

NVR Champ Specification

Version 3.0.0 release date 2016.3

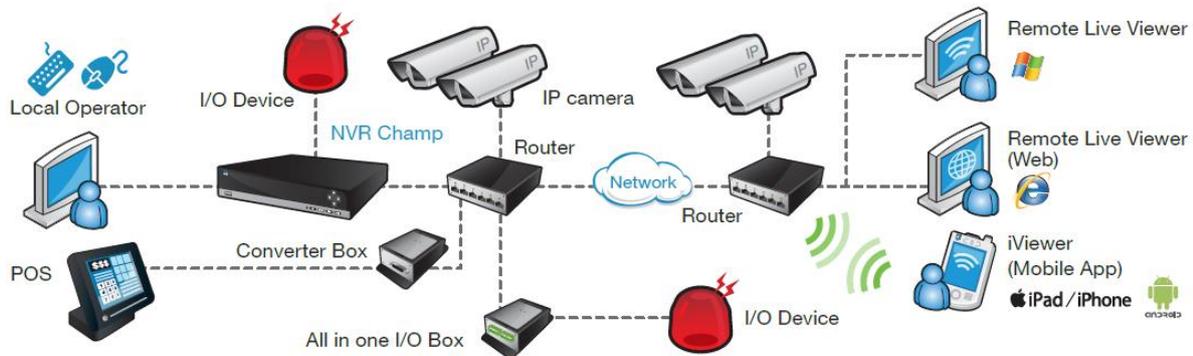
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NVR Champ



System Diagram

System Architecture



Main Features

- Linux embedded – safer solution against PC crashes and virus attacks
- **One-click setup for more than 100 brands of IP cameras**
- **findNVR – free from router settings for web/ mobile viewing**
- **Point of Sale (POS)¹**
- **Alarm source of Central Management System**
- RAID 0,1 support
- **Support embedded motion detection (local setup)**
- **Support camera multi-stream setting²**
- **Dual monitor²⁰**
- **2nd stream record – Dual record¹⁷**

¹ POS device configuration is only available in web.

² DP 3.1 or above. Please check the supported camera spec list on website.

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- **H.265 support¹⁸**
- Support megapixel cameras and H.264, H.265 compression format
- Support camera one-way audio (local)
- Support camera snapshot³
- IP Camera support image preview and camera motion are available on local UI (only on support camera)¹⁹
- IP Camera reboot, reset and firmware upgrade could be done through local UI (only on support camera)¹⁹
- UPnP support for mass upgrade SNVRs/IP Camera firmware by **IPInstaller** (only on support camera)¹⁹
- Remote I/O solution and camera I/O integration
- Real-time digital output, Email alert and push notification on mobile
- NTP server synchronization
- Compatible with touch panel⁴
- **Support HDD SMART self-test**
- Support 100 brands of IP cameras and 2329 models (with free monthly update)

Remote Client Application

- **Support Multi-Stream for remote live view bandwidth control (Original / 500 kbps⁵ / 100 kbps)**
- Support mobile client for iPhone / iPad / Android⁶
- Up to 128 CH remote live view with multiple monitors
- Remote client support 2-way audio

Web

- Web-based configuration, live viewer, playback (Recommend on IE 8, 9, 10, 11, Chrome⁷ on Windows OS, and Safari on Mac)
- Online GUI recording schedule
- Panorama 360° PTZ (ImmerVision and VIVOTEK fisheye)
- Generic dewarp (fisheye)
- Digital PTZ and multi-view
- Support joystick for easier camera control
- Playback with 5 types of intelligent event search
- E-map with indicator
- Auto port-forwarding
- Playback speed through **remote client** can support up to **64X**.

Specifications

| Model | NC-2080 | NC-2160 | NC-2080P | NC-2160P |
|---------------------------|--|---------|---------------|----------------|
| Channel | 8 | 16 | 8(8 PoE port) | 16(8 PoE port) |
| Video Output | HDMI, VGA | | | |
| Output Resolution | 1920x1080, 1280x1024, 1280x720, 1024x768 | | | |
| Decoding Capacity (H.264) | 180fps @1080p or 360fps @720p (no resolution limitation on single channel) ⁸ | | | |
| Decoding Capacity (MPEG4) | 120fps @1080p or 240fps @720p (Up to 1920x1080 per channel) | | | |
| Decoding Capacity (MJPEG) | 15fps @720p (Up to 2560x1600 per channel) | | | |
| Specifications | | | | |
| Throughput | 80Mbps | | | |
| Number of Drives | 2 x 3.5" SATA II | | | |

³ DP 3.2 or above. Please check the supported camera spec list on website.

⁴ Acer T232HL and ViewSonic TD2220

⁵ DP 2.16 or above; the low profile of cameras integrated before 2.16 is 300kbps.

⁶ Please check the supported camera spec list on website. Besides, to use this feature, you have to enable 2nd stream function on setting page first.

⁷ Live view layout and stream profile will not be saved when next log in on Chrome and Safari.

⁸ The total capacity is around: max 7ch 5M cameras or 16ch 2M cameras. 2M = 1920x1080.

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| | | |
|---|--|--|
| External Storage | 1 x eSATA | |
| Max Storage Per Drive | 6TB | |
| RAID Level | RAID 0,1 ²¹ | |
| RAM | DDR3 1GB | |
| I/O Interface | 2 x USB 2.0 (for keyboard, mouse, UPS, USB flash drive) | |
| On-Box I/O | 0/0 | |
| LAN | 1 x Gigabit Port, RJ45 (10/100/1000 Mbps) | 1 x Gigabit Port, RJ45 (10/100/1000 Mbps) 8 x POE port (15W) (10/100 Mbps) |
| Power Consumption | 60W | 120W |
| Voltage | DC 12V 5A | DC 48V 2.5A |
| Device Dimension (HxWxD) | 330 x 285 x 47 mm | |
| Device Weight (Without Drive) | 2 kg (4.41lbs) | 2.1 kg (4.63lbs) |
| Temperature (Operating with HDD) | 0°C-40°C | |
| Humidity (Operating) | 5%-95% | |
| Supported IP Camera Brands | Axis, ONVIF, Samsung, Panasonic, Sony, Vivotek, ACTi, Sunell, Dynacolor, Mobotix, NUUO, Zavio | |
| Compression Format⁹ | MPEG-4, M-JPEG, H.264, H.265, MxPEG (remote client only) | |
| Recording Type | Emergency record, continuous record, record by schedule, event triggered record, digital input triggered record, 2 nd stream record-dual record ²⁰ | |
| Live View Control | Live view, preset/go, PTZ, remote I/O, snapshot, digital PTZ | |
| 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 | |
| POS¹⁰ | Live view, record, playback, and search for every transaction (web only) | |
| Auto Backup | Automatically backup the recorded video of the date before to FTP server | |
| Intelligent Search via Web/Remote | 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 ¹¹ | |
| Supported Languages: 19 | English, Croatian, Czech, Deutsch, Finnish, French, Hebrew, Italian, Japanese, Korean, Polish, Portuguese, Portuguese (Brazil), Russian, Simplified Chinese, Traditional Chinese, Spanish, Swedish, Thai, Turkish and Magyar | |
| Remote Client System Minimum Requirement | | |
| OS | Windows XP (32-bit) / Win7 (32 and 64-bit) / Win8 (32 and 64-bit) / Win8.1 (32 and 64-bit) | |
| CPU | Intel Core 2 Duo, 2.6GHz | |
| RAM | 1GB | |
| LAN Transmission Speed | 10/100/1000 Mbps (RJ45) | |

⁹ Depend on IP cameras.

¹⁰ POS device configuration and search function are available in web only.

¹¹ Please refer to performance report for more details.

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| | | |
|---|---|---|
| Back Panel |  |  |
| UI | <ol style="list-style-type: none">1. Web browser: Internet Explorer 8, 9, 10, 112. Client application program3. iPhone, iPad, Android mobile live viewer¹² | |
| Technical Details | | |
| • <u>System, Setting, Management and Integration</u> | | |
| <ul style="list-style-type: none">■ Server-Client Architecture: Centralizes all video data transaction only via NVR Champ to local operators and 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 2329 IP camera models and video servers (encoders) from 90 brands of major network camera manufacturers.■ One-Click Setup: NVR Champ can automatically search and add IP cameras on the same subnet (camera should support UPnP protocol or should be implemented its brand's search tool¹³). For those 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: NVR Champ supports H.264 compression format which helps increasing the storage efficiency to nearly 600% higher than MJPEG and 150% higher than MPEG4.■ Friendly GUI Recording Scheduler: Graphical user interface to setup recording schedule featuring unique day mode and week mode.■ Embedded motion detection: Cameras without motion detection can be used to trigger related event.■ Event & Action: 4 camera events including motion detection (from server or from camera), connection lost and camera input; 1 input event from remote I/O box; 5 system events and daily system report by E-mail; 5 instant alarm responses supporting output, Email, E-map popup on web/remote, push notification on mobile and CMS alarm system.■ RAID Level Selection: RAID 0 and 1 for maximum capacity or data protection at the HDD level.■ Point of Sale (POS): POS transactions received through POS box or Ethernet (TPC/IP client). POS text overlay on live view video and recordings. All recorded POS transactions are searchable on web/remote playback system.■ I/O Event Control: With the integration of camera I/O and 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 NVR Champ 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 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 with hints on local interface and HELP tab on the webpage for quick start tips and troubleshooting. | | |

¹² Please check the supported camera spec list on website. Besides, to use this feature, you have to enable multi-stream function on setting page first.

¹³ Support camera search tools of ACTi, Arecont, and Sony.

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- **Auto Power-on:** The system shall be able to power-on automatically and keep recording after incident power outage.

• Local Operation

- **Multiple Live View Channel:** Up to 16 channels on NVR Champ 2 models, the display limitations are described on page 2.
- **Multiple Playback Channel:** Up to 16 channels on NVR Champ 2 models.
- **Monitor Resolution:** 1024x768, 1280x720, 1280x1024, 1920x1080.
- **Emergency Recording:** Click the Emergency Recording button on Live View to active all channels always recording instantly.
- **Instant Playback:** Play the last few minutes of live videos instantly to investigate recent events.

• Remote Client Operation

- **Multiple Live View Channel:** Up to 64 channels of remote connections per unit. Under full loading configuration, 16-channel connections are recommended.¹⁴ 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 Mainconsole family servers simultaneously.
- **Multiple Playback Channel:** In web playback client/Playback System, up to 16 channels on all models.
- **Monitor Resolution:** 800x600, 1024x768, 1200x900, 1280x1024, 1366x768, 1440x900, 1600x1200, 1680x1050, 1920x1080, 1920x1200.
- **Multi-View:** NVR Champ 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.
- **E-Map:** Show device indicator on map for easy finding and tracking device location. Furthermore, pop up map to point out the device when an event occurred.
- **Stream Profile:** Live display multiple camera streams with lower bit rate, while still recording at highest possible quality.
- **Multiple Mobile Clients:** Support mobile live viewer for iPhone, iPad, and Android.¹⁵

• Playback, Search, Export and Secure Data

- **Post-Recording Processing (remote):** Intelligent search, digital PTZ and video enhancement tool.
- **Intelligent Search (remote):** Search recorded video for 5 events including general motion, foreign object, missing object, loss focus and camera occlusion.
- **Video Enhancement (remote):** 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 NVRsolo's log system.

¹⁴ Please refer to performance report for more details.

¹⁵ 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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- **Alarm Notification:** Notify users on camera and system event by sound, digital output, push notification, E-mail and 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 NVRsolo.
- **Extended Service**
 - **Central Management System (CMS):** Ultimate central monitoring solution for grand scale projects and projects with multiple sites. Fully compatible with all Mainconsole family servers.
- **External Device**
 - **POS Box (from serial port to Ethernet):** Point of Sales system works on NVR Champ by overlaying the transaction text from cash register or ATM machines onto live video and recordings. All recorded POS transactions are searchable on web/remote playback system.
 - **Remote I/O Box:** I/O signals of I/O Box are converted to Ethernet through converter, which enables NVR Champ 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 web/remote live view and playback system. Generic dewarp: Original mode, Rectilinear mode, Quad mode and Dual-view panorama mode. ImmerVision¹⁶: 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 NVR Champ power in an event of power outage.
 - **Joystick:** Joystick support on PTZ cameras and software enabled digital PTZ function are both available in web/remote live view. Preset points and patrol functions are also available on many camera models.

¹⁶ Please refer to ImmerVision's website for qualified cameras.

¹⁷ Able to record 2nd stream without 1st, yet 1st stream must be connected permanently. 2nd stream playback only available on remote playback.

¹⁸ H.265 support on remote client only with supported cameras.

¹⁹ These functions are only available on NUUO, Zavio camera.

²⁰ Local server supports dual monitors.

²¹ When Dual record operates; RAID 1 total throughput with 56Mbps; RAID 0 total throughput with 72Mbps.