



# Opal

## The compact Network Video Recorder

The space and power saving Opal digital video recorder incorporates a 2TB hard disk. Similar in size to a Yellow Pages telephone directory and consuming less than 30 Watts, the compact designed Opal enables users to fully enjoy the benefits built into the latest generation of IP network cameras.

### High performance and flexible recording

The Opal is an affordable and highly reliable recording solution which is ideal for small business and rapid deployment applications. Images from up to 9 IP/Megapixel cameras can be recorded simultaneously with a choice of H.264, MxPEG, MPEG-4 or MJPEG compression.

### Easy to use

Wavestore's remote monitoring software allows users to securely monitor real-time live images or retrieve recorded video over the network, whilst multiple units can be configured into a server group to support larger or multiple site projects.

Simple drag and drop function enables each user to create unique multiple display preferences, whilst the Opal offers an extremely fast search facility to allow users to be able to quickly review recorded images of any incident.

Export to the native Wavestore format and benefit from features such as encryption and image authentication. Alternatively, convert the video to any of a wide selection of standard formats such as MPEG, Flash Video, AVI, and many more.

### Ultra reliable

The Opal, which can be wall mounted if required, utilises an ultra reliable Linux based open software platform and is supplied with a full one year return to base Warranty.

## Recording System

Video standards	IP
Video resolution	QCIF, CIF, 2CIF, DCIF, D1, HD720, HD1080, VGA, megapixel, custom
IP Rate	High image rates supported, camera dependent
Video displays	Adjustable in size and number
Multiscreen displays	Customisable and traditional layouts with saving option per user
Still image	JPEG/BMP/PNG
Record type	Continuous, schedule, motion, alarm, event and digital input trigger
Recording tracks	3 independent tracks assignable to different HDDs with different settings
Overwrite modes	Configurable auto deletion and overwrite function by time or disk allocation
Detection	Motion, camera tamper, darkening, video loss
Motion Mask/Areas of interest	Configurable areas to target analogue analytics
Privacy Mask	<a href="#">Configurable mask to avoid viewing sensitive areas within a camera view</a>
Reported events	Full system monitoring including SMART disk health monitoring
Reporting events	Via screen, email or TCP/IP message
Operating System	Embedded Linux platform
Time zone	Regional setting available
Languages	Multiple languages supported

## Remote Viewer Client

Remote users	5 to unlimited concurrent users
Operating Systems	Windows (7, Vista, XP), Linux (Red Hat and Debian based systems) and <a href="#">Android</a>

## SDK

Windows ActiveX Component	Connecting to servers, retrieving and displaying multiple cameras, full playback and PTZ control, independent and synchronised playback, date/time searching, events annotations, access to raw decoded images, decryption of encrypted images, extract timestamps from images, variable rewind speed, ability to track recordings, ability to trigger boost and other event actions, command for switching cameras to spot monitors, expose mouse events
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## Playback, Find, Copy

Playback functions	Linear and logarithmic rewind capability - Variable speed slider
Playback speed	Up to 8192x times
Playback mode	Multi-way: play, rewind, jump, fast-forward and frame-step multiple cameras simultaneously
Slow motion playback	Available
Zoom	Unlimited digital zoom by mouse wheel
Search mode	Date, time, annotations, <a href="#">motion</a> , <a href="#">alarm</a>
<a href="#">Intelligent search</a>	<a href="#">Highlighted activities on recorded streams</a>
Copy mode	Backup multiple cameras including linked audio
Copy devices	CD, DVD, USB, HDD

## Security

Password profile	Multi protection levels
Cameras and displays	Accessible on a per-user basis
Configuration files	Save and restore capability for any server in the group
Digital watermarking	Image authentication with real-time checking
Encryption	Up to 4096 bit encryption
Diagnostics	Remote, secure diagnostics, repair functionality available
Remote administration	Remote control via TCP/IP network, including restart and rebooting
Automatic system re-start	After power loss (when power resumes)

## Advanced Systems Modules

Advanced Backups	Provides the ability to transcode video and audio data to large number of alternative formats
Advanced Events	Shows a real-time stream of incoming alarms/events on the main window
Interactive Maps	Configurable map screen for finding and interacting with cameras and third party devices
De-warping	De-warp real time and archived fisheye images from hemispheric cameras - Optional
Integrated Applications	People counting, people tracking, queue management, crowd analysis, biometrics solutions, facial recognition, command & control, PSIM, access control, emergency management (C <sup>4</sup> ISR), <a href="#">video analytics</a> , <a href="#">licence plate recognition</a> - Optional

— Coming soon

## Cameras

Analogue inputs	NA
HDcctv inputs	NA
Network inputs	Up to 9 (IP/megapixel) channel
Hybrid configuration	NA
Compression formats	H.264, MPEG-4, M-JPEG and MxPEG
PTZ devices	Full 3 axis control (PAN, TILT & ZOOM) using a 3-axis mouse or joystick
PTZ	Preset and Tour
IP camera setup	Drop down menu
IP camera ping	Available
IP camera web browser setup	Direct access
IP camera discovery	uPnP, Bonjour
Camera and tracks	Multiple recording profiles

## Audio

Inputs channels	NA
Recording format	NA
Sampling rate	NA
Features	Lip-synchronised playback and live functionality for video/audio, bi-directional

## Alarms

Inputs/Outputs	Up to 36/36 - Optional
Alarm notification	Via viewer client
Alarm actions	Record on alarm, text overlay, boost recording rate, trigger output, spot monitor, PTZ camera on preset, notify client, run script, emails, flashing light, sound alerts
Alarm triggers	Video loss, darkening, motion within image, camera movement, alarm input, login succeeded, login denied, fault, warning
Other features	Alarm event logging, enable and disable on schedule
Camera alarm	Selected cameras supported
Watchdog function	Auto-reboot of system in case of system failure

## Storage

Internal HDD	1 x 3.5" SATA-2 internal HDD
Hot-Swappable HDD	NA
NAS and SAN storage	NA
RAID level	NA

## Network

Network ports	1 port
Network bandwidth	1 x 1000 Mbps
Supported protocols	TCP/IP, DNS, SMTP, NTP, SSH, HTTP, RTSP
Configuration protocol	Static IP entry
Time sync (NTP)	Automatically synchronized to other Wavestore servers or external time source
Bandwidth control	Per user or per Wavestore

## Electrical

Input voltage	100-240V
Typical power consumption	30W (1 x 2TB HDD)
Power supply rating	60W
Redundant power supply	Low power - External supply

## Environmental

Operating Temperature	5 to 40°C (41 to 104°F)
Relative humidity	Humidity 20 to 40% RH (non-condensing)

## Mechanical

Chassis form factor	Compact mini-chassis
Dimension (D x W x H)	288 x 300 x 65 mm
Shipping dimension	385 x 430 x 140 mm
Shipping weight	5kg

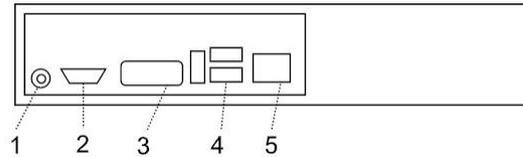
## Optional Interfaces

Keyboard and joystick controller	Designed to provide an ergonomic and configurable user interface - Optional
Joystick controller	USB 3-axis joystick controller with multiple buttons

— Coming soon

# Opal rear panel

1. 12V DC (centre pin +ve)
2. VGA output
3. DVI output
4. 3 USB 2.0 ports, plus 2 additional ports on the front of the unit
5. LAN interface



# Wavestore product range

	Granite	Rock	Crystal	Quartz	Opal
<b>Digital Video Recorder (DVR)</b>	✓	✓	✓	✓	
H.264 Hardware Compression D1 Resolution (NTSC/PAL)	Up to 32 ch	Up to 32 ch	Up to 16 ch	Up to 16 ch	
<b>Network Video Recorder (NVR)</b>	✓	✓	✓	✓	✓
Combinations of H.264, M-JPEG, MPEG-4, MxPEG codecs concurrently supported	Up to 64 ch	Up to 64 ch	Up to 16 ch	Up to 16 ch	Up to 9 ch
<b>Hybrid video recorder (HVR)</b>	✓	✓	✓	✓	
Analogue and network cameras simultaneously supported	Up to 64 total ch	Up to 64 total ch	Up to 16 total ch	Up to 16 total ch	
<b>Hardware configuration</b>	Available on request				
Internal HDD storage	16 x 3.5"	5 x 3.5"	4 x 3.5"	2 x 3.5"	1 x 3.5"
Front loading HDDs and Hot Swap	✓	✓	na	na	na
IP Gigabit network ports	2	2	1	1	1
Redundant power supply	✓	Optional	na	na	na
Typical power consumption	250W	160W	100W	100W	30W
iSCSI RAID storage expansion	✓	✓	✓	✓	na
SAS RAID storage expansion	Optional	Optional	na	na	na

**Wavestore Mobile (DVR/NVR):** a compact and powerful integrated video recording solution ideal for mobile applications is schedule for release.

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