



# 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 16 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 (watermarking). 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, 4CIF, D1, HD720, HD1080, VGA, megapixel, custom
Rate at Full D1	Up to 50/60 fps per input - 800/960 fps per server
Video displays	Adjustable in size and number
Multiscreen displays	1, 4, 9, 16 and customisable layouts
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 moved, darkening, video loss
Areas of interest	Configurable areas to target analogue analytics
Privacy Mask	Configurable mask to avoid viewing sensitive areas within a camera view
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	English, Arabic, French, German, Hungarian, Italian, Japanese, Portuguese, Russian, Spanish and Turkish

Remote Viewer Client	
Remote users	5 users concurrently as default - Field upgradable
Operating Systems	Windows (7, Vista, XP), Linux (Ubuntu, Fedora, Debian), and Mac OS X
Web Browser Client	Available on any device supporting Adobe Flash or HTML5 H.264 Video – includes: iPad, iPhone, Android, Firefox, Chrome, Internet Explorer

Playback, Find, Copy	
Playback functions	Linear rewind capability - Variable speed slider
Playback speed	Up to 8192 lps
Playback mode	Multi-way: play, rewind, jump, fast-forward and frame-step up to 16 cameras simultaneously
Slow motion playback	Available
Zoom	Unlimited digital zoom by mouse wheel
Search mode	Date, time, motion, alarm, notes
Intelligent search	Highlighted activities on recorded streams
Copy mode	Backup multiple cameras including linked audio
Copy devices	CD, DVD, USB, HD

Security	
Password profile	Multi protection levels
Cameras/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/rebooting
Automatic system re-start	After power loss (when power resumes)

Systems Modules	
Maps	Multiple level maps showing camera alarms, speakers, microphones, etc. - Optional activation
Alarms	Logging, notification, and viewing associated video - Optional activation
Dewarping	Dewarp real time and archived fish-eye images from hemispheric cameras - Optional activation
Video Analytics	People counting and tracking, queue management, retail footfall analytics, ANPR, traffic monitoring, perimeter security, abandoned object, stolen object and intruder detection - Optional activation

To be referred to Wavestore V5.6  
 Coming soon

## Cameras

Analogue inputs	NA
HDcctv inputs	NA
Network inputs	Up to 9 (IP/megapixel) channel
Hybrid configuration	NA
Compression formats	H.264, <a href="#">MPEG-4</a> , M-JPEG, MxPEG, Wavelet
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	20/20 via USB I/O Device - Optional
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/disable on schedule
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

## Environmental

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

## Optional Interfaces

Virtual Matrix	<a href="#">WaveMatrix</a> - connects the Wavestore recorders to a monitor wall which can be controlled either by Master PCs or joysticks - optional
Keyboard and joystick controller	<a href="#">WaveHelm</a> - designed to provide an ergonomic and configurable user interface - optional
Joystick controller	USB 3-axis joystick controller with 8 buttons

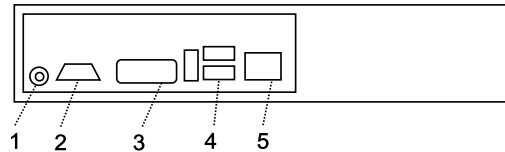
## Mechanical

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

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## Opal rear panel

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



## Opal standard part numbers

Opal-04-2S1                      Opal 4 IP inputs – 1 surveillance grade HDD 2Tb  
 Opal-09-2S1                      Opal 9 IP inputs – 1 surveillance grade HDD 2Tb

## Wavestore standard product range

	Opal IP	Crystal HY	Rock	Granite
<b>Camera inputs</b>				
Analogue inputs	NA	8 ch*	Up to 32 ch	Up to 32 ch
Network inputs	4 ch* to 9 ch	On request*	Up to 64 ch	Up to 64 ch
HDcctv inputs	NA	NA	On request*	On request*
<b>Server specifications</b>				
Internal HDD storage°	2 Tb	2 Tb* to 8 Tb	5 x 3.5"	16 x 3.5"
Hot-swappable HDD	NA	NA	✓	✓
IP Gigabit network ports	1	1	2	2
Redundant power supply	NA	NA	Optional	✓
Typical power consumption	30W	100W	160W	250W

\*Field upgradable

° Optional external storage is available for the entire product range

**Wavestore Mobile DVR:** a compact and powerful integrated video recording solution ideal for mobile applications is due to release.

**Opal Out-of-the-Box:** a preconfigured solution with 4 IP cameras, router and PoE.

In order to evaluate the Wavestore interface and performance please visit our web site and download the **Live Demo Software**. This will enable you to experience the ease of use of the interface and view high quality images from a selection of analogue and network cameras. A **Web Viewer** option that does not require any software installation is currently in development.

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