



## PX-1600 Series DVR

The PX-1600 brings you the utmost in digital video quality and performance by offering an exceptional frame rate (120 fps in NTSC, 100 fps PAL). The PX-1600 also provides 4 channels of audio recording.

The PX-1600 represents state-of-the-art digital video technology.



Proximal\Prox"i\*mal\, adj: The point of origin.

### MAJOR NEW FEATURES

- Digital Matrix, support maximum 8 monitors display
- Automatic adjustment for DST
- Face Detection for Object Index
- Visual Automation
- POS Live View on Webcam
- Touch Screen Support
- POS Live Viewer
- Spot Monitor Controller
- H264 Codec
- Noise Tolerance
- Noise Detection

### SMART SEARCH + EASY PLAYBACK

- Timeline Search
- Face Detection for Object Index
- Object search
- Index search
- Object Index

### NOTIFICATION

- E-mail notification
- SMS notification
- Directs PTZ to a preset location

### WEBCAM REMOTE SURVEILLANCE

- Blackberry Phone Support
- POS Live View via IE Browser
- SSL Encrypt Connection Support
- Control Panel to Provide Instant Information and Operation
- Event List Query
- Download Center

### VIDEO ANALYTICS

- Advanced Motion Detection
- Face Detection
- Scene Change Detection
- Unattended Object Detection
- Missing Object Detection
- Privacy Mask
- Enhanced Object Counting
- Intrusion Alarm
- People Counting
- Video Stabilization
- Crowd Detection

### REMOTE PLAYBACK AND MONITORING

Proximal's PX-Series is a true network surveillance system. We offer a wide range of solutions for remote playback and monitoring. Captured images or videos can be easily distributed to any remote locations thru LAN/WAN environments or internet connections.

### SMART RECORDING TECHNOLOGY

Proximal's smart recording technology automatically distributes frame rates to the camera that need the most based on alarms or motion detection that allows more efficient ways to utilize your DVR resources.

### BUILT-IN MOTION DETECTION

PX-Series' motion detector can be configured individually for each camera. Sensitivity and masking area can be adjusted separately according to the environmental condition. Thus providing a reliable and accurate detection.

### DIGITAL WATERMARK

The digital watermark will check whether the image is originally captured from the PX system or not. If the captured image has been altered or modified in any way, then the software will indicate that the image has been damaged and it will no longer be used as legitimate evidence.

### AUDIO RECORDING

With the addition of audio recording, you are now able to record and playback both audio and video at the same time, which gives you a more precise picture of the captured event.

### RECORDING MODE

- Motion detection recording
- Around the clock recording
- Pre-schedule recording
- Post alarm recording

### CAMERA CONFIGURATION

- Independent video brightness and contrast control
- Selectable motion detection sensitivity and masking area for each camera
- Independent recording quality and frame rate adjustment

### REMOTE MONITORING SOFTWARE

- Remote View
- IP Multicast
- Web Cam
- Remote Playback system

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## ALSO AVAILABLE

### Major Features

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- 720 X 512 recording and display resolution
- H.264, Mpeg 4 / Wavelet compression technology
- Motion detection, around the clock, and pre-schedule recording mode
- Alarm to E-mail (Jpeg or text message)
- Embedded I/O devices control
- Embedded PTZ control panel
- Build-in web server
- Digital watermark authentication
- Hardware watchdog features
- Video lost detection
- On screen video loss message
- Supports dual screen display
- Full screen view
- Dual display for live monitoring and playback on two monitors
- Screen pop-ups on motion or alarm activation
- Object counting
- Object tracking and zooming by PTZ domes
- Unattended and missing object detection
- Alarm on objects passing between predefined regions
- Video de-interlace filter
- Higher screen resolution support of 1920x1080
- PX-Map
- Lockout Windows
- Image size indicator
- Synchronized video and audio
- Backlight compensation
- Video auto gain controller
- Video scaling filter
- AVI repair utility
- System log
- Support 1,000 accounts for logins and passwords
- Multi level password protection
- Twin DVR
- Embedded I/O devices control
- Embedded PTZ control panel
- Support dynamic IP address
- Intelligent Recording & Playback
- Privacy Mask Protection
- Advanced Motion Detection
- Scene Change Detection
- Pre-Recording Using HDD
- Advanced Round-The-Clock recording
- Instant Playback
- Time Merge From Different Clips

### Notification

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- E-mail notification with attached video images on motion and alarm activation
- E-mail or telephone notification on video lost or I/O error
- Directs PTZ dome to a preset location on motion and alarm activation
- SMS alerts available in Main System, Center V2 and VSM
- Alarms on objects that pass between predefined regions

### Remote Monitoring Software

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- Remote View
- IP Multicast
- Webcam
- Remote Playback System
- WinCE PDA
- I-Mode

### IT Technology

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- PSA Network Security
- Authentication Server: central control of password settings

### Recording

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- Choice of recording at 15, 30, 60, 120 fps
- Recording trigger by round-the-clock, motion detection, alarm and schedule
- Adjustable recording quality and frame rate for each camera
- Pre-motion and post-motion recording
- Supports Windows XP / Server 2003 burning software

### Audio

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- 4 channels of live audio streaming and recording (expandable to 16)

### Smart Search & Ease Playback

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- Object search
- Index search
- Object Index
- Thumbnail browse for ease of search for specific frames
- Export a video footage within a specified time range
- Synchronized audio and video for both live and playback
- Continues playback of set frames A to B
- EXE format export, playable with any third-party players
- AVI format export in multiple screens mode
- DVD format export for Hybrid Card format files
- Option for recycling the input-triggered events (Never recycle)
- Backup, save AVI and BMP functions accessible in LAN ViewLog
- Automatic refresh of the video event list in LAN ViewLog

### PTZ Control Protocol Support

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Ademco Jupiter  
BOSCH TC700 & TC8560  
Canon VC-C3 / VC-C4  
CBC GANZ ZC-S120 Series  
Chiper CPT-V9KRP  
COP 15-CD53W (Pelco D)  
Directed Perception PTU Series  
D-Max Dome  
Dong Vang DOH-240  
DynaColor D-7720 / 7722  
Elbex Matrix / 1000  
GKB SPD-221  
Elmo PTC-200C / 400C / 1000  
Eyeview T-Power (T2-SA27)  
JEC Dome  
JVC (TK-S576B/TK-S655/TK-C686E)  
Kalatel Cyber Dome KTD-312  
Kampro Technology K-ZC23  
Kenko DMP23-H1  
Lilin PIH-7000/7600/7625/820  
MESSOA SDS600 Series  
Mintron 54G2AHN/P  
Minking Dome  
Nang Wang WVD 2300PNT (firmware version 41)  
Panasonic WV-CS850 / 854  
Pelco Dome  
Pelco Spectra 3  
PTZ in I/O  
SAE DR-E 588  
Samsung SCC-641 / 643  
Samsung SPD-1600  
Sensormatic Ultra IV  
Sony EVI-D100 / D100T  
VAAN Dome  
360 Vision Vid-18COP04 (Pelco P)

## CURRENT FEATURES

### Main System

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- New H264 V2 Codec
- Video Analytics (optional)
- New Resolutions: 1920x1080 (HD) & 1280x800 (NB)
- Support for third party IP cameras: Sony, Panasonic, ASIX, Mobotix, IQinvision, and JVC
- Support for PX-NVR
- Support for PX-Joystick

### Authentication Server

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- Support for Webcam, Multiview, and ST-Map

### Webcam

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- Single sign-on for Multiview and PX-Map
- Video and Audio codec options for single view
- Audio wave display for microphone and speaker functions
- User-Level countdown
- Video Analytics (optional)
- Support IP Multicast transmission
- Support for up to 64 PTZ presets
- New webcam interface
- Bandwidth control function
- Live image display of triggered I/O in PX-Map
- Visual/Audio Adjustment option for 3G mobile phones

## SPECIFICATIONS

### VIDEO

Video standard:  
PAL/NTSC auto-detect

Resolution:  
720 x 576 PAL - 720 x 484 NTSC

Digital Zoom:  
2, 4, 6, 8, or 10 times

Compression:  
WAVELET, MPEG, MOTION JPEG, H264

Inputs:  
16 Composite video I/V-p 75ohm, auto-terminating

Outputs:  
I/V-p, 75 ohm

Display Rate (FPS):  
NTSC: 120 total, configurable per camera  
PAL: 100 total, configurable per camera

Video Formats:  
AVI

Image Formats:  
bmp, jpg, tif

### RECORDING MODES

Round the clock - Motion Detect  
Alarm triggered - Scheduled

Record Rate (FPS):  
NTSC: 120 total, configurable per camera  
PAL: 100 total, configurable per camera

Recording Resolution:  
720x512 - high resolution  
640x480 - medium resolution  
320x240 - standard resolution

### RATED VOLTAGE AND POWER

Maximum Power:  
650W

Transient Response:  
+5V, +12V outputs return to within 5% in less than 1ms for 20% load change.

P/G Signal:  
100-500ms

Over Voltage Protection: recycle AC to reset:  
+5V trip point < +6.5V/+3.3V trip point  
+41V/+12V trip point < +15.6

Overload Protection:  
Latching Protection:  
+5V @ < 53A  
+3.3V @ < 48A  
+12V @ < 23A

Leakage Current:  
< 3.5mA @ 240VAC

OUTPUT: +5V  
Max Load 38A\*  
Min Load 15A  
Load Reg + 5%  
Ripple V(p-p) 50mV

OUTPUT: -5V  
Max Load 0.5A  
Min Load 0A  
Load Reg + 10%  
Ripple V(p-p) 100mV

OUTPUT: +12V  
Max Load 18A  
Min Load 0.8A  
Load Reg + 5%  
Ripple V(p-p) 120mV

OUTPUT: -12V  
Max Load 0.8A  
Min Load 0A  
Load Reg + 10%  
Ripple V(p-p) 120mV

OUTPUT: +3.3V  
Max Load 28A\*  
Min Load 0.5A  
Load Reg + 5%  
Ripple V(p-p) 50mV

OUTPUT: +5V/3B  
Max Load 20A  
Min Load 0A  
Load Reg + 5%  
Ripple V(p-p) 50mV

+5V and +3.3V combined output:  
240 Watts max  
+5V, +3.3V and +12V combined output:  
380 Watts max

### INPUT

Input Voltage:  
115VAC/230VAC

Input Frequency Range:  
47Hz to 63Hz

Input Surge Current (p-p):  
< 50A @115VAC < 80A @230VAC

Input Current:  
10.0A for 115VAC/5.0A for 230VAC

Hold-up Time:  
< 17ms at Full Load

Efficiency:  
> 68%

EMI/RFI:  
FCC Class B

### CONNECTORS

Video inputs:  
16 BNC male, auto-terminating

Video Output:  
15 pin VGA connector (CRT/TFT Monitor),  
RCA (TV, CCTV monitor)

Keyboard:  
PS/2

Mouse:  
PS/2

USB (four ports):  
USB 2.0, 11

Parallel Port:  
DB25 female

Serial Port A:  
RS232  
DB9 male

LAN:  
Ethernet - RJ45S modular jack 8 pins shielded  
(1) 10/100 Base-T according IEEE802.3  
LAN, TCP/IP, ISDN, PSTN, ADSL

Audio:  
4 channels  
Line out  
Line in  
Mono/stereo mic in

### STORAGE

Internal:  
250 GB - 8 TB (RAID systems available)

External:  
Mapped network storage devices

### BACKUP FUNCTIONS

RDD, DVD / CD+RW, DVD, MO, ZIP

### CONTROL

RS232:  
Output signals according EIA/TIA-232-F,  
max. input voltage +25V

Keyboard Input:  
Conform PS485, max. signal voltage +12V,  
power supply to keyboard 11V-12.6V at max  
400mA

Keyboard Output:  
Conform PS485, max. signal voltage +12V

### MECHANICAL

Pack Mount:  
Dimensions: 19 (w) x 7 (h) x 20.5 (d) inch  
Weight: approx 45.2 lbs

Tower:  
Dimensions: 8.5 (w) x 21.5 (h) x 20 (d) inch  
Weight: approx 42.8 lbs

### ENVIRONMENTAL - DVR

Temperature:  
Non-Operating -40°C to +70°C  
Operating 0°C to +55°C

Shock:  
Unpackaged:  
50 g trapezoidal waveform  
Velocity change of 170 inches/second

Packaged: Half sine 2 millisecond  
Product Weight (pounds) <20  
Free Fall (inches) 36  
Velocity Change (inches/sec) 167

Product Weight (pounds) 21-40  
Free Fall (inches) 30  
Velocity Change (inches/sec) 152

Product Weight (pounds) 41-80  
Free Fall (inches) 24  
Velocity Change (inches/sec) 136

Product Weight (pounds) 81-100  
Free Fall (inches) 18  
Velocity Change (inches/sec) 118

Vibration:  
Unpackaged:  
5 Hz to 20 Hz: 0.01 g<sup>2</sup>/Hz sloping up to 0.02 g<sup>2</sup>/Hz  
20 Hz to 500 Hz: 0.02 g<sup>2</sup>/Hz (flat)

Packaged:  
10 Hz to 40 Hz: 0.015 g<sup>2</sup>/Hz (flat)  
40 Hz to 500 Hz: 0.015 g<sup>2</sup>/Hz sloping down  
to 0.00015 g<sup>2</sup>/Hz

### ENVIRONMENTAL - Power Supply

Operating Temp:  
10°C to 50°C

Operating Alt:  
Sea Level-10,000 ft

Non-Operating Vibration:  
Operating: 10-300 Hz, 0.5G, 3 axes, 1hr ea axis  
Non-operating: 10-300 Hz, 2.0G, 3 axes,  
1hr ea axis

MTBF:  
50,000 hrs @ 25°C

# PX-1600 Series DVR

## ELECTROMAGNETIC COMPATIBILITY

### EMC REQUIREMENTS:

- FCC (Class B)  
Title 47 of the Code of Federal Regulations, Parts 2 and 15, Subpart B, Radio Frequency devices (USA)
- ICES-003 (Class B)  
Interference-Causing Equipment Standard, Digital Apparatus (Canada)
- EN55022: 1998 (Class B)  
Limits and methods of measurement of Radio Interference Characteristics of Information Technology Equipment (European Union)
- EN55024: 1998  
Information Technology Equipment - Immunity Characteristics - Limits and methods of measurement (European Union)
- AS/NZS 3548 (Class B)  
Australian Communications Authority, Standard for Electromagnetic Compatibility (Australia and New Zealand)
- CISPR 22, 3rd Edition (Class B)  
Limits and methods of measurement of Radio Disturbance Characteristics of Information Technology Equipment (International)
- CISPR 24: 1997  
Information Technology Equipment - Immunity Characteristics - Limits and Methods of Measurement (International)

### SAFETY:

- CSA C22.2 No. 60950/UL 60950, 3rd Edition, 2000  
Bi-National Standard for Safety of Information Technology Equipment including Electrical Business Equipment (USA and Canada)
- EN 60950, 2nd Edition, 1992 (with Amendments 1, 2, 3, and 4)  
The Standard for Safety of Information Technology Equipment including Electrical Business Equipment (European Union)
- IEC 60950, 2nd Edition, 1991 (with Amendments 1, 2, 3, and 4)  
The Standard for Safety of Information Technology Equipment including Electrical Business Equipment (International)
- EMKO-TSE (74-SEC) 207/94  
Summary of Nordic deviations to EN 60950 (Norway, Sweden, Denmark, and Finland)

### SUPPORTED PTZ CAMERAS

Ademco Jupiter, BOSCH TC700 & TC8560, Canon VC-C3 / VC-C4, CBC GANZ ZC-S120 Series, Chipex OPT-V9KRP, COP 15-CD53W (Pelco D), Directed Perception PTU Series, D-Max Dome, Dong Yang DOH-240, DynaColor D-7720 / 7722, Elbex Matrix / 1000, GKB SPD-221, Elmo PTC-2000, Elmo PTC-4000, Elmo PTC-1000, Eyeview T-Power (T2-SA27), JEC Dome, JVC (TK-S576B / TK-S855 / TK-C686E), Kalatel Cyber Dome KTD-312, Kampro Technology K-ZC23, Kenko DMP23-HI, Lilit PIH-7000 / 7600 / 7600PL / 7625 / 820, MESSOA SDS600 Series, Mintron 54G2AHN/P, Minking Dome, Nang Wang WVD 2300PNT (firmware version 4.1), Panasonic WV-CS850 / 854, Pelco Dome, Pelco Spectra 3, PTZ in I/O, SAE DR-E 588, Samsung SCC-641 / 643, Samsung SPD-1600, Sensurmatic Ultra IV, Sony EVI-D100 / D100T, TOA CC551, StarVision, VIDO Dome, VAAN Dome, 360 Vision Vid-18COPO4 (Pelco P)

### MINIMUM PC SYSTEM REQUIREMENTS

for Monitoring Center (MC) and Remote Software (RS)

Operating System: Windows 98 SE, 2000 or XP  
Processor: 800 MHz Pentium III (MC) / 600 MHz Pentium III (RS)  
RAM Memory: 512 MB  
Free Disk Space: 300 MB  
Video System: 8 MB video memory, 800 x 600 with 16-bit color  
Connection: 10/100-BaseT network interface, 56k modem

### ACCESSORIES (OPTIONAL)

PX-Net - PTZ Control • PX-IO - Alarm Handling • PX-Relay • POS overlay



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