

**1.0 Manufacturer**

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Manufacturer shall warrant the NVR to be free from defects in material and workmanship for two years from the purchase date.

**2.0 Description**

NVR116 series offers a standalone solution for managing IP cameras and systems. It uses high quality H.264 decoders to deliver 1080P/720P/D1/VGA IP camera streams. Each channel can be individually configured as SD and/or HD resolution to optimize storage space.

Embedded HDMI and VGA engines offer 3D intellectual motion adoptive refinement, providing a maximum resolution of 1080P. The TV wall design allows the NVR to be cascaded via TCP/IP network for easy-cabling. The WS-Discovery protocol allows for quick IP address setup for all connected IP cameras. The self-diagnostic feature monitors the internal temperature, cooling fan, HDD I/O speed, and network status and information can be accessed via the health check report.

The NVR can be controlled via multiple methods including front panel keyboard with jog/shuttle control, LILIN remote control, LILIN keyboard with PTZ joystick, touch screen monitor, or USB mouse. When connected to a touch screen monitor, Smartphone style features like 'pinch and zoom' can be used to navigate the system.

The NVR series provides various export methods including DVD/RW, USB DVD/RW, USB flash disk, and HTTP download playable via Backup Manager. Extensive support for iPhone, iPad, BlackBerry and Android allows for remote viewing of the connected cameras at high frame rates. Browser based remote live monitoring and video playback features are also supported.

The NVR series provides real-time 1080P/720P/D1/VGA recording, playback, various backup and export options, quick camera scan and configuring, self-diagnostic monitoring, an easy-to-use user interface, and easy-setup features.

**3.0 General Specifications**

The NVR shall have Linux based structure, instead of using PC based structure. The maximum connection of 3D keyboard shall be 4 units which shall operate 16 NVRs; each NVR shall connect to 16 PTZs.

The NVR shall provide H.264 decoding capacity from IP cameras up to 16 channels at the resolution of 1920 \* 1080. Each camera frame rate shall be up to 25 FPS.

On the front panel, the NVR shall have system operational LED indicators for record signal LED, alarm triggering LED, HDD reading/writing LED, power LED, LAN LED, DVD-RW LED, and USB LED.

The NVR shall provide various input devices including multi-touch screen input, mouse input, 3D joystick RS-485 input, front panel keypad input, and IR remote controller input for it operations.

The NVR shall provide multi-touch features and connect to a multi-touch LCD/LED panel via USB for easy installation purpose. The NVR should provide ePTZ features on the touch screen for the content of live video and playback. ePTZ features shall be available at pause of live video, pause of playback, fast rewind of the recording, and fast forward of the recording.

Infrared remote (IR) controller shall be used for controlling the NVR. It shall operate the NVR including NVR playback, PTZ control, and NVR functions. The IR controller shall provide NVR playback features including the record video 64x fast forward, 64x fast rewind, play, pause, stepping forward, and stepping backward features.

The IR controller shall provide RS-485 PTZ controls including PTZ preset recall, pan tilt, zoom, and PTZ preset saving operations. The IR controller shall provide operating NVR functions including, sequence display, mute, and split window display of 4/9/16.

The NVR shall have multiple PTZ protocols supported including MLP1, MLP2, Pelco P, and Pelco D protocols.

Video inputs shall be gigabit RJ-45 input for IP cameras' connections. Video outputs shall be 1 main HDMI output and 1 VGA output. Audio shall have 1 RCA output.

The NVR shall provide network IP cameras scanning. The scanning result shall be listed for IP addresses of the cameras and camera snapshots which can be used for assigning a channel of the NVR.

Main monitor HDMI connector shall support digital video output and playback video output as well for split windows of 4/8/9/13/16. It shall support sequence display mode, and alarm triggering full display mode. The HDMI output should support 1080P digital signal. The VGA output of the NVR shall be up to 1920\*1080i in resolution.

The NVR shall support motion detection area setup in which there are 20 \* 12 motion grid available for each channel. The motion detector shall provide 8 levels of motion detection sensitivity.

Each camera shall be adjusted for its video including contrast, brightness, hue, and saturation via network. The NVR shall provide load default for the camera video setting.

NVR shall have 8 sets of external alarm inputs and an alarm output. NVR shall connect to external devices to have the function of alarm triggering recording by NO/NC dry-contact inputs. The alarm output can be triggered by motion detection alarm or an alarm input for the dry-contact output. The NVR can be set for buzzer alert when an alarm gets triggered.

When an alarm is triggered, the NVR can be set for triggering full screen mode at main monitor output. NVR can be set for sending email message notification with alarm snapshot attached or sending alarm snapshot to an FTP server.

The NVR shall keep the digital alarms and motion detection alarms in a list with JPEG snapshots stored. The alarm list with JPEG snapshots can be later retrieved for video playback and JPEG snapshots purposes.

The NVR shall provide alarm weighted recording mode where no alarm activity the NVR records one frame per second. If there is alarm, the NVR records based on full recording rate.

The NVR shall be set for different recording frame rate. The NVR shall be set in different recording mode including alarm/motion recording, schedule recording, or continuous recording.

The NVR shall be installed up to 2 \* 2TB hard disk drivers. The NVR shall have the function of HDD circular recording feature in which the oldest recordings get overwritten automatically. The NVR should be capable for recording 8 hard disk drivers for longer recording days.

The NVR shall connect to an external USB DVD-RW, USB 2.0 flash disk, FTP client, and/or CMX Software for recording retrieval. The NVR shall provide multiple channels backup file playback feature with playback software included in the backup media. The NVR shall be able to provide single channel AVI backup file(s) which can be played by Windows Media Player.

The NVR shall provide time bar based search mode, alarm event search mode, and recording search mode. User shall review the video recording under full-screen mode or split window 1/4/9/16 for its main monitor output or VGA output. During playback, the NVR shall provide fast forward and fast rewind up to 64x in speed. The NVR shall provide playback pause and stepping features. The NVR shall provide audio recording. The audio shall be listened during playback.

The NVR shall be built-in web server. The web server shall provide remote H.264 and/or JPEG live video monitoring, recording playback, PTZ control, split-window display feature, remote features configuring, and remote backup file download feature.

NVR shall provide 3G mobile remote live monitoring capability for iPhone, iPad or Android mobile phones.

Multiple NVRs installed shall be connected and managed by Center Management Software (CMX Software). The NVR's individual camera can be grouped in the CMX Software. The NVR's cameras groupings in CMX Software can be assigned for certain user(s) for user management purpose. The NVR's live video and recording can be retrieved by CMX Software. The CMX Software shall provide remote redundant recording features for the NVR.

**4.0 Minimum Performance Specifications**

H.264 1080P Real-Time Multi-Touch Standalone NVR Specification	
	D: Internal SATA HDD and built-in Slim DVD/RW -: Internal SATA HDD
IP Video Supports	Network camera, network speed dome, and video server
IP Video Input	Up to 16 Channel 1080P
Max Network Throughput	48 Mbps
HDD Disk supported	SATA Port *8
External RAID Supported	e-SATA Port *1
Recording	
Recording mode	External alarm / motion detection / schedule / manual
Resolution	1080P/ 720P/ D1/ VGA
Recording Video	1080P/ 720P/ D1/ VGA
Schedule	7 day * 24 hrs time table, recording mode configurable
Backup	USB 2.0 flash disk / HTTP file download / Audio supported
DVD/RW	Slim DVD/RW or External USB DVD/RW
Playback	
Resolution	1080P/ 720P/ D1/ VGA
Recording Video	1080P/ 720P/ D1/ VGA
Speed	FR: 2x, 4x, 8x,16x, 32x, 64x / FF:2x, 4x, 8x,16x, 32x, 64x
Video Output	
HDMI output	1920 x1080P
VGA output	Up to 1920 x1080i
Backlight saving	LCD backlight saving mode
Multi-touch	Support USB multi-touch screen
Multiplexer	Freeze
Split screen	4, 8, 9,13,16
Digital zoom	Up to 64x on live and playback
Management	
Reports	Full alarm, configuration, and operation reports exporting over HTTP or USB
Authentication	User authentication with feature configurable
Recording day	Recording day calculator
Alarm/event	DI * 8 and DO* 2 (NO/NC)
Motion	Motion grid 20*12 each channel, 8 sensitivities
Event	External alarm, video loss, stop recording, power recovering, motion detection, schedule, logon, HDD format
Email	Alarm notification with JPEG attachments
Accessories	Remote controller addressable up to 255 NVRs
PTZ protocol	LILIN MLP1/ 2 and Pelco D/ P
Keyboards	PIH-931D keyboard
IR receiver	Extra IR extension connector
RS-485/RS-232	RS-485 keyboard connector, Input and output * 2, 12V output, RS-485 PTZ output * 1
Jog & Shuttle	FF, FR, Step, instant rewind, menu setup
Mouse	USB, mouse-click, mouse scroll, mouse drag
Audio out	RCA, 1 output
Remote control	Yes
Network Ports	Gigabit LAN, RJ45 *1
Network	Direct Internet browser access / multiple users access
Protocols	ARP / TCP/IP / UDP / HTTP / SMTP / FTP / DDNS
Web	Live / event log & time search playback / AVI
NVR status	HTML NVR status
IP Scan	IP Scan supported, automatically quick IP address setup for IP cameras and NVRs
Software	
Backup Manager	Multiple NVRs FTP file download and multi-channel playback
Mobile phone	iPhone, iPad, Black Berry, and Android mobile phone supported
Others	
WDT	Hardware watchdog timer
DST	Daylight saving time
Multilanguage	English, Chinese,
CPU/OS	ARM Cortex A9 Processor @ 600 MHz CPU, Linux 2.6 kernel
Power	DC 12V, 10A / 120W
Working Env.	Temp: 0°C ~ +50°C / Humidity: 0%~80%
Dimension	434 * 411.4 * 88 mm
Weight	5.0 Kg (w/o HDD)