

1.0 Manufacturer

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

2.0 Description

DVR316 is designed to meet the demands for full 16-channel CIF real-time or **D1 100 (PAL)/120 (NTSC) FPS** recording systems. Frame rate, video quality, and resolution can be adjusted for each channel to meet recording requirement.

VGA engine is built-in 3D intellectual motion adoptive refinement with vivid image enhancement algorithm to provide best video quality.

DVR316 provides various backup features include USB DVD/RW, USB flash disk, HTTP download, and Backup Manager FTP for multiple DVRs' files download. Mobile phone device remote monitoring is also supported. Browser based remote live monitoring and video playback features are provided.

DVR316 can provide CIF real-time for 16-channel recording and playback. Full features web-based user interface, multiple DVR system monitoring features, various backup features, and easy of cabling. The DVR is ideal solution for DVR applications.

3.0 General Specifications

The DVR 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 DVRs**; each DVR shall connect to **16 PTZs**. The format of video compression shall be **JPEG** and **H.264 AVC**.

On the front panel, the DVR shall have system operational LED indicators for record signal LED, alarm triggering LED, HDD reading/writing LED, and power LED.

The DVR shall provide various input devices including mouse input, 3D joystick RS-485 input, front panel keypad input, and IR remote controller input.

Infrared remote (IR) controller shall be used for control the DVR. It shall operate the DVR including DVR playback, PTZ control, and DVR functions. The IR controller shall provide DVR playback features including 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 DVR functions including, sequence display, mute, and split window display of 4/9/16.

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

Video inputs shall be **16** composite video BNC input. Video outputs shall be **1 main out**, **1 BNC spot output**, and **1 VGA** output. Audio shall have **4 RCA inputs** and **1 RCA output**.

Main monitor output of the BNC connector shall support composite live video output and playback video output as well for **split windows** of 4/9/16. It shall support, sequence display mode, and alarm triggering full display mode. Spot output of the BNC connector shall support single channel sequence display, and alarm triggering display.

Live view video resolution of the DVR shall be **NTSC 720*480 or PAL 720 * 576** for its composite outputs. The **VGA output** of the DVR shall be up to **1920*1080i** in resolution.

The DVR shall support motion detection area setup in which there are 44 * 36 motion grid available. The motion detector shall provide 8 levels of motion detection sensitivity.

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

DVR 316 shall have **8 sets of external alarm inputs** and an alarm output. DVR316 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 DVR can be set for buzzer alert when an alarm gets triggered.

When an alarm is triggered, the DVR can be set for triggering full screen mode at main monitor output and/or spot monitor output. DVR316 can be set for sending email message notification with alarm snapshot attached or sending alarm snapshot to an FTP server.

DVR316 shall provide alarm weighted recording mode where no alarm activity the DVR records one frame per second. If there is alarm, the DVR records based on full recording rate.

DVR316 shall be set for different recording frame rate. The DVR shall be set in different recording mode including alarm/motion recording, schedule recording, or continuous recording.

DVR316 shall be installed up to 2 * 2TB hard disk drivers. DVR316 shall have the function of HDD circular recording feature in which the oldest recordings get overwritten automatically.

DVR 316 shall connect to an **external USB DVD-RW**, USB 2.0 flash disk, FTP client, and/or CMX Software for recording retrieval. The DVR shall provide multiple channels backup file playback feature with playback software included in the backup media. The DVR shall be able to provide single channel AVI backup file(s) which can be played by Windows Media Player.

DVR316 shall provide time 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 DVR shall provide fast forward and fast rewind up to 64x in speed. The DVR shall provide playback pause and stepping features. The DVR shall provide audio recording. The audio shall be listened during playback.

DVR316 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.

DVR316 shall provide 3G mobile remote live monitoring capability for iPhone or Android mobile phones.

Multiple DVR316 DVRs installed shall be connected and managed by Center Management Software (CMX Software). DVR316's individual camera can be grouped in the CMX Software. DVR316's cameras groupings in CMX Software can be assigned for certain user(s) for user management purpose. DVR316's live video and recording can be retrieved by CMX Software. The CMX Software shall provide remote redundant recording features for DVR316.

4.0 Minimum Performance Specifications

		DVR
Name		H-264 Full D1 Digital Video Recording Systems
Model		DVR316
Recording	Recording mode	SATA HDD: internal * 2
	Video source	External alarm / motion detection / schedule / manual
	Resolution	Full D1: 720 * 576 (PAL) 720 * 480 (NTSC) / CIF : 320 * 288 (PAL) 320 * 240 (NTSC)
	Recording NTSC	D1 120 / CIF 480 FPS
	Recording PAL	D1 100 / CIF 400 FPS
Backup	Schedule	7 day * 24 hrs time table, recording mode configurable
	Backup	USB 2.0 flash disk / HTTP file download / Audio supported
	DVD/RW	External USB DVD/RW
Playback	Playback	H.264 AVC video
	Speed	FR: 2x, 4x, 8x, 16x, 32x, 64x FF: 2x, 4x, 8x, 16x, 32x, 64x
Video	Compression	H.264 AVC and JPEG
	Video Input	Analog cameras
	Camera Name	12 Characters
	Live video	PAL: 400 FPS / NTSC: 480 FPS
	Video Output	BNC* 1+ Spot monitor
Multiplexer	VGA Output	3D intellectual motion adoptive refinement with vivid image enhancement VGA engine up to 1920* 1080i
	Backlight saving	LCD backlight saving mode
	Multiplexer	Sequence / digital zoom / freeze
	Split Screen	4, 9, 16
Management Reports	Spot monitor	Yes
	Management Reports	Full alarm, configuration, and operation reports exporting over HTTP or USB
Alarm/event	Authentication	User authentication with feature configurable
	Recording day	Dynamic recording day calculation
	Alarm/event	DI * 8 and DO* 2(NO/NC)
	Motion	Motion grid 44*36 each channel, 8 sensitivities
Accessories	Event	External alarm, video loss, power recovering, motion detection, schedule, logon, HDD format
	Email	Alarm notification with JPEG attachments
	Accessories	Remote controller addressable up to 255 DVRs
	P/T/Z protocol	LILIN MLP2 and Pelco RS-485
	Keyboards	PIH- 931D keyboard
	IR receiver	Extra IR extension connector
	Mouse(Optional)	USB, drag-n-drop, right-mouse-click
Audio	G.711 audio, 0.7 Vp-p, 300Hz to 3KHz	
Network	Audio in/out	RCA 4 inputs, 1 output
	Remote control	Yes
	Network	Direct internet browser access / multiple users access
	Protocols	ARP / TCP / IP / UDP / HTTP / SMTP / FTP / DDNS / PPPoE / DNS / NTP
	Web	Live / event log & time search playback / AVI / snapshot

Software	DVR status	HTML DVR status
	IP Scan	IPScan supported, easy-to-setup for IP address
	Backup Manager	Multiple DVRs FTP file download and multi-channel playback
Others	Mobile Phone	iPhone, and Android mobile phone supported
	WDT	Hardware watchdog timer
	DST	Daylight saving time
Power	Multilanguage	English, Chinese, Spanish, Danish, Swiss, Norwegian, Arabic, Portuguese, Simplified Chinese, Vietnamese, Italian
	CPU/OS	32-bit RISC Processor, ARM926, SoC 336 MHz, Linux 2.6 kernel
	Power	DC 12V, 5.0 A. 60W
	Working Env.	Temp:0°C~+50°C / Humidity:0%~80%
	Dimension	360 mm * 60 mm * 308 mm
	Weight	3.0 kg w/o HDD