

DEDICATED MICROS LTD**NEW DIGITAL SPRITE 2, 6-CAMERA, 9-CAMERA OR 16-CAMERA, HIGH PERFORMANCE DIGITAL VIDEO MULTIPLEX RECORDER****DIGITAL VIDEO RECORDER WITH BUILT IN MULTIPLEXER (DVR)****1. INTRODUCTION**

The New Digital Sprite 2 shall provide true flexibility to any CCTV security solution. It shall provide an intuitive interface allowing easy local user operation and IP connectivity to provide remote monitoring and system configuration capabilities.

The digital video recorder and multiplexer (hereafter referred to as DVR) shall provide a high quality, 6-, 9- or 16-channel recorder capable of storage and playback of images from 1 to 6, 1 to 9, or 1 to 16 camera inputs.

The internal hard disks shall provide high quality, continuous digital recording, with an option to record up to 50pps or 100pps. The unit shall also be compatible with the Dedicated Micros RAID and JBOD units to extend the storage solution.

High quality JPEG image recordings shall be accessible locally to the user from a single button selection or via a powerful GOTO and an event recall facility. Remote operators shall also be able to utilize MPEG-4 compression technology to view live images across an Ethernet network by using the Dedicated Micros NetVu ObserVer software included with the DVR or optional embedded DV-IP Decoders.

Variable alarm configuration shall allow remote notification of alarms via a variety of communication channels. There shall be support for pre-event alarm recording to ensure sufficient images are captured before the incident occurs and high quality bi-directional network audio shall provide on-site communication.

The New DVR shall be supplied with a built in DVD-R writer providing a quick and easy solution for copying images to DVD-R or CD-R media. The DVR shall also support the option to utilise FTP archiving to allow evidence to be transferred over the network.

The DVR shall support digital watermarking to help identify and eliminate any tampering with recorded images.

The New Digital Sprite 2 shall be a single box solution which shall include in-built co-axial & twisted pair serial telemetry control.

2. UNIT CAPABILITIES

The DVR shall be available as a 6, 9 or 16 camera input unit.

The DVR shall support a main and spot monitor for displaying images from cameras.

The DVR shall incorporate a triplex multiplexer for live multi-screen viewing and playback of images without interrupting multiplex recording.

The DVR shall allow live and playback images to be viewed in the same multiscreen display.

Each segment within the multiscreen display shall be selectable for viewing live images or playback of recorded images.

The DVR shall incorporate an advanced network server for remote monitoring, alarm handling and configuration.

The DVR shall provide a user-friendly, paged menu system that is controlled from the front panel keys of the DVR and viewable on a composite monitor (not included) that can be connected to the DVR's main monitor output.

The DVR shall provide the capability for the user to read the on screen menus in any of eleven languages. Languages shall include; English, French, German, Spanish, Italian, Russian, Czech, Polish, Dutch, Hungarian and Swedish.

The DVR shall maintain all user-defined programming in the event of power loss or power down.

The DVR shall provide a Text-In-Image feature that enables text (such as POS, ATM data and production line) to be received through the RS232 COM ports, associated with a camera and recorded with the video.

The DVR shall support both JPEG and MPEG-4 compression.

The DVR shall support the option to view live and recorded images over a high speed network in JPEG compressed format.

The DVR shall support the option to view live and recorded images over a low speed network in MPEG-4 compressed format

The DVR shall always record in JPEG format to ensure high quality recording is maintained independently to compression format being used for viewing.

3. RECORDING CAPABILITIES

The DVR shall be able to record video images to disk: continuously, upon motion detection, on receipt of an alarm or according to a time schedule.

The DVR shall have the capability to simultaneously: record images, archive background images, allow multiple user network viewing and playback with no loss of record performance.

The DVR shall be available in two record rate versions:

Record rate of up to 60 PPS (pictures per second) (NTSC) or 50 PPS (PAL).

Record rate of up to 120 PPS (pictures per second) (NTSC) or 100 PPS (PAL).

The DVR shall support standard and variable rate recording.

The standard and variable record settings shall be configurable as either pictures per second or milliseconds per picture.

The DVR shall support four modes of operation, these shall be; Rate, Day, Night and Weekend.

The record rates shall be configurable for each mode of operation.

The DVR shall provide standard record scheduling options for Record Rate, Event Rate, Event Active, and Event Mode.

The Record Rate shall be the record rate for standard continuous recording.

The Event Rate shall be the record rate upon motion or external alarm.

The Event Active shall provide options to enable alarms, activity, or both alarms and activity.

The Event Mode shall provide the option of overriding the standard recording mode upon event or alarm notification, with interleave or exclusive recording mode.

The interleave mode shall prioritize standard recording of active or alarmed cameras in the multiplex sequence over non-alarmed cameras for the duration of the event.

The exclusive mode shall record only the active or alarmed cameras in multiplex sequence and disable standard recording of non-alarmed cameras for the duration of the event.

The DVR shall contain the following internal hard drive capacities:

The 6-channel 50/60 PPS DVR unit shall contain 80GB, 160GB or 320GB internal hard drives to record and store up to 1 week, 2 weeks, or 1 month (respectively) of digital recording.

This capability shall be based on the equivalent of 24-hour time-lapse mode, at 6 PPS and 18KB file size.

The DVR shall record to the internal hard drives on a "first in, first out" sequence.

The 9-channel and 16-channel 50/60 PPS DVR units shall contain 80GB, 160GB, 320GB or 600GB internal hard drives to record and store up to 1 week, 2 weeks, 1 month or 2 months (respectively) of digital recording.

This capability shall be based on the equivalent of 24-hour time-lapse mode, at 6 PPS and 18KB file size.

The DVR shall record to the internal hard drives on a "first in, first out" sequence.

The 6-channel, 9-channel and 16-channel 100/120 PPS DVR units shall contain 160GB, 320GB or 600GB internal hard drives to record and store up to 2 weeks, 1 month or 2 months (respectively) of digital recording.

This capability shall be based on the equivalent of 24-hour time-lapse mode, at 6 PPS and 18KB file size.

The DVR shall record to the internal hard drives on a "first in, first out" sequence.

The DVR shall provide a buffer where variable rate pre-alarm images shall be stored. The available buffer space shall be between 16 Kilobytes and 16384 Kilobytes.

The DVR shall provide an option to protect images or crucial incidents from being overwritten

The Protected Images option shall allow the start and end times of an event to be defined and protected against overwriting.

The Alarm Protection option shall protect panic alarms, global input alarms or both from being overwritten.

The Pre-alarm and Alarm Duration option shall allow the user to protect video before the alarm occurred and after the event has ended.

The DVR shall provide the option to identify a video expiry period this shall be defined as the maximum time the images shall remain on the hard drive.

The DVR shall support a schedule function, the DVR shall be user-programmable to automatically:

Select time of day for recording

Select cameras to be recorded

Switch alarms and activity detection on/off

Select interleaved or exclusively recorded alarm and activity events

Alter the record rate for standard and event recording

4. SERVER CAPABILITIES

The DVR shall provide a web interface to allow remote configuration of the system parameters.

The DVR shall maintain all saved user-defined programming in the event of power loss or power down.

The DVR shall provide the capability for the user to read the configuration menus and help pages in any of nineteen languages. Languages shall include English, French, German, Spanish, Italian, Chinese, Russian, Czech, Polish, Dutch, Hungarian, Portuguese, Turkish, Croatian, Danish, Finnish, Norwegian, Arabic and Swedish.

The DVR shall provide the option for multiple users to connect to the same Server in several different languages simultaneously.

The DVR shall support SMS text message functionality.

The DVR shall have the option to:

Send a message on:

Alarm, Camera failure, VMD activation and System Startup.

Ensure the text is transmitted in a format that can be understood (verbose message) by a cell (mobile) phone.

The DVR shall support the ability to configure Service Center details for text message services.

The DVR shall support pin number configuration for SIM security.

Convert the DVR to an SMS Server to centrally store SMS messages received from other NetVu connected DVRs.

The DVR shall provide the option to e-mail notification of an alarm, this alarm shall have the option to include a visual verification in the form of a still image.

The resolution of the image shall be configurable to accommodate low speed network links.

The DVR shall provide a Text-in-Images feature that enables text to be received through the RS232 COM ports, associated with a camera or cameras and recorded into the image header.

The DVR shall provide Remote Reporting capabilities.

The DVR shall transmit a message using TCP/IP to a central Alarm Monitoring Station.

The DVR shall provide support for a connection from the Alarm Monitoring Station to provide control of video, audio, telemetry and a list of recent alarm events.

The DVR shall support numerous tools to assist in system verification including:-

Video scope.

Relay Testing.

System variables.

The DVR shall support numerous log files.

The web interface of the DVR shall allow configuration and access to the logs for monitoring purposes.

The system logs shall include:

Connection log, Anonymous FTP, Security log, E-mail log, Sent message log, FTP Download log, Logfile (system log), Logfile backup, Tamper log.

5. CAMERAS

The DVR shall provide composite BNC inputs for up to 6, 9 or 16 colour or monochrome cameras.

The video inputs shall have 75 ohm impedance.

The DVR shall provide a loop through BNC connection for each camera input, with software-configured termination.

The DVR shall auto-detect connected cameras and begin recording automatically upon power-up.

The DVR shall feature time-base correction to eliminate the requirement for external camera synchronization.

The DVR shall provide a user-programmable camera title for each camera which will be optionally displayed on-screen, this shall be programmable via the OSD menus and the web interface.

The DVR shall provide a user-programmable, 12-character title for each camera.

The DVR shall provide the option to view all or selected cameras, without affecting camera recording – hidden cameras.

The DVR shall provide the capability to view all or selected hidden cameras via the network.

The DVR shall have software-controlled contrast adjustment for each camera.

The DVR shall have software-controlled colour adjustment for each camera.

The DVR shall include protocols for recommended Pan/Tilt/Zoom dome cameras.

The DVR shall provide on-screen indication on the main monitor if power or video capability is lost from any or all cameras.

The DVR shall have a global trigger light duty relay output (500mA at 48V max) for camera fail.

The DVR shall report camera failure or sync loss to a central station via TCP/IP alarm reporting, e-mail or SMS text messaging and create an entry in the event database.

6. REALTIME MONITOR VIEWING

The DVR shall provide full screen and full screen programmable sequencing of camera views for the main and spot monitors.

The DVR's main monitor shall provide the following, by model:

The 6-channel DVR's main monitor shall provide programmable multi-screen in live and playback mode for:

Picture-in-picture, Quad, 6 way

The 9-channel DVR's main monitor shall provide programmable multi-screen in live and playback mode for:

Picture-in-picture, Quad, 9 way

The 16-channel DVR's main monitor shall provide programmable multi-screen in live and playback mode for:

Picture-in-picture, Quad, 9 way, 8+2, 12+1, 16 way

The DVR's main monitor shall have x2 electronic zoom and freeze frame.

The DVR shall provide the option of using a composite video BNC connector or S-video 4-pin, mini DIN connector for the main monitor.

The DVR shall provide a composite video BNC connector for the spot monitor.

7. COMMUNICATIONS AND NETWORKING

The DVR shall have a standard 10/100Base-T Ethernet connection.

The DVR shall support remote network access to allow remote configuration or adjustment to settings via a Web browser.

The Ethernet connection on the DVR shall support a configuration option to force a 10Base-T configuration.

The Ethernet connection shall allow live and recorded viewing on a networked PC running Windows 2000 or WinXP using the included Dedicated Micro's NetVu ObserVer, or via web pages over a standard Internet browser. Supported Web browsers shall include:

Netscape Navigator 7.1.

Internet Explorer 6.0.

The DVR shall support the ability to allow a maximum bandwidth to be set for data transmitted across the network.

The DVR shall optionally interface with a Dynamic Host Configuration Protocol (DHCP) server allowing the user to:

Automatically assign an IP address.

Manually assign an IP address.

The DVR shall support usage of external Domain Name Server (DNS) functionality.

The DVR shall support connectivity via a supported modem using Point to Point Protocol (PPP).

Monitoring and control shall be achieved over Ethernet via the 10/100BaseT network port where supported protocols include IP, TCP, UDP, DHCP, FTP, TELNET, ICMP, HTTP and ARP.

The DVR shall support an on-board firewall for security.

The firewall shall provide support for

Preventing responses to ICMP traffic (PING)

Restricting access to authorized users based on:

Identifying authorised IP addresses.

Identifying port numbers for UDP traffic.

Identifying port numbers for TCP traffic.

The DVR shall support the option to enable a secondary web server port where default port settings are already in use on the network. The format shall be:

<http://<IP ADDRESS>:<PORT NUMBER>> (172.16.89.55:8899)

The DVR shall provide a Web Cam function allowing enabled cameras to transfer images via FTP to a web server for integration into a web site.

Each video input can be individually enabled for web cam operation.

The FTP upload shall be on a timed basis using a dwell time setting.

Transfer of images shall be sent as either a single FTP session or batch transfer.

Image resolution of the FTP image shall be configurable.

There shall be options for the Web Cam function to be disabled, permanently enabled or enabled for certain time periods.

The DVR shall have a Maximum Transmit Unit (MTU) option to control the size of the data packets transmitted across the network and Internet.

8. ALARMS

The DVR's alarm contacts shall have individually programmable polarity.

The DVR shall provide 18 hardware alarm input contacts, with the ability for up to 8 alarms to trigger one camera and/or one alarm to trigger multiple cameras.

The DVR shall support the option to include additional alarms to the system via up to 16 485-bus alarm modules.

Zone alarm inputs shall be user-definable for Boolean-style configuration where 'AND', 'OR' or 'NOT' options are available.

The DVR shall provide up to 999 seconds of tagged pre- and post alarm recording per event.

An internal pre-alarm buffer shall allow the pre-alarm to record above the standard record rate, or when the DVR is configured as an event recorder.

The DVR shall contain configuration parameters for the pre-alarm record rate, such that:

A camera can record at a slower PPS than the pre-alarm buffer record (e.g., Camera 1 records at 2 PPS; the pre-alarm buffer at 4 PPS).

On alarm, pre-alarmed images are downloaded from the pre-alarm buffer to the hard drive and co-located with the alarmed images.

The administrator shall be able to define the pre-alarm record rate and the number of pre-alarmed images.

The DVR shall provide the option to automatically send an e-mail on receipt of an alarm.

The DVR shall support the option to protect alarm images from being overwritten for a set time or indefinitely.

The DVR shall support an alarm database, which shall be configurable to allow the number of entries to be set.

The DVR shall have the capability to sequence alarms on the spot monitor

The DVR shall support an option for the main monitor display of the last camera to enter into alarm, or a sequence of cameras currently in alarm, or a multiway display of all cameras currently in alarm and return to pre-alarm display when all camera related alarms have been cleared.

The DVR shall provide the facility to trigger a telemetry preset on alarm. The DVR will support up to 8 presets on alarm per camera, with an option to support up to 32 additional presets on alarm zones that can be assigned to any cameras.

The DVR shall have the facility to activate a buzzer on alarm.

The DVR shall provide support for capturing a global/panic alarm input on an optional keyboard attached via 485-Bus as an alarm zone input with a default action to force all cameras into an alarm condition at the alarm record rate.

The DVR shall have the facility to trigger a light duty relay output (500mA at 48V max) on alarm.

9. TELEMETRY

The DVR shall support numerous third party protocols for the control of PTZ / Dome cameras and analogue matrices.

The third party protocols shall be for coaxial and serial devices.

Coaxial protocols shall include:

BBV, Dennard, Pelco.

Serial protocols shall include:

DM, BBV, Dennard, Ernitec, JVC, Kalatel, MarkMercer, Panasonic, Pelco, Philips, Samsung, Sensormatic, Ultrak, Vantage, VCL, AD-matrix, BBV-matrix and VCL-matrix

Control of these serial devices shall be available locally using an optional keyboard or across the network using an appropriate viewing application.

The DVR shall provide the ability to configure the PTZ / Dome camera menus using integrated commands.

10. AUDIO

The DVR shall support bi-directional audio.

The DVR shall support simultaneous audio recording and playback in real time.

Audio shall be controllable over the network using an appropriate viewing application to establish a bi-directional audio link.

The DVR shall support the option to configure the audio across the network as a UDP with bi-directional support.

The DVR shall support the monitoring of live and recorded audio via a UDP connection or via a TCP connection inline with the video being monitored.

11. VIDEO MOTION DETECTION

The DVR shall support the facility to enable video motion detection on any video input.

The DVR shall provide a 16 x 16 masking grid for basic activity detection on each camera view.

The DVR shall provide the option of five levels of motion sensitivity for activity detection on each camera view.

The DVR shall provide advanced video motion detection (VMD) across sixteen independent rectangular zones per camera.

The DVR shall provide an 80 x 64 grid resolution for defining the advanced VMD rectangular zones.

The DVR shall support a number of actions that can be automatically triggered on notification of Activity Detection or Advanced VMD;

- Create an entry in the DVR Database.

- Change record rate – standard and variable.

- Record a still image.

- Report to a central location.

- Create a zone input which can automatically trigger a number of alarm actions.

- Transmit an e-mail.**

- Protect VMD images.

- Archive event recordings automatically.

- Provide a virtual alarm input to alarm zones.

The DVR shall provide up to 999 seconds of tagged pre- and post activity recording per event.

The DVR shall provide the option to protect VMD images for a set or an indefinite time period.

The DVR shall provide a mechanism to verify the configuration of the VMD prior to completion of the installation; this shall be possible with a walk test facility.

The DVR shall have an option to activate a buzzer activated upon activity and advanced VMD.

The DVR shall have the facility for the global trigger of a light duty relay output (500mA at 48V max) for video motion detection.

12. VIDEO MOTION SEARCH FACILITY

The DVR shall have video motion search to allow recorded searches on the hard disks, based on movement in a particular area of the image.

The DVR shall provide a 16 x 16 masking grid for defining a video motion search.

The DVR shall provide a list of the activity events that occurred within a defined area.

The DVR shall provide the option of five levels of motion sensitivity for activity detection on each camera view and the same sensitivity will be used for video motion search.

13. SEARCH AND PLAYBACK

The DVR shall offer VCR-style keys for:

- One button touch playback

- Fast forward (and frame advance), fast rewind (and frame rewind) and pause keys.

- Event log, including event log filter with quadrant preview facility, can be programmed by event type, time and date and/or camera number.

 - Event type options include:

 - External alarms.

 - Activity detection.

 - System events.

- Activity list of a defined area or object, including a preview screen.

- GOTO time and date.

- Playback in multiscreen, quad, picture in picture and full screen.

- Copying recordings to an archive list for downloading to the internal DVD writer or FTP server.

14. ARCHIVING

The DVR shall provide a mechanism to archive selected video images, alarm and VMD tagged video partitions.

The DVR shall provide both an internal DVD writer and an Ethernet network connection to allow recorded images to be archived.

- The internal DVD writer shall allow images stored within the archive list to be written to CD-R or DVD-R media.

 - The DVR shall continue to record to internal hard drives while archiving.

 - The DVR shall generate an optional MD5 digital watermark of images archived to the CD or to the FTP server.

 - The NetVu ObserVer software shall be automatically saved along with the archived images on the CD / DVD to allow images to be replayed from any PC running Windows 2000 or Windows XP.

The archive process shall be initiated by the following events:

- On connection to a network (FTP) or connection to blank media (DVD)
- At a scheduled time each day
- At regular polled intervals
- When sufficient events are queued to fill blank media (DVD)
- When manually initiated through the user interface.

The DVR shall provide an option to clear protection from images when download is complete to allow disk reuse.

The DVR shall provide drivers for recommended external SCSI devices for extending hard drive capacity.

The DVR shall automatically detect recommended SCSI devices on power-up.

15. REMOTE ALARM MONITORING

The DVR shall support user notification upon alarm over Wireless Ethernet, ISDN and PSTN to remote PC-based central stations. The information sent to the Alarm Receiving Centre shall include:

- IP address.
- Name.
- Primary Camera associated with the alarm.
- Alarm Zone/VMD zone that was triggered.

The DVR shall provide the following selectable actions when an alarm zone has been triggered:

- Create a database entry.
- Change the standard record rate.
- Change the variable record rate.
- Send an email.
- Connect to a central station via Ethernet, PSTN or ISDN.
- Record a still image to the internal HDD.
- Protect the image in the disk.
- Auto archive alarms over the network.
- Switch the mode of operation.

The DVR shall provide the Operator with status via the main monitor of the following system events on a camera by camera basis:

- Video Motion Detection, Camera fail, Alarm input.

The DVR shall create an entry within the on-board database of general system events including system restart.

16. E-MAIL NOTIFICATION ON ALARM

The DVR shall support automatic e-mail upon alarm.

The DVR shall be capable of notification of the following events on a camera by camera basis:

- Alarm
- Activity
- Camera fail

The DVR shall also be capable of notification in the event of a system restart.

The DVR shall supply the following information in each e-mail sent:

- Machine Site ID
- Primary camera number
- Alarm zone description
- Optional JPEG picture of primary camera image on first alarm

17. REALTIME WEBPAGE VIEWING

The DVR web interface shall support an option for displaying images in web pages using a Java or Active X plugin.

The DVR's web browser shall provide multi-screen options in live mode for:

- Full display, Quad display, 9 way display, 16 way display.

The DVR web browser shall have the option to take control of any video input that has been enabled for telemetry control including:

- Pan and Tilt control.
- Zoom, Focus and Iris control.
- Auxiliary control (wash, wipe, lights).
- Autopan.
- Patrol mode initiation.
- Send to preset.
- Access to the telemetry menus.

Menu access and configuration shall be achieved via the Telemetry Setup page.

The DVR shall offer the facility to select any enabled camera inputs for display in live mode.

The resolution of the displayed video shall be controllable for:

- High resolution video, Medium resolution video, Low resolution video.

The web browser shall give the option to playback recorded video by selecting a time and date or selecting a recorded file from the event list.

The DVR shall offer the facility to select any of the camera inputs to display the record image associated with that input.

The resolution of the playback video shall be controllable for:

High resolution video, Medium resolution video.

A filter option shall be available for the list of recorded files, the options shall be:

VMD, Alarm, System reset.

There shall be VCR type control with frame advance, frame rewind, fast forward, rewind, play and pause.

A speed control option shall be provided for video playback.

The DVR's web browser shall provide a number of demo pages where video can be selected and viewed via:

DuoView™.

Multisite.

Camera Map.

The DVR shall provide a DuoView™ web page for simultaneous viewing and comparison of live and replay footage from the same Server.

The screen display options shall be available in:

Full display, Quad display, 9-way display, 16-way display.

Search for recorded files shall be based on time and date.

There shall be VCR type control with frame advance, frame rewind, fast forward, rewind, play and pause.

A speed control option shall be provided for video playback.

The DVR shall support a Multi-site web page where images from two Servers can be displayed simultaneously.

The screen display options shall be available as:

Full display, Quad display, 9-way display, 16-way display.

The video displayed shall be able to support either:

Live images from both Servers.

Replay images from both Servers.

Live from one Server and replay from one Server.

There shall be VCR type control with frame advance, frame rewind, fast forward, rewind, play and pause.

There shall be speed control option for the playback of the video.

Search for recorded files shall be on time and date.

The DVR shall provide a Camera Map screen allowing images to be selected and viewed in live mode.

The Camera Map screen shall have the option to select corresponding video inputs from camera icons located on a map.

The cameras icons shall show the location and direction of the camera.

18. DAYLIGHT SAVINGS TIME

The DVR shall provide a default clock setting to automatically self-adjust for daylight savings time.

The DVR shall support the function to momentarily synchronise the time and date with the PC being used for configuration.

19. COLOR RESOLUTION

The DVR shall have a colour resolution sampling rate of 13.5 MHz to CCIR 601.

The DVR shall have the following number of pixels:

Live images at 720h x 448v (NTSC) or 720h x 512 (PAL)

Multiplexed/recorded images at 720h x 224v (NTSC) or 720h x 256v (PAL)

The colour resolution shall have 16.8 million colours with 256 levels of grey, and eight-bit luma.

20. DATA

The DVR shall have 2x 9 Way D-type connects for RS232 serial communication.

Configuration options available shall include;

Debug, General purpose, Text in image, PPP and RS232 telemetry.

The DVR shall have 2x 9 Way D-type connects for RS232/RS422/RS485 serial communication.

Configuration options available shall include;

Debug, General purpose, Text in image, RS232/485 telemetry.

The DVR shall support termination dip switches to ensure correct transmission of RS485 data.

The DVR shall have 2x 485-bus MMJ connectors for 485-bus peripheral device connections.

The DVR shall have a SCSI-2 narrow, 50-pin, high-density connector.

The DVR shall have a 1x Ethernet RJ-45, 10/100Base-T connection.

The DVR shall support one audio in and one audio out RCA (phono) sockets for bi-directional audio

21. TEMPERATURE RANGE

The DVR shall be operational in temperatures ranging from 41 – 113 degrees Fahrenheit (5-45°C).

22. RELATIVE HUMIDITY

The DVR shall be operational in a relative humidity range of 10 – 85 percent, non-condensing.

23. PHYSICAL PROPERTIES

DIMENSIONS

The DVR shall measure 3 1/2 inches (H) x 17 5/16 inches (W) x 17 1/2 inches (D), or 89mm (H) x 440mm (W) x 445mm (D).

WEIGHT

The DVR unit and power supply unit shall weigh a combined 25.1 pounds (11.4Kg).

POWER

The DVR shall support an 180W internal power supply

The DVR shall support an input voltage of 100 – 240 V AC 50/60Hz

24. ACCESSORIES

An infrared remote control unit shall be provided for system operation with the ability to:

Change cameras and camera views

Playback images from the hard disk

Search using the GOTO function and review the event log.

The DVR shall be supplied with 485-bus cable to provide connectivity to any additional DM alarm or relay modules.

A standard Ethernet cable shall be supplied to simplify the installation process.

A set of rack mounting accessories shall be supplied with the DVR Server to allow mounting of the unit in a suitable rack unit.

Glossary

IP	Internet Protocol
TCP	Transmission Control Protocol
UDP	User Defined Protocol
DHCP	Dynamic Host Control Protocol
FTP	File Transfer Protocol
TELNET	Terminal Emulation over a Network
ICMP	Internet Control Message Protocol
HTTP	HyperText Transfer Protocol
ARP	Address Resolution Protocol