NUUO NVRmini 2 Specification

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System Diagram



Wireless IP Surveillance Solution

Main Features

- Linux embedded – free from PC crash and virus attack
- **High throughput for megapixel camera recording**
- **Support Stream Profile for remote live view bandwidth control (Original / 300 kbps / 100 kbps)**
- **Support mobile client for iPhone / iPad / Android**[1]

[1] Please check the supported camera spec list on website. Besides, to use this feature, you have to enable 2nd stream function on web setting page first.

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- Panorama 360° PTZ (ImmerVision and VIVOTEK fisheye)
- **Generic dewarp (fisheye)** [15]
- **Support camera multi-stream setting**[2]
- **Support camera two-way audio**[3]
- Web-based configuration, live viewer, playback (Recommend on IE 8, 9, 10, 11, Mac Safari v6.1,v7.0 and Windows Chrome)
- RAID 0,1,5,10 for maximum capacity or data protection[16]
- **Support HDD SMART self-test**
- Online GUI recording schedule
- Support megapixel cameras and H.264 compression format
- Digital PTZ and multi-view
- **Real-time digital output, Email alert and push notification on mobile**
- Remote I/O solution and camera I/O integration
- Up to 128 CH remote live view with multiple monitors
- Support joystick for easier camera control
- Playback with 5 types of intelligent event search
- **Point of Sale (POS)**
- E-map with indicator
- Digital watermark
- Auto port-forwarding
- NTP server synchronization
- Support over 85 brands of IP cameras and 2151 models[4] (with free monthly update)
- **Alarm source of NUUO Central Management System**

Specifications

Model	NE-2020/NE-2040	NE-4080/NE-4160
Recording Cameras	1~2(4)[5] / 1~4	1~8(16)[6] / 1~16
Playback Channels	2(4) / 4	8 / 16
Number of Drives	2xSATA II	4xSATA II
Max Storage Per Drive	4TB	4TB
RAID Level	RAID 0,1	RAID 0,1,5,10[16]
CPU	Marvell 88F6283 1.0GHz	Marvell 88F6282 1.6GHz
RAM	256MB	512MB
I/O Interface	2xUSB 2.0 (for UPS)	2xUSB 2.0 (for UPS); 2xeSATA (for DAS)
LAN Transmission Speed	10/100/1000 Mbps (RJ45 x1)	10/100/1000 Mbps (RJ45 x2)
Voltage	DC 19V 2.1A	DC 19V 4.74A
Power Consumption	40W[7]	90W[8]
Device Dimension (HxWxD)	140.0 x 109.8 x 219.0 mm	140.0 x 183.4 x 219.0 mm
Device Weight (Without Drive)	2.12 kg (4.67lbs)	2.97 kg (6.55lbs)
Temperature	Operating: 0°C-40°C	
Humidity	Operating: 5%-95%	

Supported IP Camera Brand(s): 85 brands in v1.7.2[9]					
	ACTi	ADT	Airlive	Alphatech	American Dynamics
	Arecont	AMTK	ARM	Asoni	AXIS
	BASLER	Bolide	BOSCH	Brickcom	Bullwark

[2] DP 3.0 or above
[3] DP 3.1 or above
[4] The data is updated for DP 2.16.
[5] NE-2020 can support up to 4 cameras capacity with license activation (license type: 2ch)
[6] NE-4080 can possess up to 16ch capacity with license activation (license type: 2/4/8ch)
[7] 40 W is the maximum power consumption
[8] 90 W is the maximum power consumption
[9] The data is updated for DP 2.16.

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	Centrix	CISCO	CNB	COP	CORUM
	Dahua	Digital Watchdog	D-Link	D-LinkCN	DYNACOLOR
	Eneo	Ernitec	Etrovision	Everfocus	Fine
	Forenix	GE	Grandstream	Grundig	Guardeon
	Guardliner	HIKVision	Histream	Honeywell	i-Mege
	IQinVision	Jetstor	JVC	LevelOne	LG
	Lilin	Linksys	Lumenera	MegaIP	Messoa
	Milesight	Mobotix	NetworkCamera	NTIC	On Electronics
	Onvif	Panasonic	Pelco	PiXORD	Planet
	Probe	Rover	Saerim	Samsung	SANTEC
	SANYO	Shany	Sony	StarDot	Sunell
	Telview	Techson	Tiandy	TOSHIBA	TRUEN
	UDP	Videosec	Vitek	Vision Hi-Tech	Vista
	VIVOTEK	Yudor	Zavio	3M	3Svision

Compression Format	MPEG-4, M-JPEG, H.264, MxPEG (depends on IP camera)	
Recording Performance	Around 60/120fps at 1.3M Total bitrate: 40Mbps	Around 240fps at 1.3M Total bitate: 80Mbps
Recording Type	Continuous record, record by schedule, event trigger record, digital input trigger record	
Remote Live View Control	Live view, preset/go, PTZ, remote I/O, snapshot, multi-view, digital PTZ, advanced E-Map, bandwidth monitoring	
Audio & Video Recording	Synchronized audio and video recording	
POS	Live view, record, playback, and search for every transaction	
Auto Backup	Automatically backup the recorded video of the date before to FTP server	
Intelligent Search	General motion, missing object, foreign object, lose focus, camera occlusion	
Remote Live View Connection	Live view maximum 64 connections per server at the same time	
Supported Language	English, Croatian, Czech, Deutsch, Dutch, Finnish, French, Hebrew, Hungarian, Italian, Japanese, Korean, Polish, Portuguese (Brazil) , Russian, Simplified Chinese, Traditional Chinese, Serbian, Spanish, Swedish, Thai, and Turkish	
Remote Client System Minimum Requirement		
Model	**NE-2020/NE-2040**	**NE-4080/NE-4160**
OS	Windows XP (32-bit), Windows 7 (32/64-bit), Windows 8/8.1 (32/64-bit)	
CPU	Intel Core 2 Duo, 2.6GHz	
RAM	1GB	
LAN Transmission Speed	10/100/1000 Mbps (RJ45)	
UI	1. Web browser: Internet Explorer 8, 9, 10, 11 2. NUUO client application program 3. NUUO iPhone, iPad, Android mobile live viewer[10]	

Technical Details

- ## System, Setting, Management and Integration

  - **Server-Client Architecture:** Centralizes all video data transaction only via NVRmini 2 to remote clients. With this centralized structure, total camera loading remains at a stable level, thus ensuring good recording quality even when reaching maximum number of remote client access.

  - **Open Platform:** Support over 2151 IP camera models and video servers (encoders) from over 85 brands of major network camera manufacturers.[11]

  - **Automatic Camera Model Detection:** NVRmini 2 can automatically search for IP cameras in the network (camera should support UPnP protocol or should be implemented its brand's search tool[12]). For those

[10] Please check the supported camera spec list on website. Besides, to use this feature, you have to enable multi-stream function on web setting page first.

[11] The data is updated for DP 2.16.

[12] Support camera search tools of ACTi, Arecont, D-link, and Sony.

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unsearchable cameras, user can manually insert it. The auto detection function will help the user to find the brand and model of the camera after specifying its IP address.

- **Storage Optimization:** NVRmini 2 supports H.264 compression format which helps increasing the storage efficiency to nearly 600% higher than MJPEG and 150% higher than MPEG-4.
- **Friendly GUI Recording Scheduler:** Graphical user interface to setup recording schedule featuring unique day mode and week mode.
- **Event & Action:** 4 camera events including motion detection (if supported by camera), connection lost and camera input; 1 input event from remote I/O box; 3 system events and daily system report by E-mail; 5 instant alarm responses supporting output, Email, E-map popup, push notification on mobile and NUUO CMS alarm system.
- **Online RAID Capacity Expansion and Level Migration:** Support RAID 0, 1, 5, and 10 for maximum capacity or data protection at the HDD level. [16]
- **Point of Sale (POS):** POS transactions received through NUUO POS box or Ethernet (TPC/IP client). POS text overlay on live view video and recordings. All recorded POS transactions are searchable in the NVRmini 2 database.
- **I/O Event Control**: With the integration of camera I/O and NUUO I/O Box, system can start recording when input triggered, or trigger output as an event happened.
- **Various Authorities of Different Kinds of Users:** Web Viewer logins to NVRmini 2 via 4 different user groups: administrator, power user, user, and guest. Each user group has its own distinctive privilege in system configuration, live view camera and playback records.
- **Synchronization with NTP Server:** Synchronize time daily/weekly/monthly to keep the accuracy of recording time.
- **Log System:** Hardware Log keeps track of system operation; NVR Log for camera status and user access; NVR event Log for special events; Export and Backup Log for exporting video or video backup action.
- **User Friendly:** Provide users HELP page on the webpage for quick start tips and troubleshooting.
- **Auto Power-on:** The system shall be able to power-on automatically and keep recording after incident power outage.

Remote Client Operation

- **Multiple Live View Channel:** Up to 64 channels of remote connections per unit. Remote Live Viewer client supports 64 channels from multiple servers, and could display up to 128 channels with multiple monitors. In addition, Remote Live Viewer client can access and display live video from any NUUO Mainconsole family servers simultaneously.
- **Multiple Playback Channel:** Up to 16 channels in web playback client/NUUO Playback System.
- **Monitor Resolution:** 800x600, 1024x768, 1200x900, 1280x1024, 1366x768, 1440x900, 1600x1200, 1680x1050, 1920x1080, 1920x1200.
- **Multi-View:** NVRmini 2 can duplicate the same live view video onto multiple channels and digitally zoom in to see the details of different spots on cloned channels without losing the original live view video or using extra camera licenses.
- **Stream Profile:** Live display multiple camera streams with lower bit rate, while still recording at highest possible quality.
- **E-Map:** Show device indicator on map for easy finding and tracking device location. Furthermore, pop up map

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to point out the device when an event occurred.

- **Multiple Mobile Clients:** Support mobile live viewer for iPhone, iPad, and Android.[13]

Playback, Search, Export and Secure Data

- **Post-Recording Processing:** Intelligent search, digital PTZ and video enhancement tool.
- **Intelligent Search:** Search recorded video for 5 events including general motion, foreign object, missing object, loss focus and camera occlusion.
- **Video Enhancement:** Fine tune the image's visibility, sharpen, brightness, contrast or even grey scale.
- **Evidence Export:** Snapshot and print video image in BMP/ JPEG; backup video in DAT; save video in ASF/AVI. The action exporting video or video backup will be recorded in NVRmini 2's log system.
- **Alarm Notification:** Notify users on camera and system event through sound, digital output, push notification, E-mail and NUUO CMS alert.
- **Auto Backup:** Automatically backup the recorded video of previous dates to a designated FTP server.
- **Manual Backup:** Manually backup or delete the recordings from any NVRmini 2.
- **Watermark:** Protect original recordings from alternation with NUUO watermark verification tool.

Extended Service

- **NUUO Central Management System (CMS):** Ultimate central monitoring solution for grand scale projects and projects with multiple sites. Fully compatible with all NUUO Mainconsole family servers.

External Device

- **POS Box (from serial port to Ethernet):** NUUO Point of Sales system works on NVRmini 2 by overlaying the transaction text from cash register or ATM machines onto live video channels. All POS recordings are searchable.
- **Remote I/O Box:** I/O signals of NUUO I/O Box are converted to Ethernet through converter, which enables NVRmini 2 to do more sophisticated application, such as starting recording when input triggered, triggering output as an event happened, and much more.
- **Panorama 360° PTZ:** Several modes are supported on live view and playback. Generic dewarp: Original mode, Rectilinear mode, Quad mode and Dual-view panorama mode. ImmerVision[14]: Original mode, PTZ mode, Quad mode and Perimeter mode. Vivotek: Original mode, Rectilinear mode, Full-view panorama mode, and Dual-view panorama mode.
- **APC UPS:** Continues to feed the NVRmini 2 power in an event of power outage.
- **Joystick:** Joystick support on PTZ cameras and software enabled digital PTZ function are both available in NVRmini 2. Preset points and patrol functions are also available on many camera models.

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[13] Please check the supported camera spec list on website. Besides, to use this feature, you have to enable 2nd stream function on web setting page first.

[14] Please refer to ImmerVision's website for qualified cameras.

[15] Fisheye dewarp supported on Internet Explorer only

[16] RAID5 is only supported using 1TB Enterprise level HDDs.

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