized users and hackers.

STORAGE & BACKUP

Higher Storage Capacity

Required storage capacity depends on number of cameras, resolution, type of recording and retention duration. SATATYA NVR24P offers greater storage capacity of up to 8TB using 2 SATA hard disks while SATATYA NVR8S offers a disk space of 4TB using 1 SATA hard disk. For higher storage requirements, videos can be stored directly on NAS/FTP server.

RAID Support

Duplication of storage is essential to prevent losing of videos in case of a disk failure. RAID setup spans video over multiple hard disks with redundancy so that it can be recovered in case either of the disks fails. SATATYA NVR24P has the provision of RAID0, which strips videos and RAID1, which mirrors video on both the disks hence, reducing the chances of complete loss of video.

Backup Management

SATATYA NVRs support backup on another server and even off-premises servers. NAS, Cloud Server and FTP can be used for scheduled recording, direct playback and data retention. In case data from SATATYA NVRs is corrupted or stolen, admin can retrieve from any of the servers.

Scheduled Backup

Video is an important data and its backup is essential to prevent accidental loss. Admin user can take manual backup on USB, FTP or NAS. In addition, SATATYA NVRs support scheduled backup. Camera-wise backup is also offered to initiate backup prioritizing importance of each camera location.

Synchronization of Data

The synchronization feature transfers video to the FTP, NAS or any predefined path to ensure recording and backup are in sync and up to date. As soon as one file is created the backup will start ensuring data is safeguarded at two places.

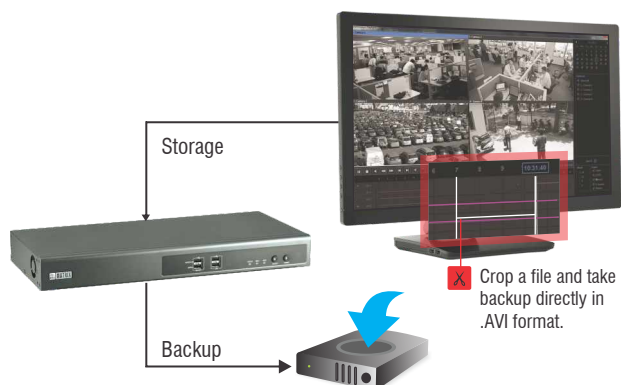
Crop and Backup

Many times, video clips are prepared for reviews and legal proceedings. In such cases, it is necessary to record only relevant durations. Crop and backup option allows user to cut and backup only essential part of video required as evidence.

Advanced Storage Management

SATATYA NVR monitors the free space available on the hard disk continuously and sends notification to admin user when it reaches a predefined threshold. Once the disk is full, it offers to overwrite the oldest recorded video (FIFO) or stop recording. It can also cleanup the oldest file and create configured percentage of storage space. It provides a regular cleanup option in two ways:

1. Delete backed up files after every backup.
2. Delete files older than specified number of days.



EVENTS AND ALERT MANAGEMENT

Events Identification

SATATYA NVRs are intelligent devices capable of detecting various events like motion, tamper, connection failure, alarm, manual trigger, power on, disk error, disk full, etc.

SMS Notification

In case of any event like motion detection, power on, storage alert, disk error, disk volume full, etc., SATATYA NVRs send SMS to ensure that the concerned person is notified in real-time to prevent damage from the event.

Email Notification

In case of any event, SATATYA NVR can send email notification with snapshot as an attachment to one or multiple recipients. Users can use these notifications as pictorial evidence for the events even if the NVR or the hard disk is stolen.

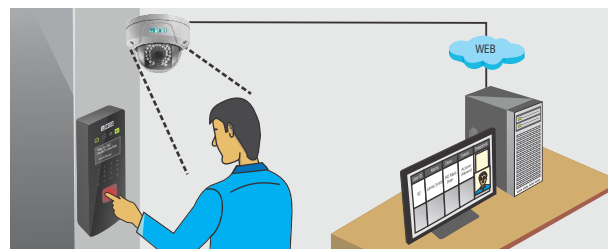
Alarm Detection and Management

Alarms play a major role in real-time video surveillance. SATATYA NVR24P allows connection for 8 alarm input devices and 4 output devices. Using input and output linkage, admin can program various applications. For example, on detection of any event like glass break, a notification in form of a buzzer could be activated.

Calling from SATATYA SIGHT

SATATYA SIGHT now has the facility to make calls to the person whose number has been linked to camera in the SATATYA NVRs. A different contact number is assigned to each camera, which in case of any event can be useful to take preventive measures. This simplifies the process of taking action in case of any unexpected event.

INTEGRATION



Integration with Access Control

Matrix SATATYA NVRs can be integrated with Access control solution through the Ethernet which facilitates the door controller with cameras to take snapshots and start recording in case any event occurs at the door. This integration not only provides pictorial evidence of unauthorized attempt to enter at the door, but also prompts real-time action by sending snapshots via email.

Integration with Fire Alarm Panel

Fire Alarm sensors or panel outputs can work as inputs to SATATYA NVR. With such integration, any trigger from the fire alarm system prompts SATATYA to start recording the happenings in area of interest. It assists in rescue operations.

TECHNICAL SPECIFICATIONS

MODELS		SATATYA NVR8S	SATATYA NVR24P
Video	Input	8 IP Channels	24 IP Channels
	Standard	PAL (704x576) and NTSC(704x480)	
	Compression	H.264,MPEG-4, Motion JPEG	
	Output	1 HDMI, 1 VGA	2 HDMI, 1 VGA
Audio	Compression	—	G.711, G.726, AAC, PCM
	Input		1 Channel, RCA Port
	Output		1 Channel, RCA Port
Alarm	Input	—	8
	Output		4
Display	Resolution	4 Ch. 720P to 8 Ch. D1	6 Ch. 1080P to 16 Ch. D1
	Privacy Masking	As Per Camera Support	As Per Camera Support
	Digital Zoom on Live	Yes	
	Freeze View	Yes	
	Snapshot	Yes	
	OSD	Channel Number and Name, Status, Video Loss, Motion Detection, Recording, , View Tamper, Blocked View and Disabled Channel (As per Camera Support)	
Recording	Image Resolution	1080P, 720P, D1, 2CIF, CIF	
	Pre-Record	Up to 30 Sec	
	Post-Record	10-300 Sec	
	Recording Modes	Motion, Manual, Scheduled, Alarm, COSEC	
Playback & Backup	Synchronous Playback	4	
	Search Mode	Timeline based, Channel, Recording Type	
	Playback Modes	Fast Reverse, Fast Forward, Slow Forward, Previous Video, Next Video, Different Speed	
	Backup	Manual Backup over USB and Scheduled Backup over USB/FTP and NAS	
Video Detection & Alarm	Trigger Events	Motion Detection, System Alarm Detection, Storage Alert, Disk Volume Full, Disk Error, Network Disconnected, Tampering, Connection Failure	
	Actions	Recording on Selected Channel, Upload Images on FTP/Email server, Email Notification with Snapshot, TCP Notification, Recall PTZ Preset Position, Turn On/Off Alarm Outputs, Buzzer and SMS Notification	
	Motion Detection	As per Camera Support	
	Video Loss	As per Camera Support	
Storage	SATA Interface	1 Port (4TB Capacity)	2 SATA Ports (4TB Per Port)
Interfaces	Communication Interface	10/100 Mbps Adaptive Ethernet Interface	2xGigabit Ethernet Interface
	Throughput	50Mbps	130Mbps
	USB	2 Ports	4 Ports
	RS-485	—	1 Port
	Control Mode	Mouse, CMS and Web Client	Mouse, IR Remote Control, CMS and Web Client
Environment	Temperature	-10°C to 50°C	
	Humidity	10% to 95% RH	
General	Certifications	CE, FCC	

SOFTWARE RESOURCES	
Events Log	10,000
Role based Access Control Level	Administrator, Operator and Viewer
Simultaneous Login Users	40
IP Access Control List	Yes
MAC Access Control List	Yes
Day Light Saving	Yes
Routing Table	Yes

SOFTWARE REQUIREMENTS	
Operating System	CMS → XP SP3, Vista, Windows 7, Windows 8 Web Client → Windows XP and above
Web Browser	Internet Explorer 6 and above (for NVR Client)
Processor	Intel Pentium 4 Processor (Minimum) Intel i5 or above (Recommended)
RAM Memory	1 GB (Minimum), 2 GB (Recommend)
Free Disk Space	200 MB (Minimum)
Connection	10/100/1000 Base-T Network Interface

FEATURES LIST

Channels and Resolution

8 and 24 Channels
H.264, MPEG-4 and Motion JPEG Video Compression
Mega-pixel Resolution*
2 HDMI and 1 VGA Video Outputs
Different Resolutions like MP*, D1, 2CIF and CIF

Video Recording Frame Rates

600 Frames/Sec @ D1 (24 Channels)
Configurable Frame Rates

Recording Types

Manual and Scheduled
Pre-alarm and Post-alarm
Trigger based

Monitoring

1x1, 2x2, 3x3, 4x4, 5x5, 5+1, 7+1, 4+3, 8+2, 12+1
Single, Sequential, PIP1 and PIP2
Digital Zoom on Live and Playback
User Selectable Display Sequence

Storage and Backup

Up to 8 TB Storage Capacity
Storage on NAS, FTP and External HDD
Export in AVI and Native File Format
Upload Image in JPEG Format
Manual and Scheduled Backup
1 Touch Auto Backup
Storage on FIFO Basis

Data Storage

Camera-wise Recording Retention
RAID0 and RAID1[#]

Playback

Live and Remote Playback
Different Speed Control
Fast Reverse
Slow Reverse
Fast Forward
Slow Forward
Next and Previous Frames
Synchronous
Asynchronous

Search

Channels
Date and Time
Recording Type

Intelligent Features

Pentaplex Function
Motion Detection*
Direct Streaming from Camera
Privacy Masking*
View Tampering*
Day Light Saving Time (DST)
Integration with Access Control System (ACS)

Events

Disk Error
Disk Volume Full
System Alarm Detection
Manual Trigger
Motion Detection
View Tamper
Camera Disconnected
Power On
Storage Alert

Action on Events

Buzzer Notifications
Email Notifications with Snapshots
Recall PTZ Preset Position
Recording on Selected Channels
SMS Notifications
TCP Notifications
Turn on/off Alarm Outputs
Upload Images on FTP/Email/Network Drive

Remote Function

Live Camera Monitoring with PTZ Control
Menu Configuration
Record Video
Live View and Playback

Control

IR Remote Control
IR Extension for Remote Control
Front Panel Backup Button
Wireless Mouse

Audio[#]

G.711, G.726, AAC, PCM Audio Compression
1 Audio Input
1 Audio Output

Alarm[#]

8 Alarm Input
4 Alarm Output

Security

IP Access Control List
Video Access Rights

System

Firmware Upgrade
10,000 Events Log
3 User Access Levels (Default)
Embedded Web Server
Intuitive GUI
Linux Embedded OS
Online Users List
Multiple Concurrent Login Sessions (Up to 10)
Multiple Programmable Users (Up to 20)
Web based Interface
Check System Health Status

Centralized Monitoring Software (CMS)

36 Channels Simultaneous Display
Audio, Video and Visual Alerts
Intelligent E-map
Native to AVI File Conversation
Grouping of Multiple Cameras
Local Storage and Playback
Local Schedule Recording
Camera Grouping in CMS

SATATYA SIGHT

Support up to 50 SATATYA Devices
2*2 Layout in Live View
Remote Control for PTZ Cameras
Device and Camera Configuration
Playback of Recorded Files
Favorite Channel
Snapshots
Calling a Concerned Personnel in case of any Event

Web Client

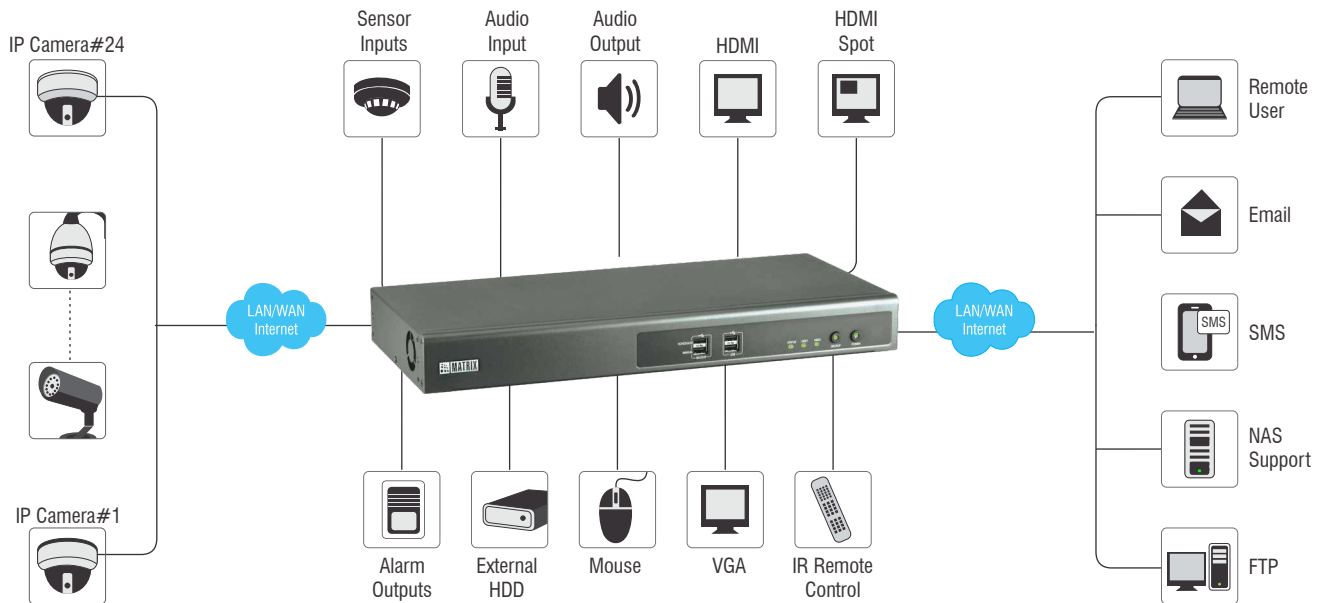
Different Layout Styles
Asynchronous/ Synchronous Playback
Health Status of Device
Event Log
Camera wise Recording, Backup and Storage
Main Stream and Sub Stream Options
Camera and Event wise Actions
Broadband and Static Routing Options
IP and MAC Address Filtering
User Account Management

* Feature is supported if it is supported by the installed IP camera.

[#] Feature is supported only in SATATYA NVR24P.



SATATYA NVR INTERFACES



ABOUT MATRIX

Established in 1991, Matrix is a leader in Telecom and Security solutions for modern businesses and enterprises. An innovative, technology driven and customer focused organization; Matrix is committed to keep pace with the revolutions in the telecom and security industries. With around 30% of its human resources dedicated to the development of new products, Matrix has launched cutting-edge products like IP-PBX, Universal Gateways, VoIP Gateways and Terminals, GSM Gateways, Access Control and Time-Attendance Systems, Video Surveillance System and Fire Alarm Systems. These solutions are feature-rich, reliable and conform to the international standards. Having global foot-prints in Asia, Europe, North America, South America and Africa through an extensive network of more than 500 channel partners, Matrix ensures that the products serve the needs of its customers faster and longer. Matrix has gained trust and admiration of customers representing the entire spectrum of industries. Matrix has won many international awards for its innovative products.

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Due to continuous technology upgradations, product specifications are subject to change without notice.