

**D**EDICATED MICROS

DIGITAL  
**sprite**<sub>2</sub> Networking Guide





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## Network Configuration of the Digital Sprite 2

This manual covers the advanced configuration of the Digital Sprite 2 via the on-board web pages plus the OSD menus that cover network functionality.

To assist you with the configuration of the Digital Sprite 2, this section is constructed in a tutorial manner and will make use of typical scenarios describing how to ..... allocate an IP address, set up VMD, etc. Select the sections that are relevant to the functionality required for your application and follow the step by step instructions. In some of the sections the web interface and the OSD menus will be displayed, these are the more advanced network settings where configuration via the web pages is more appropriate.

As with the Installation of the unit this section will be divided into:

Simple Configuration – required to get the unit up and running

Advanced Configuration – project specific requirements



**Note:** It is presumed that the main configuration steps detailed in the Digital Sprite 2 Setup Guide have been followed and therefore the cameras inputs have been enabled and the standard record rate has been set, although these features are also detailed within this section.

### Web Page Icons

Each of the Digital Sprite 2 configuration web pages has the following buttons:



**Reset to Defaults** – this will return the associated page to factory defaults.



**Display Help** – this will display the Help pages for the associated configuration page. This is a good starting point if you are having problems or do not understand the configuration parameters.



**Save Settings** – this will save a changes that has been made to the configuration page - remember to save the changes selecting a new page before saving the changes will result in all changes will be lost!



**Reset** – this will be displayed on the configuration pages for functionality that requires the unit to be reset to initiate the function, always save the settings before resetting the unit.

For each How to.... section the Tab name and Function name will be shown allowing you to easily locate the correct configuration page.

# Accessing the Configuration Web Pages

The configuration of the Digital Sprite 2 is achieved via on the on-board web pages, to access these:



**Note:** It is assumed that the Digital Sprite 2 has been configured with an IP address via the serial port or the OSD menus and has been connected to an Ethernet network.

1. Launch Internet Explorer (or Netscape Navigator).



2. Type the **IP address** of the Digital Sprite 2 into the address bar.
3. You will be presented with the Main Menu page.
4. Select Configuration Options, you will be prompted for a username and password, if these have not been previously changed in the .ini file the default settings are **dm** and **web** respectively.



**Note:** The user name and password are case sensitive; it is recommended that you change the default username and password. Please keep this information as mislaid usernames and passwords could result in the unit being returned to Dedicated Micros.

## Main Menu

The Digital Sprite 2 Main Menu allows the Operator access to:

Live viewing of any of the connected cameras.

Configuration web pages for the unit.

Downloads which include the software applications and the product documentation.

Demo pages that demonstrate how viewing applications can be designed for varying system requirements.



## Simple Configuration

### How to Configure Global Parameters



There are some parameters that can be set that will affect the overall system; video standard for the video inputs, browser format for the web interface, language that the menus will be displayed in and the DST (daylight saving time) settings.

To configure these parameters:

1. Select **Home -> Main Set-up**.

2. Select the **video standard** from the drop down list; this will be the standard for all the video inputs on the Digital Sprite 2.



**Note:** If the video format is changed it is necessary to carry out a system reset before saving the settings. This allows the unit to activate the change.

3. Select the **date format** from the drop down list.

4. The Digital Sprite 2 web pages can be viewed in two formats; **Active X** (default) or **Java**, select the relevant option from the drop down list.

5. The web configuration pages for the Digital Sprite 2 can be displayed in a selection of languages, **select the language** which is most appropriate to your installation from the drop down list.



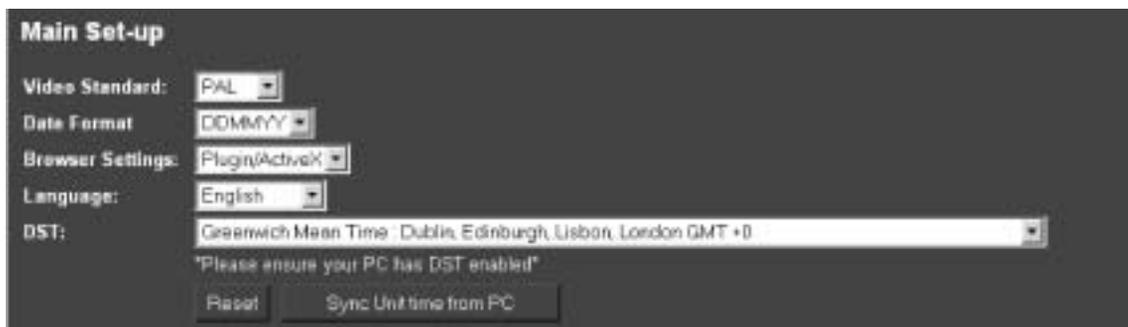
**Note:** Ensure the PC being used for the configuration is set to the correct time zone and that DST is enabled before continuing.

6. Select the **DST** for region where the unit is installed from the drop down list.

7. If the settings are incorrect reset the Digital sprite 2 by selecting the **reset** button.

8. If the Digital Sprite 2 time is to be synchronised to the PC that is being used to configure the system then select **sync unit time from PC**. Note this only synchronises the time when the button is selected this will not maintain synchronisation permanently.

9. Remember to save the configuration by selecting **Save Settings!**



Function	Description
Video Standard	<p>This is a global setting for all the video inputs on the Digital Sprite 2. The video format can be configured as PAL or NTSC.</p> <p>When the video standard is changed the Digital Sprite 2 <b>must</b> be reset. Click on the Reset button.</p>
Date Format	<p>It is possible to identify the format in which the date will be displayed; the default setting is Day Day, Month Month, Year Year.</p>
Browser Settings	<p>The browser interface on the Digital Sprite 2 supports Active X or Java, the most appropriate for your application can be selected from a drop down list. Again this is a global settings and therefore any user connecting to the system will be presented with the same interface.</p>
Language	<p>The Digital Sprite 2 web configuration pages can be displayed in the language that is most suitable to the country of installation.</p> <p>The currently languages supported are; English, Spanish, French, Czech, Italian, Russian, Dutch, Portuguese, German, Turkish, Croatian, Danish, Finnish, Norwegian, Hungarian, Swedish, Polish, Arabic, Chinese</p>
DST (Daylight Saving Time)	<p>This reflects the local time zone for the area where the Digital Sprite 2 is installed.</p>
Reset	<p>This will reset the Digital Sprite 2.</p>
Sync Unit time from PC	<p>The Digital Sprite 2 can be synchronised with the PC that is being used to configure the unit. If the PC is synchronised with the network clock then this time will be reflected in the Digital Sprite 2.</p> <p>The synchronisation is not persistent and will only synchronise the Digital Sprite 2 and the PC at the time the button is pressed.</p>

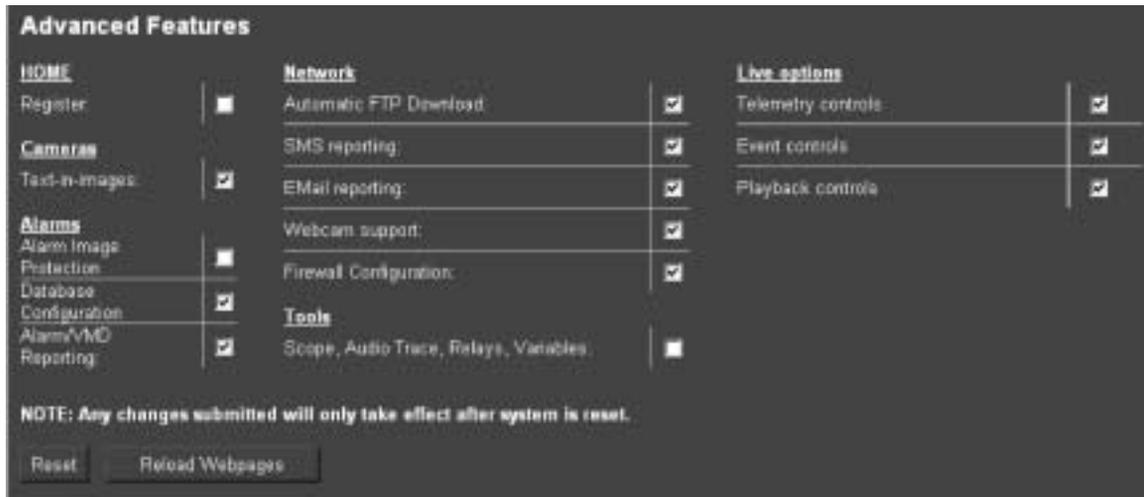
# How to Enable System Features



There are a number of features supported on the Digital Sprite 2 that can be enabled or disabled depending on your system requirements.

When these features are enabled, the relevant configuration web pages will be displayed; if these are disabled then these pages will be omitted.

1. To enable the features select the **System -> Advanced Features**.
2. By default the **Live options** are enabled, to enable the other features **tick** the box next to the feature.
3. Remember to select **Save Settings!**
4. You will now need to select **Reload Webpages** for the relevant configuration pages for the enabled features to be displayed.
5. Some of the features require a system reset select the **Reset** button to reset the unit and reload the web pages.

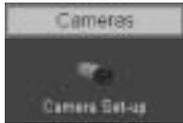


Section	Feature	Description
Home	Register	<b>Note:</b> Configuration and registration of the Digital Sprite 2 is carried out at the factory, therefore this screen is for fault diagnostics only and it is recommended that the page is not enabled unless advised by Dedicated Micros Technical Support.

Section	Feature	Description
Cameras	Text in image	It is possible to integrate the Digital Sprite 2 into an application where receipt of specific text can be used to trigger an alarm. This will enable the configuration page to be included in the <b>Cameras</b> tab.
Alarms	Alarm image protection	It is possible to configure the Digital Sprite 2 to protect images within parameters set by the operator (time and date, etc). This will enable the configuration page to be included in the <b>Alarms/VMD</b> tab.
Alarms	Database configuration	The database can be set to have a maximum number of entries to ensure efficient management of the information. This will enable the configuration page to be included in the <b>Alarms/VMD</b> tab.
Alarms	Alarm/VMD reporting	It is possible for the Digital Sprite 2 to send information to a remote monitoring station under certain conditions (camera fail, alarm, etc). This will enable the configuration page to be included in the <b>Alarms/VMD</b> tab.
Network	Automatic FTP download	The Digital Sprite 2 can be configured to automatically download information using FTP, This will enable the configuration page to be included in the <b>Network</b> tab.
Network	SMS reporting	The Digital Sprite 2 can be configured to send data to an SMS server This will enable the configuration page to be included in the <b>Network</b> tab.
Network	E-mail reporting	The Digital Sprite 2 supports e-mail of data under certain conditions (alarm, start up, etc). This will enable the configuration page to be included in the <b>Network</b> tab.
Network	Webcam support	The Digital Sprite 2 can make any of the video inputs available to a web server for use within a web page. This function uses FTP to upload the images to the web server. This will enable the configuration page to be included in the <b>Network</b> tab.
Network	Firewall configuration	The Digital Sprite 2 supports an on board firewall to ensure no unauthorised users can access the unit. This will enable the configuration page to be included in the <b>Network</b> tab.

Section	Feature	Description
Tools	Scope, Audio Trace, Relays, Variables	There are a number of tools that can be used to obtain information on the system performance, enabling this options will display the relevant pages in the <b>Tools</b> tab.
Live options	Telemetry controls	This option allows the live pages to be tailored to the Operators requirements, disabling the option will remove all telemetry controls from the Live viewing pages.
Live options	Event controls	The Digital Sprite 2 supports an event database which can be accessed from the Live page, disabling this option will remove all event controls and will not allow the Operator to analyse the event database.
Live options	Playback controls	It is possible from the Live page to review any recorded images stored on the Digital Sprite, disabling this option will remove all playback controls from the Live viewing page.

# How to Configure Video Inputs and Standard Record Settings



Each video input can be individually configured. How to enable each input and set the standard record settings has been briefly described in the Quick Start Guide, this section will detail the full configuration process; camera resolution and file size, camera titles, termination, video colour and camera fail notification, standard recording settings.

This section is divided into:

- Enabling and configure the camera inputs settings
- Configuring the standard record settings

To enable/configure camera input settings:

1. Select **Cameras -> Camera Set-up**
2. It is possible to identify the global **camera resolution** (common to all video input) the current option sets the resolution to 720 x 256.
3. Within the viewing applications it is possible to select High, Medium or Low resolution images, enter the **maximum file size** for the High, Medium and Low options.



**Note:** It is possible to select the viewing resolution of the images from the Digital Sprite, however the unit always records at the high resolution settings for optimum quality on recorded images.

4. All **connected** cameras will be automatically enabled, use this screen to check the enabled inputs are correct.
5. In the corresponding title box enter the **camera name** for the video source connected to that input.
6. Enable the cameras that are to be available for recording in **Day, Night and Weekend** operation mode.



**Note:** The Day, Night and Weekend mode are displayed when the Schedule Record Rate is enabled in the Schedule menu (this is enabled by default).

7. **Disable** any camera that is not to be available for **viewing**, e.g. covert cameras.
8. If the final destination that the video source is to be connected is the Digital Sprite 2 then this input must be **terminated**, however if the **loop through** connections on the unit are to be used then the corresponding input must be un-terminated. To select termination place a tick in the box adjacent to the video input. To un-terminate remove the tick from the box.
9. By default the Digital Sprite 2 presumes all enabled inputs are **colour video sources**. If you are connecting a **monochrome** signal to the unit, it is recommended that the input be set for **mono**. Place a tick in the corresponding video input.

10. If the video input is connected to a matrix, PTZ or dome camera select the required **protocol** from the **drop down list** for the corresponding camera input.
11. To enable the Digital sprite 2 to send notification that the video input does not detect a 1V peak to peak signal place a tick in the box adjacent to the video input. This will give a **camera fail** alarm.
12. Save the configuration by select **Save Settings!**

To configure the standard record settings:

13. The **record duration** and **standard record rate** are inter-connected; changing one of these settings will automatically update the other.



**Note:** The **alarm record rate** is **not** taken into account.

14. Enter the required **settings** in either the **record duration** or **standard record rate**, these are global settings.
15. Enter the **alarm record rate** for when the Digital Sprite 2 is in an alarm situation, this is a global setting.
16. Select the **alarm recording mode** to reflect the recording requirements on receipt of an alarm
17. Enter the **video expiry period** in days.

The Digital Sprite 2 supports day, night and weekend operation, if this has been enabled within the **Cameras>Schedule** function then it is possible to identify the alarm record rate for all operation modes.

An example of dual mode operation is; a system can be in a 'set' or 'unset' mode or in an 'Night' or 'Day' mode. Cameras are individually selected in either or both modes to be available for alarm recording.

The Night mode could be identified as out of hours and Day would be the time during normal working hours. This will ensure cameras (such as internal cameras) can be disabled when necessary so false triggers do not occur. Then these cameras would be re-enabled during non-working hours so the whole site is fully monitored.

18. Enter the **record rate** for the Day, Night and Weekend modes, these settings will be applied to all cameras enabled within these modes.
19. Save the configuration by select **Save Settings!**



Function	Description
Pictures Per Second (pps) / milliseconds (ms)	This allows the record settings to be configured as either Pictures Per Second or Milliseconds.
Live/Record Resolution	This is the resolution of the live and recorded images that will be transmitted from the Digital Sprite 2 and recorded to hard disk, the current setting is 720 x 256.
High KB Image Size	This is the maximum file size for the images when high quality video has been selected to be recorded or viewed. The Digital Sprite 2 records the images at the High image size settings only.
Medium KB Image Size	This is the maximum file size for the images when medium quality video has been selected to be viewed.
Low KB Image Size	This is the maximum file size for the images when low quality video has been selected to be viewed.
 <b>Note:</b> Reducing the file size will allow more data to be transmitted across the network, it is important to remember reducing the file size will require the compression applied to be increased and this will affect the quality of the image.	
Advanced Setup	This option gives access to the configuration page to allow alias configuration for the MPEG4 option, refer to the Advanced Setup section below.
Video Expiry Period	This indicates the maximum time any images can be stored on the hard disk, if the record duration is less than the video expiry period the images will automatically be overwritten.
Telemetry Setup	This will only be active when one of the video inputs on the Digital Sprite 2 has been configured for telemetry and allows access to the telemetry setup page where camera specific functions can be configured

Function	Description
Connected	The Digital Sprite 2 can automatically detect if a camera source is present, the corresponding input will be enabled in this menu for connected cameras.
Camera Title	It is possible to allocate an ASCII camera title to each of the enabled inputs, this along with the camera number will be displayed on the screen to identify the camera selected.
Recording Day / Night / Weekend	Each camera can be individually enabled to be available for recording when the unit is in the Day, night or weekend operation mode.
Viewable	Cameras can be selected or deselected from being available to be viewed, e.g. covert cameras. This setting does not affect the recorded video it is for viewing only.
Terminated	As the Digital Sprite 2 supports loop through it is necessary to remove the termination of any inputs that are 'looped', by default all inputs are terminated at 75 ohms.
Mono	If the video input on the Digital Sprite 2 has a black and white (monochrome) source connected then enable the corresponding camera. The Digital Sprite 2 will try and compress the colour contents of the image if this box is not enabled, ticking this box will remove unnecessary overhead on the compression process.
Telemetry	The Digital Sprite 2 supports a number of coaxial and serial protocols, this option allows one of these to be selected from the list and allocated to the corresponding camera input. The coaxial telemetry protocols are Dennard, Pelco and BBV. <i>Refer to How to Enable Serial Telemetry for RS232/RS422/RS485 telemetry.</i>
Camera Fail Reporting	If the video input on the Digital Sprite 2 does not identify a 1V peak-to-peak signal then the unit can transmit an alarm notification for camera failure on the corresponding video input.
Record Duration	The total record time available in (DD) Days and (HH) Hours. This indicates the storage capacity of the system without any alarm recording. It is estimated from size of video storage, the standard record rate and the requested target size of the recorded images. <b>Note:</b> Changing the Record Duration will automatically update the Standard Record Rate. Changing the Standard Record Rate will likewise update the Record Rate. This should be configured for day, night and weekend operation modes.

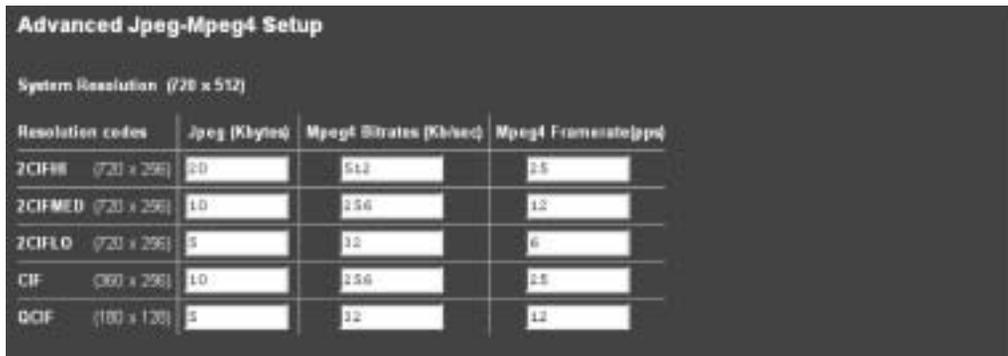
Function	Description
Standard Record Rate	<p>This is global setting and identifies the 'common pictures per second' for all enabled video inputs on the unit in the mode of operation that is being configured. This will remain unless otherwise actioned (Alarm or Variable Record Rate).</p> <p>This can be set in milliseconds or the number of pictures per second. The delay between consecutive images from any one camera is the Standard Record Rate multiplied by the number of cameras being recorded. Changing the Standard Record Rate will automatically update the Record Duration. Changing the Record Duration will likewise change the Standard Record Rate.</p> <p>Example Record Rates</p> <p>20ms = 50/60 pictures per second  33ms = 30PPS  40ms = 25pps  50ms = 20pps  100ms = 10 pps  125ms = 8pps  200ms = 5 pps  500ms = 2pps  1000ms = 1pps</p> <p><b>WARNING:</b> When running the unit at maximum Record Rate (50pps or 20ms in Standard Record Settings), this will affect viewing and network transmission, as the video codecs will be running close to capacity - the unit's priority is to record the footage to the internal HDD, so transmission performance will be reduced. This is exhibited by slow connection to the html pages and reduced viewing frame rates. Multi-user viewing will also be affected. It is not recommended to set the Standard Record rate to 20ms for everyday usage, but rather only for specific situations where this rate is necessary.</p>
Alarm Record Rate	<p>This identifies the global alarm recording rate, for the mode of operation being configured (i.e. Day, Night and Weekend mode), which will be activated if an alarm is triggered on the unit. For example, the unit may be configured to increase the recording rate when a door contact is triggered.</p>
Alarm Record Mode	<p>This option allows exclusive or interleave recording to be selected within any of the operating modes (Day, Night, Weekend) to adjust the record sequence when an alarm is received. The options for event recording are:</p> <p><b>Unchanged</b> – This sets the record sequence to remain the same whether an alarm is present or not.</p> <p><b>Exclusive</b> – The unit will only record the alarm cameras.</p> <p><b>Interleaved</b> – This will set the unit to record the alarm cameras more frequently than non-alarm cameras, by interleaving the two i.e. if camera 1 is in alarm the interleave recording would be 1213141516...</p>
Click here to see thumbnail images	<p>This will display a thumbnail view of video connected to the unit. Place the cursor in the camera title box to view the corresponding video input.</p>

## Advanced Setup

The Digital Sprite 2 supports MJPEG and MPEG4 compression. the Advanced Setup option allows the JPEG settings to be aliased for MPEG4 mode so that the User Interface allows dynamic switching between viewing MJPEG or MPEG4 images.

To configure the Advanced Setup:

1. Select **Cameras -> Camera Setup -> Advanced Setup**.
2. **Enter** the **JPEG** file sizes in Kbytes for the various image resolutions; 2CIFHI, 2CIFMED, 2CIFLO, CIF, QCIF.
3. **Enter** the **bit rate** for the equivalent **MPEG4** images for the same image resolution.
4. **Enter** the number of **pictures per second** required for **MPEG4** compression.
5. Remember to save the configuration, select **Save Settings!**



Function	Description
System Resolution	This is a read only section and identifies the resolution as configured in the Camera Setup page.
Resolution Codes	There are a number of resolution codes that identify the size of the image that will be transmitted when the corresponding resolution button is selected in the User Interface. <b>Note:</b> These figures are automatically calculated by the unit and are dependent on the Resolution setting selected in the Camera Setup
JPEG (Kbytes)	This is the maximum JPEG file size for each of the resolution options, enter the values in Kbytes.
MPEG4 Bitrates and Frame rates	This is the maximum bit rate and required framerate when the unit is in MPEG4 mode for each of the resolution options, enter the value in kbits/second and pictures per second (respectively).



**Note:** The Digital Sprite 2 records MJPEG images while simultaneously supporting the option to transmit MJPEG and MPEG4 images for viewing.

6. As the **Record** and **High resolution** are interconnected, select the High resolution option from the **drop down list**, this option will then be automatically reflected in the Record resolution when the save settings button is pressed.



**Note:** Trying to change the Record resolution to be different than the high resolution is not possible, the unit will automatically default the Record resolution when the save settings button is pressed

7. Select the **resolution** of the images that will be transmitted when the **Medium resolution** option is selected in the viewing application.

8. Select the **resolution** of the images that will be transmitted when the **Low resolution** option is selected in the viewing application.

9. Remember to save the configuration, select **Save Settings!**

Resolution alias	Resolution code
Rec	2CIFHI
High	2CIFHI
Medium	2CIFMED
Low	2CIFLO

Function	Description
Resolution alias	This identifies the functions that are supported on the Digital Sprite 2 that can be selected within a viewing application as well as the record resolution of the MJPEG images.
Resolution codes	This drop down list displays all the previously configured resolutions and allows any of these to be selected for the associated function. The illustration shows that the record resolution and the resolution when the High option is selected in the viewing application has been set to 2CIFHI, while the MEDium resolution is set for 2CIFMED and LOW is set for 2CIFLO.

## Configuring the Network Settings of the Digital Sprite 2



The Digital Sprite 2 can be allocated an IP address and associated settings via the serial port or OSD menus, this web page allows these settings to be checked and changed if required.

To check / configure the network information:

1. Select **Network -> Network Settings**.
2. If the **IP address**, **subnet mask** and **default gateway** that has already been configured via the serial port or OSD menus these will be displayed on this page, these can be changed by entering the new information in the relevant areas.
3. The Digital Sprite 2 supports **Domain Name Server** allowing the Digital Sprite 2 to reference other hosts by their name rather than their IP address, enter the **IP address** of the **primary DNS** and **secondary DNS** server.
4. The default **system name** for the Digital Sprite 2 is DS2, this can be changed to a more appropriate name by entering the information in this section.
5. As the Digital Sprite 2 can be connected to a LAN or WAN network it is possible to identify the **maximum bit rate** for the network connection. There are **default settings** for **LAN**, **WAN** and **ISDN** if these defaults are accept select the corresponding button for your network link, the Max trans rate, transmit image buffers and Ethernet MTU values will be automatically configured, if these default settings are not as require enter the new information in the sections.
6. Enter the **TCP Re-transmit Time** in milliseconds, this settings should be discussed with the Network Manager.
6. The **secondary webserver port** is system specific and allows a port to be allocated for webservering if the network is already utilising the default port.
8. Remember to save the configuration by selecting **Save Settings!**

### Network Settings

IP Address: 0 0 0 0

Subnet Mask: 0 0 0 0

Default Gateway: 0 0 0 0

Primary DNS: 0 0 0 0

Secondary DNS: 0 0 0 0

System Name: OSD

PPP IP: 10 0 0 1

DHCP IP: 172.16.100.10

DHCP Subnet: 255.255.0.0

DHCP Gateway: 172.16.50.60

DHCP Name:

Serial Number: A1X062960008

Please choose one of the pre-set buttons for your Ethernet bandwidth settings, or manually enter your preferred settings:

LAN WAN ISDN

Force 10BaseT operation:

Maximum Trans Rate: 100000 Kbits/second (100KBytes)

Transmit Image Buffers: 3 (1 to 3 buffers)

Ethernet MTU: 1500 Bytes

TCP Re-Transmit Timeout: 250 Milliseconds

PPP Idle Line Timeout: 180 Seconds

PPP Link Down Timer: 2 Minutes

Packet Size: 0 Bytes

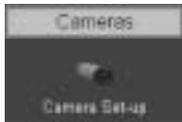
Secondary Web Server Port: 0

Function	Description
IP Address, Subnet Mask, Default Gateway	These are the settings that have already been configured via the Serial port or OSD menus. This is the static IP address and subnet mask, and if applicable default gateway.
Primary DNS	This is the primary DNS server IP address for applications that are utilising domain names.
Secondary DNS	This is the IP address of the secondary DNS server in case of failure of the primary server.
Unit Name	This is the name that is allocated to the Digital Sprite 2, this will be used when transmitting alarm information to a Remote Monitoring Station.
PPP IP	This is the IP address that will be allocated if the unit is to dial (in and out) on alarm using PPP. This is independent to the units IP address.
DHCP IP	If the Digital Sprite is to be installed in a DHCP network, this option would display the IP address that was automatically allocated to the unit from the DHCP Server.
DHCP Subnet	If the Digital Sprite is to be installed in a DHCP network, this option would display the subnet that was automatically allocated to the unit from the DHCP Server.

Function	Description
DHCP Gateway	If the Digital Sprite is to be installed in a DHCP network, this option would display the gateway that was automatically allocated to the unit from the DHCP Server.
DHCP Name	This would be the name of the Digital Sprite 2 that is automatically allocated by the DHCP server.
Serial Number	This a read only section and is generated by the unit hardware identifying the serial number of the Digital Sprite 2.
LAN, WAN, ISDN	This option ensures the speed of the data from the Digital Sprite 2 matches the speed of the network the data is being transmitted across. These are default settings and are configured as: LAN – 10000 Kilobits/second WAN – 256 Kilobits/second ISDN – 64 Kilobits/second
Force 10BaseT operation	The Digital Sprite 2 supports 10 or 100BaseT half duplex transmission, this will force the unit to operate at a 10BaseT connection.
Transmit Image Buffers	This is used in order to improve the picture delivery over Ethernet when using a slow connection, i.e. 256Kbps. Options available are 1, 2 or 3 buffers.
Ethernet MTU	This is the maximum transmit unit for the Ethernet packet. The MTU is the largest physical packet size measured in bytes, that the network can transmit. By default this figure is set to 1500bytes.
TCP Re-Transmit Timeout	This is the time the Digital Sprite 2 will wait to re-send a packet if an acknowledgement is not received. When making a connection across a WAN link this figure should be increased and should match the timeout figure for the router.
PPP Idle Line Timeout	This is the time the Digital Sprite 2 will wait before dropping the PPP link if data has not been transmitted or received.
PPP Link Down Timer	If for any reason the PPP connection is lost then this is the time period before the Digital Sprite 2 will be forced to drop the PPP connection.
Packet Size	This is the maximum packet size that will be transmitted from the Digital Sprite 2. This figure is identified in Bytes.

Function	Description
Secondary Web Server Port	If the default port setting for web serving has already been allocated it is possible to configure a second port number. Eg. If the secondary web port is set for 8000 because the default (80) web port is blocked by the network or firewall. To obtain images from the Digital Sprite 2 enter the IP address plus the secondary web port in the address section of Internet Explorer or in the Viewer; <a href="http://172.16.1.2:8000">http://172.16.1.2:8000</a> (<IP address><:><secondary port number.>

## How to Select and Enable Coaxial Telemetry



The Digital Sprite 2 supports numerous coaxial telemetry protocols allowing these cameras to be connected directly to the unit and controlled using their native control protocol.

Simple selection of manufacturer/model within the configuration pages and these cameras can be controlled. Common telemetry operations such as pan, tilt, zoom, presets can be controlled via the Live page of the web interface or via the Viewer software.



**Note:** Priorities are not allocated to the PTZ control; this works on the initial connection and request having the control. Any subsequent connections will allow viewing but no control until the initial connection is relinquished or after a set period (5 seconds) where control commands have not been issued to the PTZ/dome camera.

Any of the video inputs on the Digital sprite 2 can be configured for coaxial telemetry; this is achieved in the Camera Set-up page.

1. Select **Cameras -> Camera Set-up** to configure the individual cameras.
2. The coaxial protocols currently supported on the Digital Sprite 2 are:  
BBV (BBV-C)  
Pelco (Pelco-C)  
Dennard (Dennard-C)
3. Select **Cameras -> Camera Inputs** and select the telemetry protocol from the telemetry list for the corresponding camera.
4. Remember to save the changes you have made by selecting **Save Settings!**

Once you have selected the telemetry protocol it is possible to; review the image from the video input, test the control, configure the features of the camera that are required for you application (such as presets), and access the dome/PTZ camera menus to configure the more enhanced features supported on the dome, refer to the manufactures manual for the camera for these features.

Function	Description
Telemetry Setup	If any of the inputs have been set coaxial telemetry this option will be active and will allow the telemetry functions to be configured (see below for more detailed information).
Connected	If the camera input has a video source connected then the input must be enabled.
Camera Title	It is possible to allocate a camera title to each of the enabled inputs, this along with the camera number will be displayed on the screen to identify the camera selected.
Recording Day / Night / Weekend	Each camera can be individually enabled to be available for recording when the unit is in the Day, night or weekend operation mode.
Viewable	Cameras can be selected or deselected from being available to be viewed, e.g. covert cameras. This setting does not affect the recorded video it is for viewing only.
Terminated	As the Digital Sprite 2 supports loop through by default all inputs are terminated at 75 ohms. If any of the inputs are looped the termination must be removed, un-tick the corresponding termination box.
Mono	If the video input on the Digital Sprite 2 is a black and white (monochrome) source then tick the corresponding camera. The Digital Sprite 2 will try and compress the colour contents of the image if this box is not enabled, ticking this box will remove unnecessary overhead on the compression process.
Telemetry	The Digital Sprite 2 supports numerous protocols for telemetry cameras, this allows the corresponding video input to be configured for the relevant protocol (see below for more information)

## Telemetry Setup Page

1. To access the set up parameters of the camera select the **Telemetry Setup** button on the **Camera Set-up** page.



**Note:** When you select the Telemetry Setup button, it may take a few seconds for the page and video to be downloaded, during this time do not press any buttons as this will slow the process down.

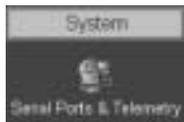
2. The telemetry control buttons for configuration will be displayed along with camera selection, display options and resolution selection.

This web page allows the Operator to view any of the enabled inputs on the Digital Sprite 2, control the telemetry connected to the system and set up any features that are required for their application (such as presets). It is also possible to access the dome/PTZ camera menus for configuration of the supported parameters that are only programmable from the camera menu.



**Note:** Review the relevant documentation for the camera to see how you navigate the camera menus. Remember to save any configuration settings in the dome menu!

## How to Enable Serial Telemetry



The Digital Sprite 2 supports numerous serial telemetry protocols, any of the video inputs on the Digital Sprite 2 can be configured as a functional camera. Serial 3 (Bus A) and Serial 4 (Bus B) can be used for connecting serial telemetry.

Common telemetry operations such as pan, tilt, zoom, presets can be controlled via the Live page of the web interface or via the Viewer software.

The current 485 serial protocols supported on the Digital sprite 2 are:

BBV-RS485	JVC	Pelco-P	Ultrack
DM-Serial	Kalatel	Philips	Vantage
Dennard	Mark Mercer	Samsung	VCL
Ernitec	Panasonic	Sensormatic	Vista

1. Connect the camera and cables to the Digital Sprite 2 before configuring the unit:
2. Select **System -> Serial Ports & Telemetry**.
3. Using the drop down list on the associated Communication port (**Serial 3** (Bus A) or **Serial 4** (Bus B)) select **RS232/485 Telemetry**.
4. Select the relevant **telemetry type** from the list of supported protocols.

5. Enter the dome/PTZ **standard settings** for:

- Baud rate
- Parity
- Data bits
- Stop bits
- Flow control

6. Ensure the **address** of the dome/PTZ camera is the same as the **video input** number on the Digital Sprite 2, e.g. Video input 15 would equate to the dome/PTZ camera being address 15.

7. Remember to save the changes you have made by selecting **Save Settings!**

8. Select **Cameras -> Camera Setup** and select the telemetry protocol from the telemetry list for the corresponding camera.

Once you have selected the telemetry protocol and addressed the dome/PTZ camera it is possible to; review the image from the video input, test the control, configure the features of the camera that are required for you application (such as presets) and access the dome/PTZ camera menus to configure the more enhanced features supported on the dome, refer to the manufactures manual for the camera for these features.



Function	Description
Serial 1 & Serial 2	Serial ports 1 & 2 are RS-232 ports and can have the following port usage assigned; off, debug, general purpose, PPP, text in image and RS232 telemetry.
Modem/TA	When the serial port has been configured for PPP it is necessary to select from one of the supported modems to identify the device connected to the unit, refer to table below for supported modems/TA's.
Serial 3 & 4 (Bus A and Bus B)	Serial ports 3 & 4 are RS-232, RS-422 and RS-485 ports and can have the following port usage assigned; off, debug, general purpose, text in image, RS232/485 telemetry.
Telemetry type	This is the list of serial telemetry protocols that are supported on the Digital Sprite 2.

Function	Description
Baud rate, parity, data bits, stop bits, flow control	This allows the communication settings to be configured, note when telemetry is selected these will not be active and will default to predetermined settings.

## Telemetry Setup Page

1. To access the set up parameters of the camera select the **Telemetry Setup** button on the **Camera Set-up** page.



**Note:** When you select the Telemetry Setup button, it may take a few seconds for the page and video to be downloaded, during this time do not continually press any buttons as this will slow the process down.

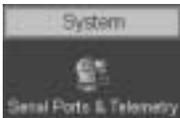
2. The telemetry control buttons for configuration will be displayed along with camera selection, display options and resolution selection.

This web page allows the Operator to view any of the enabled inputs on the Digital Sprite 2, control the telemetry connected to the system and set up any features that are required for their application (such as presets). It is also possible to access the dome/PTZ camera menus for configuration of the supported parameters that are only programmable from the camera menu.



**Note:** Review the relevant documentation for the camera to see how you navigate the camera menus. Remember to save any configuration settings in the dome menu!

## How to Configure Matrix Control



The Digital Sprite 2 can be incorporated into an existing analogue matrix installation and offers control of the matrix via the Live web page or the Viewer software.

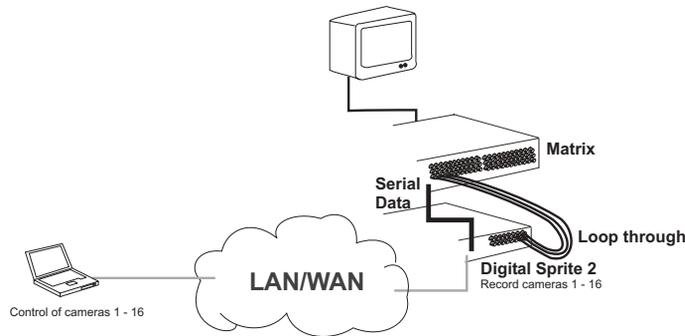
This ensures that any existing equipment does not need to be removed from the installation to allow control over a network, simply integrate the Digital Sprite 2 into the system a network output.

The Digital Sprite 2 supports connectivity to the matrix on any of the Serial Ports. The following matrix protocols are currently integrated into the unit's software:

- American Dynamics (AD) RS232 Matrix
- AD168 RS232 Matrix
- BBV TX1000, TX1500 and BBus-Interface Matrices
- VCL/Ademco Maxcom Matrix

## Connectivity

All video inputs from the matrix must be connected to the Digital Sprite 2 (loop through) as shown below, when installed carry out the following configuration process:



1. Select **System -> Serial Ports & Telemetry**.
2. Using the drop down list on the associated **Communication port** (Serial 3 (Bus A) or Serial 4 (Bus B)) select **RS232/485 Telemetry**.
3. Select the relevant **matrix** from the list of supported protocols.  
The serial standard settings for the selected matrix will automatically be allocated, however if this is incorrect you can change these for:
  - Baud rate, Parity, Data bits, Stop bits, Flow control.
4. Enter the **Matrix Monitor** number of the matrix that the Digital Sprite 2 is connected to and that you will be controlling.
5. Enter the **Matrix Offset** address.
6. Save the configuration by selecting the **Save Settings!**
7. Select **Cameras -> Camera Inputs** and select the matrix protocol from the telemetry list for the corresponding camera.



Function	Description
Serial1 & Serial2	Serial ports 1 & 2 are RS-232 ports and can have the following port usage assigned; off, debug, general purpose, PPP and text in image, RS232 telemetry.
Serial 3 & 4 (Bus A and Bus B)	Serial ports 3 & 4 are RS-232, RS-422 and RS-485 ports and can have the following port usage assigned; off, debug, general purpose, text in image, RS232/485 telemetry.
Telemetry type	This is the list of serial telemetry protocols that are supported on the Digital Sprite 2.
Telemetry Matrix Monitor	Matrices support many monitor outputs, this is the monitor output that has been allocated for connection to the Digital Sprite 2.
Telemetry Matrix Offset	This is the matrix offset to allow any camera input on the matrix to be set as input 1 for the Digital Sprite 2. An example of this is in large systems where multiple operators are allocated groups of cameras, for ease of use each camera can be configured to start at camera 1. However they could actually be connected to any input on the matrix but we would select camera 1 which could be controlling input 32 on the matrix.
Baud rate, parity, data bits, stop bits, flow control	This allows the communication settings to be configured, note when telemetry is selected these will not be active and will default to predetermined settings.

This completes the Simple Configuration of the Digital Sprite 2. The unit can operate at the basic level and the remaining configuration would include functionality that is specific to the customer requirements.

The following parameters have been configured:

- Global settings

- Video inputs

- Cameras parameters

- Record rates

- Remote connectivity

## Advanced Configuration

### How to Configure Variable Recording



The Digital Sprite 2 by default will record all connected cameras. This section goes into full details on how to configure variable record. The Quick Start Guide detailed how the remaining camera inputs on the Digital Sprite 2 can be enabled and configured to record (Standard Record Rate).

Standard recording sets a record rate that is evenly distributed across all the enabled inputs. Alternatively it is possible to identify individual record rates for each of the video inputs; this will allow you to have cameras with higher importance recorded at a higher frame rate.

The following details how the Variable Record Rate can be set for; normal recording, in the event of an alarm and when VMD has been identified on an input. These setting would be used in an alarm situation where an increased frame rate may be required.



**Note:** Remember that although each video input can be individually configured the Digital Sprite 2 supports up to 50pps (PAL)/60pps (NTSC) across all inputs, do not exceed this quantity.

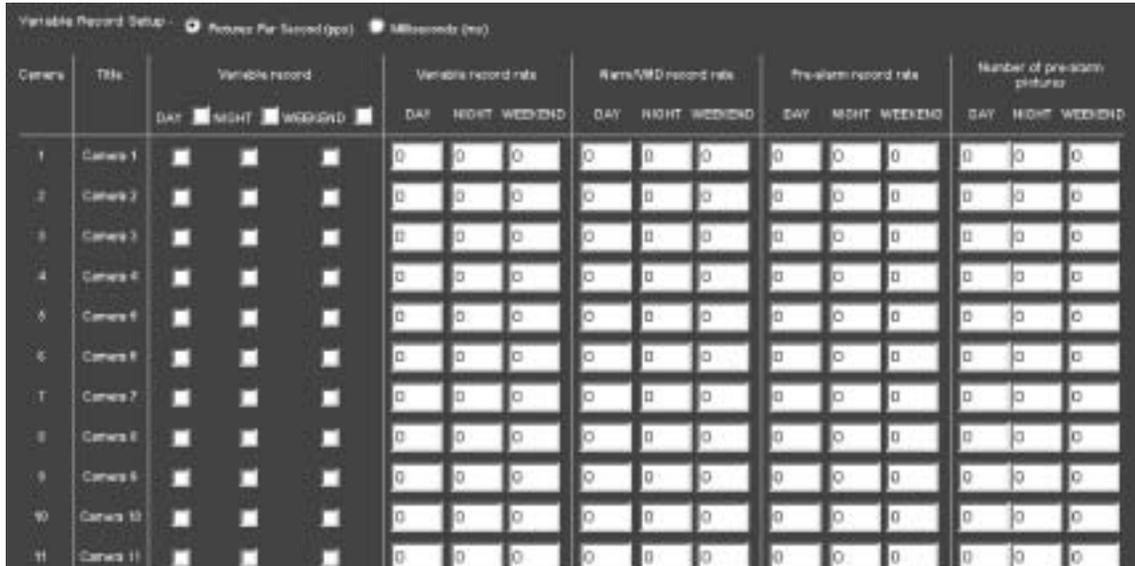
To set up Variable Recording on the Digital Sprite 2:

1. Select **Cameras -> Variable Rate Recording** to configure individual cameras.
2. Select between **Pictures Per Second (PPS)** or **Milliseconds (ms)**.
3. By default the cameras are disabled, to enable the relevant cameras **tick** the box associated with that camera for the operation mode (Day, Night and/or weekend).
4. There are three record rate settings that can be configured within this page; Variable Record Rate, Alarm/VMD Record Rate, Pre-alarm Record Rate. In addition you can also identify the number of pre-alarm pictures that you want to be stored along with the alarm recording. Enter the **record rate** in the relevant setting alongside the camera input for each operation mode (day, night and/or weekend).

If the record rates you enter exceed the **total** record rate that the Digital Sprite 2 supports the following prompt will be displayed.



7. Remember to save the configuration you have entered by selecting Save Settings!



Function	Description
Pictures Per Second - Milliseconds	The variable record rate can be configured as pps or ms. Ensure the information entered is in the correct format.
Variable record Day / Night / Weekend	By default all the video inputs are disabled, this allows you to enable all or select individual inputs in any of the day, night and weekend operation modes.
Variable record rate Day / Night / Weekend	This is the number of pictures per second or milliseconds that the unit will record in normal operation. <b>Note:</b> If the camera is only to be recording in an alarm situation leave the setting at 0. The settings can be entered for day, night and weekend operation mode.
Alarm/VMD record rate Day / Night / Weekend	This is the number of pictures per second or milliseconds that the unit will record when the corresponding video input has identified VMD or has been triggered by an external alarm. This can be configured for day, night and weekend operation modes.

Function	Description
Pre-alarm record rate Day / Night / Weekend	This is the number pre-alarm pictures per second or milliseconds that will be recorded along with the alarm images. These can be set for day, night and weekend operation modes.
Number or pre-alarm pictures Day / Night / Weekend	When the pre-alarm record rate has been set it is necessary to identify the number of pre-alarm pictures, these can be set for day, night and weekend operation modes.

**RAMDisk**

This indicates how much RAMDisk is available for pre-alarm images. This allows the operator to monitor the RAMDisk allocation and ensure as you configure your variable record settings you have sufficient RAMDisk to accommodate the number of images required on alarm; i.e. variable record rate, alarm/VMD record rate, pre-alarm record rate and number of pre-alarm cameras.

The screen shows the settings for camera 1 and camera 2 and how much of the RAMDisk would be required for these settings.

Camera	Title	Variable record			Variable record rate			Alarm/VMD record rate			Pre-alarm record rate			Number of pre-alarm pictures		
		DAY	NIGHT	WEEKEND	DAY	NIGHT	WEEKEND	DAY	NIGHT	WEEKEND	DAY	NIGHT	WEEKEND	DAY	NIGHT	WEEKEND
1	Camera 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	25	25	25	6	6	6	6	6	6	3	3	3
2	Camera 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	25	25	25	6	6	6	6	6	6	3	3	3

NIGHT	RAM disk requirement:	125	KBytes
DAY	RAM disk requirement:	125	KBytes
WEEKEND	RAM disk requirement:	125	KBytes
	RAM disk available:	2048	KBytes
	RAMDISK (A.)	2048	KBytes (16 Kb - 2048 Kb) Max

Note:- The system must be reset after changing the value to RAMDisk (A.)

Function	Description
RAMdisk requirement Day /Night / Weekend	These are read only section and are automatically calculated from; the [number of cameras with pre-alarm recording selected] and the [requested record size]. These show how much of the allocated RAMdisk is required for storing the information for the settings configured, these can be for day, night and weekend operation mode.

Function	Description
RAMdisk available	This identifies the overall size of the RAMDisk that is available on the unit, again this is a read only sections.
RAMDISK (A)	This area is user definable and allows a portion of the RAMDisk to be allocated for alarm recording, the range is between 16KB and 2048KB.

## How to Enable Audio Recording



The Digital Sprite 2 supports two audio inputs which can allow for external audio equipment to be connected to the Digital Sprite 2. This allows the Operator to communicate via the Viewer software across the network to the camera location.

The audio is independent of the video inputs which means any camera can have associated audio equipment, e.g. Intercom system. The audio can also be recorded along side the video to allow review of both simultaneously.

To configure and enable the audio to be recorded:

1. Select **System -> Audio Recording**.
2. Enter the **title** for the Audio **Channel 1**.
3. Tick the box adjacent to the **Channel 1** option to **enable** audio recording. This is the audio coming in to the server.
4. Enter the **title** of the Audio **Channel 2**.
5. Tick the box adjacent to the **Channel 2** option to **enable** audio recording of the output audio, i.e. the audio being transmitted from the Operator application.
6. Make sure you save the information by selecting **Save Settings!**
7. **Reset** the unit for the settings to be actioned.



**Note:** Audio is available in Live monitoring at all times, the audio will only start recording after the Record Audio option has been enabled.



Function	Description
Audio Channel 1	This is the local audio in on the Digital Sprite 2; peripheral audio equipment can be connected to the unit (such as intercom systems, microphones and help points) for complete integration. Allocate a title to the channel which will be saved with the recording.
Audio Channel 2	This is the audio from the network, i.e. from an Operator viewing application, peripheral audio equipment can be connected to the Digital Sprite 2 (such as speakers), for audio integration. Allocate a title to the channel which will be saved with the recording.
Record Audio	Both the Line in and Line out channels can be enabled for recording this means that any communication across the audio link can be recorded alongside the associated video.

## How to Configure the Video Inputs for VMD



The Digital Sprite 2 supports VMD (Video Motion Detection) on all video inputs and allows cameras to automatically detect if there is any movement/changes within the video scene.

This can then trigger a number of operations such as FTP alarm notification and increase camera recording rate for the corresponding video input.



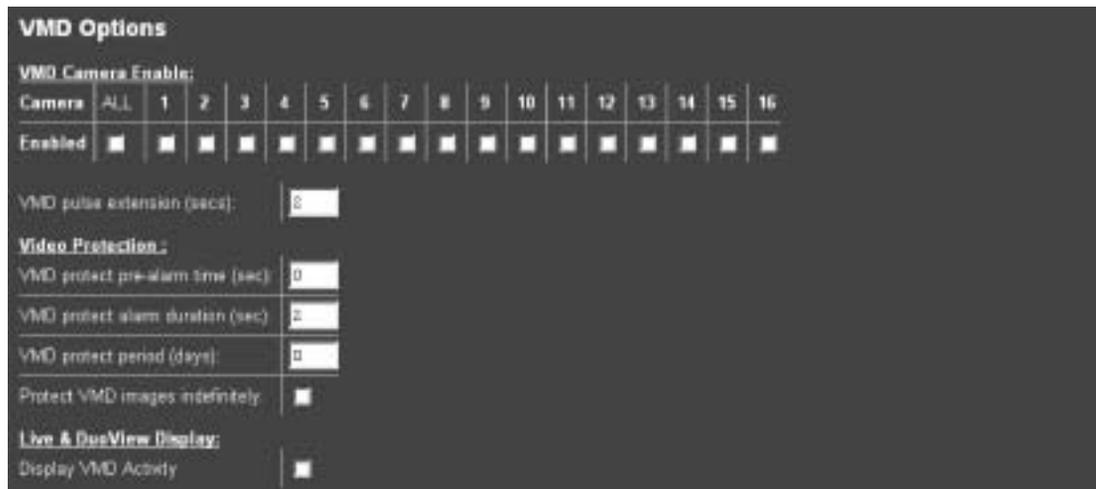
**Note:** It is recommended that you utilise the Walk test function to ensure the settings are correct for each input enabled, if the settings are too low this will mean VMD will not be identified to high and false alarms will occur.

Configuration of VMD will be separated into three sections:

- Enabling video inputs and display options
- Configuring action on notification of VMD
- Setting up the VMD area

To enable individual video inputs on the Digital Sprite 2:

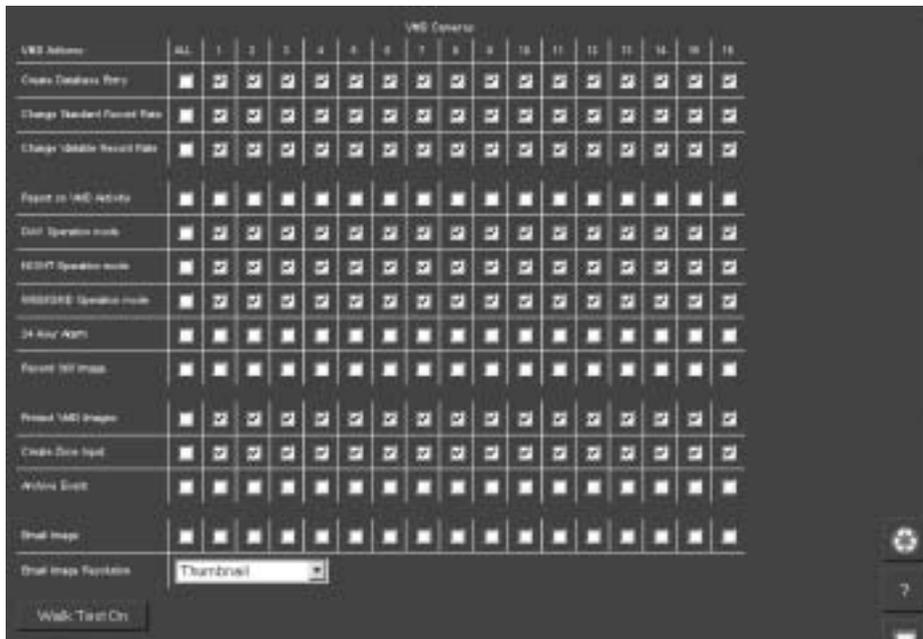
1. Select **Alarms/VMD -> VMD**.
2. **Enable** the **video inputs** that will identify movement by placing a tick next to the corresponding input.
3. The **pulse extension** ensures that the unit does not have double triggers by extending the alarm time. If a second alarm is received after the first alarm is complete but still within this time period the unit will not enter a new event in the database, this setting is set in **seconds**.
4. Enter the **pre-alarm** time settings in seconds, this is the time prior to the VMD trigger that is to be saved and protected from being overwritten along with the actual incident.
5. The **alarm duration** is the minimum time period in seconds from the start of the alarm that will be protected from being overwritten, it includes the alarm recording, the pulse extension and post alarm recording (if applicable).
6. If **VMD actions** are to be **saved and protected** it is possible to allocate the **time period** these are to be maintained or select indefinitely. Enter the time period in days for protecting the files or tick **indefinitely**.
7. It is possible to monitor the video from the **Live** and **DuoView** web pages on the server, if you want to view **VMD triggers** on these page **enable** the function by placing a tick in the box.
8. Remember to save the configuration by selecting **Save Settings!**



Function	Description
VMD Camera Enable	This option will display all the video inputs on the Digital Sprite 2. Each input can be individually enabled for VMD. Tick the box that corresponds to the input that is to be set for VMD monitoring.
VMD pulse extension	The pulse extension extends the trigger to avoid double triggers of VMD from occurring, i.e. if a second incident of VMD is received on the same input, after the first alarm is finished, but still within the pulse extension period the unit will treat this as a single trigger and not create a new event.
VMD protect pre-alarm time	This is the time period prior to the VMD trigger where the images will be saved along with the VMD recording, these images will be available for archive and will be protected from being overwritten.
VMD protect alarm duration	This is the minimum time period in seconds from the start of the VMD trigger that will be protected from being overwritten. This time will include the VMD recording, the pulse extension and any post alarm recording but will not include the pre-alarm images.
VMD protect period	Any VMD entry in the database can be protected from being overwritten, this is the period of time the files will be saved and protected. After this time the files will be automatically overwritten unless specified.
Protect VMD images indefinitely	It is possible to protect VMD images indefinitely to ensure any incidents are saved and protected for review at a later date. These files will remain protected until specified differently.
Live & DuoView Display	It is possible to utilise the web interface to monitor live and recorded video, if the Live or DuoView are to be used it is possible to identify when VMD has been triggered, squares will appear over the area where there is movement.

To configuring the alarm action on identification of VMD:

9. In the **Alarms/VMD -> VMD** web page there are a number of system actions that can be automatically initiated when VMD has been triggered, each camera can be individually configured. Place a tick in the boxes of the **VMD action** under the corresponding camera input.
10. If an **e-mail** is to be sent on identification of an alarm it is possible to configure what information will be contained in the e-mail, using the drop down box select the **resolution** of the image to be sent.
11. Don't forget to save the configuration of the alarm actions by selecting **Save Settings!**



Function	Description
Create Database Entry	This will record an event in the database using the VMD Zone number (refer to Alarm Zone below for more information).
Change Standard Record Rate	This will set the alarm record rate across ALL cameras that are enabled in the record sequence.
Change Variable Record Rate	This will change the record rate of the corresponding camera ONLY, make sure the camera is enabled in the Camera Input page (Refer to the Quick Start Guide for enabling video inputs).
Report on VMD Activity	This will automatically send a telnet alarm message to an allocated Viewer, when the PC receives and accepts the alarm video is then requested, refer to Alarm/VMD Reporting below for more detailed information.
Day Operation	This will enable the VMD zone when the unit is in Day operation mode only.
Night Operation	This will enable the VMD zone when the unit is in Night operation mode only.
Weekend Operation	This will enable the VMD zone when the unit is in Weekend operation mode only.

Function	Description
24 Hour Alarm	This will ensure that VMD is permanently enabled on the corresponding input (24/7).
Record Still Image	This will record (and mark the image by stating the word 'ALARM' in the title) a still of the corresponding video input alongside the recording of the event, access to the still is via the Live Page.
Protect VMD Images	This will protect the whole recorded 50 Mbyte block of video regardless of which camera(s) are recorded.
Create Zone Input	This turns the VMD camera into an alarm input when used with the Alarm Zones page, Select VMD1 instead of an alarm input to trigger the event.
Archive Event	This will mark the VMD event for automatic download to the FTP Server identified or to the Archive list.
Email Image	This will automatically e-mail a snapshot of the VMD incident to the SMTP server identified. refer to Email configuration page for more information.
Email Image Resolution	This is a system setting, the selected resolution will affect any option where snapshot images are possible, i.e. alarms, VMD, etc. The setting identifies the resolution of the image that will be attached to the e-mail as a result of an event.

To set up each camera with a VMD grid:

12. in the **Alarms/VMD -> VMD** web page click on **Click here to VMD applet** option to display the video image and VMD grid, by default video input 1 will be displayed and the grid is divided into 16 zones.



13. Select the **video input** you are configuring from the drop down menu.

14. Select **zone** you are configuring from the drop down box.



**Note:** Any configuration carried out at this stage is for the selected video input and zone, you will need to save the settings and then select another zone to configure the whole area.

15. Alternatively if the default zones are not positioned over the areas you intend assign for detecting motion detection there is an option to **clear all cells**, you will be presented with a prompt to check you want them cells deleting, select **Yes**.



16. To set a zone **click at the edge of the area** where you want to place the zone, move to the **opposite corner** where the zone will sit and click again, a zone area will be displayed over the area.

17. It is possible to have a grid overlay displayed on the image to assist in placing the zone areas, select **graticule on** to display the grid.



18. Select the **next zone** from the drop down box to create another zone area and follow Step 16.



**Note:** If this is incorrect then you can click again and the zone will move to the new area.



19. If you want to use the default zone settings you can select the **default grid** option, this will place 16 zones over the image. You will be presented with a prompt, select **Yes**.

20. Select the **zone mode** from the drop down box that will apply to the zone you have selected see below for description of zone modes.

21. Set the **pixel count (%)** by selecting from the drop down box the range is between 2 and 100%.

22. Set the **pixel change (%)** by selecting a value from the drop down box the range is between 2 and 100%.

An example of VMD operation:

Select the 'zone area' that will be configured and set the 'pixel count' to 20%, this determines the percentage of pixels, in the selected zone, that must change for VMD to be triggered. Set the 'pixel change' to 10%, this is the percentage value of the overall change required in the greyscale.

23. To check you have covered the areas that you want to monitor for motion you can select to view the zone areas only, select **zone display only** and you will be presented with the areas you have highlighted.



24. Selecting **full display** will show the whole image.

25. Remember to save the configuration by select **Save Settings!**



Function	Description
Camera	This is a drop down list of the video inputs on the Digital Sprite 2, selecting one of the inputs will display the corresponding video source.
Zone	There are 16 advanced VMD zones that can be individually configured, select the zone from the drop down list.
Mode	The zone mode identifies when the reference image is taken for triggering VMD. The options are: <b>Normal</b> - the reference image is updated approx. 1/second so this will only allow small changes in the scene without triggering <b>Last trigger</b> - the reference image is only updated when the VMD is triggered and would be used under controlled lighting, i.e. so there are no false triggers due to ambient light changes <b>Static</b> - the reference image is collected on startup and is never updated. This would be used in 'sterile' areas where there are no changes expected <b>Zone disabled</b> - this will disable the zone mode.
Pixel Count (%)	This value is set as a percentage and equates to the percentage of pixels in the selected zone that must change for the VMD event to be triggered.
Pixel Change (%)	This setting is a percentage value of the overall change required in the greyscale to be included in the pixel count. The percentage change is defined over the complete range of black to white, a 100% pixel change would be from black to peak white.
Clear Cells	Removes all defined zones from the image.

Function	Description
Default Grid	Displays the default grid of 16 VMD zones over the whole image.
Graticule On	Displays a grid to assist in identifying and creating zone areas.
Zone Display Only	This will display the areas of the image that are covered by a zone only and will assist you in ensuring the necessary areas are covered.
Resolution	This is the resolution of the reference VMD image being displayed.
Refresh	This will update the reference image to the latest view during set up.



**Note:** Ensure that the display VMD in image option is checked before continuing.



**Note:** VMD 0 refers to Activity Detect which is setup via the OSD menus, refer to the Setup Guide.

## Walk Test



This is part of the configuration process and will provide you with a low resolution image to check that the settings made for VMD activity cover the required area(s).

A thumbnail will be displayed and any triggers will be displayed on this screen this will enable you to add zones if all areas are not covered increase or decrease the sensitivity, etc.

Using the Walk test will ensure that you are satisfied with the configuration and remove the need to revisit the site.



**Note:** A VMD Zone can be used to trigger an Alarm Zone, refer to How to Enable and Configure Alarms for more information.

## How to Enable and Configure Alarms



The Digital Sprite 2 supports 17 alarm inputs which can be individually configured.

This section will be divided into:

- Enabling and configuring the alarm inputs
- Enabling and configuring the alarm actions

By default the 16 alarm inputs are disabled, these need to be enabled so that external alarm devices can be connected to the Digital Sprite 2.

1. Select **Alarms/VMD -> Alarm Inputs**
2. Place a tick in the box under the **Enabled** option to select all the alarm inputs or individually tick the required alarm(s).



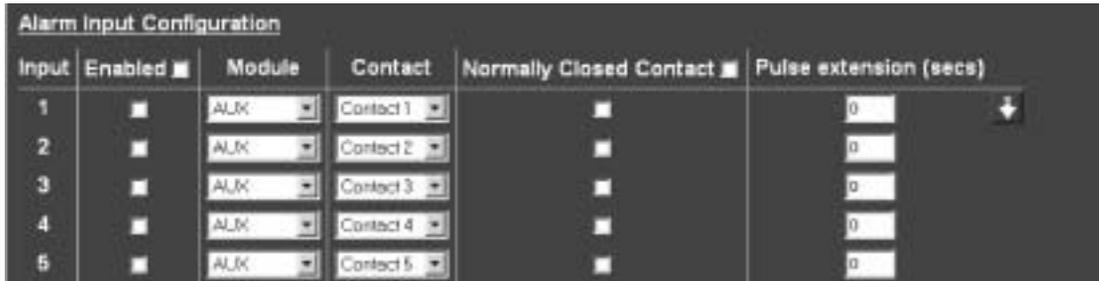
**Note:** There are 16 alarm inputs on board the unit and the option for an additional 16 alarm inputs (17 to 32) by connecting a DM alarm module to the Digital Sprite 2. Ensure the additional alarm module is connected to the Digital Sprite 2 before powering up the unit.

3. Select the **input** that the alarm will be triggered on from the drop down menu, select the **contact** number.
4. Select whether the input is **Normally Open** or **Normally Closed** by default.

4. Set the **pulse extension** for the relevant **alarm input** (if applicable).

5. Remember to save the configuration by selecting **Save Settings!**

Once the alarm inputs have been enabled it is necessary to configure what actions will be taken when an alarm is triggered.



Function	Description
Input	This identifies which input is being configured. The Digital Sprite 2 supports 16 on-board alarms and 16 virtual alarms plus the unit can also have an additional alarm modules connected each supporting 16 alarm inputs.
Enabled	Each input must be enabled for it to be functional; if the input is not enabled and an alarm is received the Digital Sprite 2 will not acknowledge the alarm. By default none of the alarm inputs are enabled.
Module	This identifies whether the alarm is from the onboard alarms or one of the additional alarm modules. The options are Aux, Direct, Module 1 to 16.
Contact	Identify the contact that is associated with the selected module. This option allows you to select from contact 1 to 20 for Aux, Contact 1 for Direct and Contact 1 to 16 for additional modules.
Normally Closed Contact	This applies to both the on-board alarms and the additional alarm module, that can be connected to the Digital Sprite 2 via the 485-bus. When an input is enabled then by default it will be normally closed, removing the tick in the normally closed box makes the corresponding input normally open going closed for alarm.
Pulse extension	The pulse extension extends the trigger to avoid double triggers from occurring, i.e. if a second alarm is received, after the first alarm is finished but still within this time period, the unit will not create a new event.



Actions can be allocated to each alarm zone; This menu allows a single alarm trigger to carry out any action such as increase record cameras 1-4, send notification via FTP, etc.

It is possible to allocate up to 32 alarm zones to carry out a combination of actions.



**Note:** There are some pre-defined alarm zones; Zone 30 Disk Low, Zone 31 Disk Full, Zone 32 Panic Alarm.

This section is separated into:

- Enabling and configuring the alarm zone
- Allocating alarm actions

To enable and configure the alarm zone:

1. Select **Alarms/VMD -> Alarm Zone**.
2. Alarm recordings can be protected from being overwritten for a set **period of time** or **indefinitely**. Enter the time period in days that the alarms are to be protected or place a tick in the box alongside indefinitely.
3. Select the **alarm zone** to be configured from the drop down option (Zone 1 to Zone 32).
4. Enter an appropriate **title** to the **alarm zone**, this will be stored in the database (if enabled), it is also possible to use the camera title for identification.
5. Enter the **time period prior** to the **alarm** that you wish to save along with the incident for review with the incident, this time is in seconds.
6. Enter **alarm duration** in seconds; this is the time period where associated video will be protected from being overwritten.
7. The **zone alarm input** can be an of the external alarms (direct or 485), any of the configured VMD zones or any of the preset settings, select the appropriate alarm input from the drop down list.
8. The **Zone OR** input allows you to configure a situation where an alarm received on either of the **zone alarm input** or the **zone OR** input will force the Digital Sprite 2 go into alarm mode and initiate pre-defined alarm actions, select the appropriate option from the drop down list.
9. The **zone AND input** allows you to configure a situation where an alarm must be received on both the **zone alarm input** and the **zone AND input** to force the Digital Sprite 2 to go into alarm mode, select the appropriate option from the **drop down list**.

10. The **zone NOT input** allows you to configure a situation where if an alarm is received on the **zone alarm input** then an alarm must **not** be received on the **zone NOT input** to force the Digital Sprite 2 into alarm mode which will initiate the alarm actions configured, select the appropriate option from the **drop down list**.

11. Remember to save the configuration by selecting **Save Settings!**

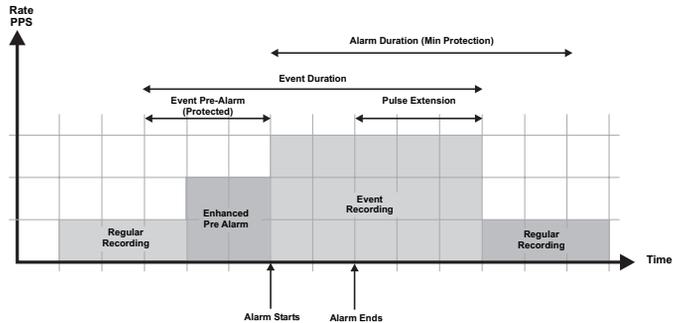


Function	Description
Alarm image protect period	<p>This is the time period in days that the alarm images will be protected from being overwritten, when this time period elapses the images will be automatically overwritten.</p> <p><b>Note:</b> When protecting an image it is important to remember that the Digital Sprite 2 saves files in 50 Megabyte blocks, the whole block that contains the image will be protected. If the image overlaps into another block the all associated blocks will be protected this can start to reduce the hard disk capacity available for storing images. To unprotect images refer to <i>System -&gt; Protect/Unprotect Images</i>.</p>
Protect alarm images indefinitely	<p>Protecting the alarm images indefinitely will ensure the alarm images are never overwritten .</p> <p><b>Note:</b> This section must be used in conjunction with <i>System -&gt; Protect/Unprotect Images</i>.</p>
Select Alarm Zone	<p>An alarm zone logically groups alarms and initiates actions when an alarm is activated, there are 32 zones that can be configured.</p> <p>Note: There are a number of zones which have been pre-configured; Zone 30 Disk Low, Zone 31 Disk Full, Zone 32 Panic alarm.</p>
Zone Title	<p>This information is stored along with the images in the database, ensure this has relevance to the alarm trigger. There is an option to use the camera title.</p>

Function	Description
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Pre-Alarm Time	This is the period of time prior to the alarm start that will be included along with the alarm recording for archive and these images will also be protected from being overwritten.
----------------	--

Alarm Duration	This is the minimum time period in seconds from the start of the alarm that will be protected from being overwritten. This time will include the alarm trigger, the pulse extension and any post alarm recording, it will not include the pre-alarm images.
----------------	---



Zone Alarm Input	This determines which input or system function will trigger the zone alarm, the options are; Contacts 1 to 32, VMD 1 to 16, Presets 1 to 16, Disk low, Disk full, Panic and no contact.
------------------	---

Zone OR Input	The Zone OR Input identifies an alternative input that can also be used to trigger the zone alarm. This means an alarm trigger can be received on the Zone Alarm Input or the Zone OR Input for the trigger to be activated, the options available are the same as the Zone Alarm Input.
---------------	--

Zone AND Input	The Zone AND Input identifies that an alarm trigger needs to be received on both the Zone Alarm Input and the Zone AND Input for the trigger to be activated and the alarm action to be automatically initiated. The options available are the same as the Zone Alarm Input.
----------------	--

Zone NOT Input	The Digital Sprite 2 will only issue the alarm actions if the trigger is received on the zone alarm input and <b>not</b> on the Zone NOT input. The allocated alarm triggers available are the same as the Zone Alarm Input.
----------------	--

To allocate the cameras and actions that will be carried out when an alarm is received:

13. Select the cameras from the **select zone camera** list which are to be included in the zone being configured. To select a camera **click the mouse over** the cameras these will then be highlighted. At least one camera must be highlighted at all times.

14. All of the **alarm zone actions** can be allocated to each of the zones, to select all actions, place a **tick** in the **select all** box.

15. To select individual actions place a **tick** alongside the **relevant action**, see the table below for more information on the actions listed.

16. If multiple cameras have been selected a **primary camera** must be allocated to the zone, select the corresponding camera from the **drop down list**. The primary camera is the camera that a still image will be taken from for e-mailing on alarm and will be the first camera displayed on the Operator monitor.

17. It is possible to send a camera to a **preset position** on receipt of an alarm, identify the **preset number** and the corresponding **camera** that is to be switched.

18. It is possible to automatically close a **relay output** when an alarm zone is triggered, the relay can be connected to an external device; door entry system, loudspeaker announcement system which means the system can function automatically without user intervention. Select the **relay** that is to be actioned on receipt of an alarm.

19. An **e-mail** can be sent to an e-mail server on alarm, enable this option and identify the **resolution** of the image that will be attached to the e-mail.

20. Save the information configured by selecting **Save Settings!**



Function	Description
Select Zone Cameras	This allows you to select one or more cameras that will be associated with the Alarm Zone being configured. Each camera will become part of the 'alarm sequence' when this alarm zone is triggered.
Alarm Zone Actions (select all)	There are numerous actions that can be included in any of the zones being configured, this option will enable all actions.
Text Only Alarm	This is not currently supported.
Switch System into NIGHT operation mode	This will switch the unit to night operation mode and assign the night operation settings to the recorded video.
Switch System into WEEKEND operation mode	This will switch the unit to weekend operation mode and assign the weekend operation settings to the recorded video.
Create Database Entry	An alarm entry will be added to the database, the zone title will be used as part of the entry information.

Function	Description
Change Standard Record Rate	This will change the record rate of the cameras that have been identified in the Standard Record Rate page (refer to Camera Set-up for information on how to configure standard record rate). The cameras will switch to the alarm record rate specified. <b>Note:</b> Changing the zone cameras has no effect on which cameras have their standard record rate changed.
Change Variable Record Rate	This changes the record rate of the cameras that are selected in the alarm zone to the variable record rate previously specified (refer to How to Configure Variable Record Rate in this section of the manual). Each of the cameras must have an alarm record rate specified.
Connect/Dial on Alarm	The Digital Sprite 2 will automatically connect to the remote alarm monitoring station defined. <b>Note:</b> You need to enable the dial on alarm system feature for this function to work.
Alarm Enabled in Day operation mode	Each alarm can be configured to be active when the unit is in a specific operation mode, enable this for the alarm to be active in Day operation mode.
Alarm Enabled in Night operation mode	Each alarm can be configured to be active when the unit is in a specific operation mode, enable this for the alarm to be active in Night operation mode.
Alarm Enabled in Weekend operation mode	Each alarm can be configured to be active when the unit is in a specific operation mode, enable this for the alarm to be active in Weekend operation mode.
24 Hour Alarm	This option would be enabled for alarms that do not want to change at any time and will remain as programmed, i.e. Panic Alarm. When this is selected the day, night and weekend options are not available.
Record still image	This will record a still image of the trigger along with the standard recording. Still images are accessible through the Live page of the web interface. This will also add the word 'alarm' to the title header.
Protect alarm Images	Alarm images can be automatically protected from being overwritten.
Archive Alarms	This will force the Digital Sprite 2 to automatically download alarm images via FTP to an FTP server or directly to the local CD writer.

Function	Description
Primary Camera	The primary camera is the camera that the unit will take a still image from for e-mailing on alarm, added to the event database and this will be the camera that will be the first to be displayed on the Operator monitor.
Goto Preset	It is possible to action a camera, to be automatically sent to a preset position when an alarm zone is triggered, identify the camera and the preset number.
Close Relay	Any of the onboard or external relays can be configured to automatically close on receipt of an alarm, the options are onboard relays 1 to 6 (if relays 1 to 3 are not pre-defined within the System -> Relay Set-up page) and Module 1 Relays 1 to 16.
Email Image	When e-mail on alarm is enabled it is possible to attach an image to the e-mail, the resolution of the image must be defined. It is important to consider the speed of the link between the Digital Sprite 2 and the SMTP Server that the e-mail will be sent to. The resolution options available are; thumbnail, high resolution, medium resolution and low resolution, the resolution setting is a system settings and will have an affect on all options that include e-mail attachments.

## How to Configure Alarm Presets



The Digital Sprite 2 supports the ability to automatically send a camera to a preset position on the receipt of an alarm.

Within this web page it also possible to identify if the alarm is to be available as a trigger for an alarm zone. To enable and configure alarm presets:

1. Select **Alarms/VMD -> Alarm Presets**
2. Select the **camera** that will be sent to the **preset** position from the drop down list.
3. Enter the **pulse extension** in seconds.
4. Select **Aux** or the **Module** number from the drop down list that the input will be triggered from.
5. Select the **contact** number for the Aux input or the Module.
6. Identify if the input is **normally open** (not ticked) or **normally closed** (ticked).
7. Enter the preset position that the camera is to move to when the alarm is triggered.
8. Select whether the alarm is to be available as a **zone trigger**.
9. Remember to save the configuration by selecting **Save Settings!**

### Alarm Preset Configuration

Select Camera: 01 - (Camera 1) ▾

Pulse extension (secs): 5

Module Number	Contact Number	Normally Closed Contact	Preset	Zone Trigger
AUX ▾	Contact 1 ▾	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>
▾	No Contact ▾	<input type="checkbox"/>	0	<input type="checkbox"/>
▾	No Contact ▾	<input type="checkbox"/>	0	<input type="checkbox"/>
▾	No Contact ▾	<input type="checkbox"/>	0	<input type="checkbox"/>
▾	No Contact ▾	<input type="checkbox"/>	0	<input type="checkbox"/>

Function	Description
----------	-------------

Select Camera	Select the camera that is to be configured.
Pulse extension	The pulse extension extends the trigger to avoid double triggers of alarms from occurring, i.e. if a second incident is received, after the first alarm has finished but within this time period, the unit will not create a new event.
Module Number	This identifies the alarm input that will be the trigger for the camera being configured, the options available are the Auxiliary input and Module 1 to 16 for the additional alarm modules that can be connected to the Digital Sprite 2.
Contact Number	The Auxiliary input and the additional alarm modules support sixteen input contacts any of these can be allocated as the alarm input trigger.
Normally Closed Contact	The alarm trigger can be configured as normally open (default) or normally closed.
Preset	The preset position is the position the camera will move to when the alarm is triggered.
Zone Trigger	It is possible for a camera specific alarm to also trigger an alarm zone. If the input is to trigger a zone as well as send a camera to a preset position this option must be enabled.

## How to Configure the Relay Connections



The Digital Sprite 2 supports a number of onboard relay connections and can also integrate additional relay modules via the 485 bus connection.

These relays can be triggered under specific conditions; on receipt of an alarm, notification of VMD, etc or they can be permanently allocated for set functions.

This section details how to enable the default actions for a number of the on-board relays.



**Note:** If the defaults are not set this allows the onboard relays to be available to be automatically triggered on alarm, this is configured within the Alarm/VMD -> Alarm Zone option.

Relays 1 to 3 can have pre-configurable global options enabled.

To enable the default relay settings.

1. Select **System -> Relay Setup**. There are three default settings that can be enabled which are directly linked to a relay.
2. **Relay 1** can be configured to trigger when any of the **alarm zones** that have been configured are triggered. **Tick** the corresponding box.
3. **Relay 2** can be configured to be triggered when **VMD** has been activated on any of the video inputs that are enabled in the VMD page. **Tick** the corresponding box.
4. **Relay 3** can be configured to trigger when any of the enabled video inputs does not detect a 1 volt peak to peak video signal and therefore detects **camera fail**. **Tick** the corresponding box.
5. Save the configuration by selecting **Save Settings!**



**Note:** If any relays are enabled for the default settings the corresponding relay test option will be removed from the Close Relay list in the Alarm Zone page, refer to the previous section for more information.



Function	Description
----------	-------------

Global Alarm	It is possible to configure Relay 1 default as the global alarm relay, this means that the relay will close when an alarm is received on any of the alarm inputs.
Global VMD	It is possible to configure Relay 2 default as the global VMD relay, this means that the relay will close when VMD is identified on any of the camera inputs.
Global Camera Fail	It is possible to configure Relay 3 default as the global camera fail relay, this means that the relay will close when there is notification on the system that any of the enabled video inputs has camera failure (no 1V pk-to-ok signal).

## How to Configure Connect/ Dial, FTP, SMS and Email on Alarm

As described in the Alarm Zone section above there are a number of actions that can be initiated when the Digital Sprite 2 is in receipt of an alarm trigger.

For these actions to operate correctly there are additional configuration requirements; FTP server address, SMS / GSM settings and SMTP Server address. Without this information the Digital Sprite 2 would not have a route to transmit images on receipt of an alarm or notification of VMD. This section will be separated into the configuration processes required to enable these functions to operate.

### How to Configure Connect/Dial on Alarm



It is possible to force the Digital Sprite 2 to transmit a message to an allocated Viewer on receipt of an alarm. This connection can be via the Ethernet port of the unit or via a dial up connection on the serial port of the unit.

The message will be transmitted to the remote station to notify them of an alarm on the system. The operator can then make a connection to the unit to verify and action the alarm response.

There are two modes of configuration depending on the route of the alarm message. For Ethernet the system can be configured wholly using the web interface pages, when using the modem link, also referred to as PPP (Point to Point Protocol) then it is necessary to edit the 'profile' file within the \etc directory of the Digital Sprite 2.

At this stage it is presumed that the Digital Sprite 2; is installed with a modem connected to a serial port and/or is connected to the Ethernet network and has been allocated an IP address but the serial port has not been enabled for PPP.

This section will be separated into:

- Enabling PPP for dialling into the Digital Sprite 2
- Enabling PPP and identifying specific modems for dial up
- Configuring Alarm/VMD Reporting via the web and editing the profile.ini file

### How to Enable and Configure PPP via Serial Port



The Digital Sprite 2 supports PPP via serial connectivity and also over the network connection. The following identifies the parameters that require configuration to allow a PPP connection to be made via the serial interface.

To enable PPP and allocate a modem:

1. Select **System -> Serial Ports & Telemetry**.
2. Using the drop down list on the associated Communication port (**Serial 1 or 2**) select **PPP**.



**Note:** PPP Link 1 is allocated to Serial 1 for dial out on alarm and PPP Link 2 is allocated to Serial 2 for dial in.

3. Select the relevant **modem** from the **Modem/TA** drop down list, if your modem is not supported select **generic**.



**Note:** Auto detect will only auto detect the modems the Digital Sprite 2 recognises.

### Supported Modems

Generic AT Modem	3Com US Robotics 56K Modem
3ComImpact II	Falcom GSM Phone / Modem
KTX 33600 – Modem	PLANET Smart IP
PSL - ISDN TA	Nokia30 GSM
Nokia30 HSCSD V.110	Nokia30 HSCSD V.120
SHIVA LanRover	Siemens TC35GPS / MC35 GPRS
Spider 4 CDPD Modem	Zyxel Omni-net.D - ISDN TA

4. The **serial standard settings** for the selected modem will automatically be allocated, however if this is incorrect you can change these for:

- Baud rate, Parity, Data bits, Stop bits, Flow control  
115200, 0, 8, 1, HARDWARE

5. Remember to save the configuration by selecting **Save Settings!**

6. **Reset** the Digital Sprite 2 for the unit to initialise the modem.

## How to Configure the Remote Alarm Host Information

When an alarm is triggered the Digital Sprite 2 will send a message via the serial port or over the network using PPP.

This section identifies the details of the receiving station and the route the message will take.

When using the Ethernet network to transmit the alarm message all configuration for the remote receiving station can be carried out using the web interface, to enable PPP via a modem the 'profiles' (etc\profiles) file will need to be edited.

To configure the 'profiles' file:

1. Using an **FTP client** application connect to the Digital Sprite 2.
2. Locate the **etc** directory and expand.
3. Locate the **profiles** file.
4. Select **open/view/edit** (depending on the application) to open the file for editing.
5. The profile information will be displayed, enter the information regarding the **modem link; Username** (& Profile Label), **Password, Port, Phone No, IP Address Range, Subnet Mask**.

The port options available are:

PPP\_Link2 = Serial 2

PPP\_Link2 = Serial 1

Ether = Ethernet



**Note:** The port option is case sensitive, entering the information incorrectly will result in the function not operating. It is recommended that Serial 2 be used for PPP for the serial options as Serial 1 is by default set as Debug and this would still enable serial communication with the unit.

An example of the profiles file is shown below:

```
# _____  
# Profiles Table List  
# _____
```

<Username>	<Password>	<Port>	<Phone No>	<IP Address Range>	<Subnet Mask>
dm	password	PPP_Link2	1234567890	10.0.0.1	255.255.255.0
username	password	PPP_Link2	1234567890	10.0.0.1	255.255.255.0
test	password	PPP_Link2	1234	10.0.0.1	255.255.255.0

The username will also be the profile information that will be entered in the web interface page.



**Note:** The username and password must be unique and they will both be case sensitive.

6. **Save** the file and **upload** back onto the Digital Sprite 2. You will now need to add this information to the **Alarm/VMD Reporting** page via the web interface.

7. **Reset** the Digital Sprite 2.



**Note:** It is possible to identify the host information, as displayed on the web page, within the hosts file in the /etc directory.

To configure the remote alarm station information using the web interface:

1. Select **Alarms/VMD -> Alarm/VMD Reporting**.
2. Enter the **IP address** of the **primary remote host**, this is required for connections via the network and via the serial ports.
3. When making a connection via the Ethernet network enter **Ethernet** to identify the medium by which the connection will be made. Alternatively for dial up connections via the modem enter the **username** previously configured in the '**profiles**' file, the example above would result in the profile entry being dm.
4. Enter the **IP address** of the **secondary host**; this is in case the primary host can not be contacted.

5. Enter the medium how the Digital Sprite 2 will connect to the host; **Ethernet** or the **username** as identified in the 'profiles' file.
6. When using **NAT** enter the IP address that will be used for the public address.
7. Enter the **video server port** number when port forwarding is required.
8. Identify the **Unit Alarm name**; this is the name that will be presented to the remote alarm station and must match the name that has been allocated in their site tree.
9. For the system to **dial on alarm**, **system startup** and **camera fail** these functions must be enabled, place a tick in the box associated with the function.
10. Enter the **time delay** between the Digital Sprite 2 trying to connect to the remote monitoring station after a failed connection.
11. Enter the number of times the Digital Sprite 2 is to **re-try** to connect to the remote monitoring station, a value of 0 means no limit is set and therefore the unit will continue to re-try until a connection is made, this should be taken into account when using a dial up connection.
12. This **telnet server port** is the port that the receiving station will have allocated to list for alarm message from the Digital Sprite 2, if these port addresses do not match the function will not operate.
13. Save the configuration by selecting **Save Settings!**



**Note:** It is necessary to have a separate 'telserver' application enabled when using NetVu ObserVer or have the telserver function on the DV-IP Viewer software enabled, of the PC that will be utilised for remote alarm monitoring, refer to the Viewer manuals for more detailed information.



**Note:** For configuration via the OSD refer to Appendix G where all menu options are described.

14. It is necessary to configure the PPP settings on the unit, select **Network -> Network Settings**, enter the **PPP IP address**.



**Note:** The PPP IP address must be in the same network range as the Alarm Receiving Centre.

15. Enter the **PPP Idles Line Timeout** and the **PPP Link Down Timer** to determine how the Digital Sprite 2 will transmit information via PPP, these settings should be discussed with the Network Manager.

### Alarm Connection Settings

	HOST	PROFILE
Primary:	<input type="text"/>	<input type="text"/>
Secondary:	<input type="text"/>	<input type="text"/>
Public (NAT) IP Address	<input type="text"/>	
Video Server Port (Port forwarding)	<input type="text" value="0"/>	
Unit Alarm Name:	<input type="text"/>	
Remote Alarm Reporting	<input checked="" type="checkbox"/>	
Remote Camfall Reporting	<input checked="" type="checkbox"/>	
Remote Startup Reporting	<input checked="" type="checkbox"/>	
Dial Retry Time:	<input type="text" value="1"/> (minutes)	
Dial Limit:	<input type="text" value="0"/>	
Alarm Telet Server Port	<input type="text" value="23"/>	

Function	Description
Primary Host	This is the IP address or name of the initial host that the Digital Sprite 2 will transmit an alarm message to.
Secondary Host	If the Digital Sprite 2 is unable to contact the primary host then it is possible to identify an alternative route and a secondary host. If there is only one alarm receiving IP address, you must enter the details in both the primary and secondary connection settings.
Profile	This is the medium that the Digital Sprite 2 will use to make the connection to the primary or secondary host. <b>Note:</b> If the connection is via the serial port the profile will be the username configured in the 'profiles' file in the \etc directory on the Digital Sprite 2.
Public (NAT) IP Address	This is public IP (or domain name) for a unit connected to the Internet via a NAT Router or Firewall. This field should be left blank if NAT is not used e.g. on a private network.
Video Server Port (port forwarding)	This field allows the ARC to connect to the unit through a router that is using port forwarding e.g. if the video server does not appear on port 80 (HTTP) to the external network.

Function	Description
Unit Alarm Name	This is the name that will be presented to the remote alarm viewing application and therefore should have some significance to the Operator. This name must match the defined folder name in the Viewer PC folder tree.
Report Alarm Reporting	This must be enabled for the Digital Sprite 2 is to automatically connect on alarm, it must also be enabled in the Alarm Zone option.
Report Camfail Reporting	If the Digital Sprite 2 identifies camera failure on any of the inputs, enabling this option will force the unit to connect to the remote alarm station.
Report Startup Reporting	This will send an alarm report when the Digital Sprite 2 starts up, this will identify any system resets.
Dial Retry Time	If the initial connection attempt fails then the Digital Sprite 2 will wait for the specified time period before attempting to re-connect.
Dial Limit	This identifies the number of times the Digital Sprite 2 will attempt to connect to the remote alarm monitoring station after a failed attempt. A setting of 0 identifies no limit and the Digital Sprite 2 will continue to try and connect until it is successful.
Alarm Telnet Server Port	This specifies the network port number to use for reporting to the alarm server. This is normally left at the default value.

## How to Configure FTP Settings for Archiving Images



The Digital Sprite 2 can archive images to a central FTP server or to the internal CD writer; this can be on receipt of an alarm or VMD using a scheduled time to backup the video.

When using FTP in a multi-unit application this ensures that all files are stored in one central location for each of the Digital Sprite 2s, offering efficient file management and easier review capabilities.



**Note:** It is also possible to archive images directly to the internal CD, refer to the Setup Guide for full details on how to select download to CD for archiving.

To configure the FTP information:

1. Select **Network -> FTP Events Download**.

2. Enter the information on the **FTP Server**, this can be an IP address, full URL or name of the server.
3. It is possible to identify the **FTP control port**, the default for networks is usually port 21 however if this port number is not supported on the network, then this option allows you allocate an unused port number.
4. Enter the **directory information** where the images are to be stored, this should be a name associated with the Digital Sprite 2 name for ease of retrieval.
5. For files to be saved to the FTP Server it is necessary to go through an **authentication process** to gain access to the server, enter the **username** and **password**.
6. It is possible to enable the Digital Sprite 2 to **start an FTP download** when an **active Ethernet** connection is detected.



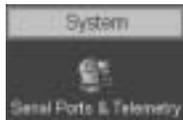
**Note:** As the Digital Sprite 2 always has a permanent network connection the Active Ethernet option means when the Network port identifies a change in state of the Ethernet link (down to up), for example when the Digital Sprite 2 is reset or the network cable is unplugged then re-connected.

7. If the FTP download is to happen **automatically** at a **set time** each day, enter the required time in the **scheduled time** option.
8. It is possible to enable an FTP download and more regular intervals by enabling the **polled** option, once enabled identify the **time period** between the end of one FTP download to the start of the next.
9. If the FTP download is only to be initiated by the **Operator** then enable the **manual download** option. The FTP download will only commence when the **Start Download** button is selected.
10. To automatically **remove the image protection** from files that are **downloaded** then enable the **clear video protection after download** option. If this is not enabled the images would require un-protecting manually via the Alarm Image Protect/Un-Protect page.
11. It is possible to allocate a **watermark** for each video partition; this watermark information is logged in the **log file**. Enable this function by selecting **watermark each partition download** option.
12. The server directory is a fixed directory structure, all FTP downloads will be saved in the directory name you have identified under this main directory. This a read only section.
13. Remember to save the configuration by selecting **Save Settings!**

Function	Description
FTP Server	This is the IP address, URL or name of the FTP server the Digital Sprite 2 will connect to for FTP download of images.
FTP Control Port	The default port for FTP is port 21, if this port has already been allocated on the network it is possible to identify and alternative port number.
FTP Root Drive/Directory	This is the directory where the images are to be stored, it is recommended that a name associated with the unit name be used for ease of retrieval.
Username	To access an FTP Server it is necessary to go through an authentication process, this is the username for you to gain access to the FTP Server.
Password	To access an FTP Server it is necessary to go through an authentication process, this is the password for you to gain access to the FTP Server.
On Connection	This will automatically start the Archive download when the unit detects the archive destination is present (CD/DVD or network).
Scheduled and Schedule time	It is possible to force the Digital Sprite 2 to archive images at a scheduled time, the time entered will be the time each day that this function will be activated.
Polled and Poll time	This will set the unit to activate archive download at regular intervals, the time period is in minutes and is the time between the end of one archive download to the start of the next.

Function	Description
Manual only	The archive process will commence when the User initiates the action by pressing the 'Start Download' button.
Clear video protection after download	This automatically clears the image protect from the images that are successfully downloaded.
Watermark each partition after download	This enables a watermark to be generated and stored in a text file downloaded with the video to the FTP server for each image partition, this watermark is logged in the log file.
Server Directory	This is the main directory on the FTP server where the images will be stored. The Root Drive/Directory will be created under this main directory. This is read only.
Start Download	This allows the user to manually start the download process.

## How to Configure SMS Text messaging



The Digital Sprite 2 supports the function to send an SMS text message to a mobile phone.



This gives the ability to automatically or manually action the Digital Sprite 2 to send a text to inform a Guard of incident when they are away from the monitoring station, i.e. Security check of the site, mobile security units, making sure the site is monitored 24/7 whether the Guard is at the site or mobile.



**Note:** Delivery of an SMS message can not be guaranteed. This is a limitation of the communications network providers not with the Dedicated Micros Digital Sprite 2.

The typical process for SMS messaging is:

The Digital Sprite 2 will send a message to the mobile phone. This can be on receipt of an alarm or manually initiated.

The operator then has the option to send a message back to the Digital Sprite 2 or log onto the unit using the web interface or Viewer software.

If the Operator is remote they can send a message back to the Digital Sprite 2 to action the Server to send an alarm message to a remote viewing application. The Digital Sprite 2 will send a message to the remote monitoring station which includes the information in the text it has received.

The remote station can then access the Digital Sprite 2 to acknowledge and action the alarm.

To enable the serial port for the SMS feature:

1. Select **System -> Serial Ports & Telemetry**.
2. Using the drop down list on the associated Communication port (**Serial 1** if dial on alarm is enabled) select **PPP**.
3. Select the relevant modem from the **Modem/TA** drop down list, if your modem is not supported then you will need to add the modem to the **modem.ini** file.
4. The **serial standard settings** for the selected modem will automatically be allocated, however if this is incorrect you can change these for:
  - Baud rate, Parity, Data bits, Stop bits, Flow control.
5. Remember to save the configuration by selecting **Save Settings!**

To edit the modem.ini file for **modems which are not identified in the drop down list** of supported modems:

1. Using an **FTP client** application connect to the Digital Sprite 2.
2. Locate the **etc** directory and expand.
3. Locate the **modem.ini** file.
4. Highlight and press the **right mouse button**, select **edit**.
5. Enter the information for the GSM Modem being used, an example of the information is shown below:

```
[N30HSCSD]
name=Nokia30HSCSD
reset=AT&F
init=ATE0&C1&D2S0=1+CMGF=1;+CBST=16,0,1
save=AT&W
negate_dtr=0
```

To configure the SMS information to allow a text message to be transmitted on receipt of an alarm:

1. Select **Network -> SMS-Setup**.
2. Enter the **GSM destination number** of the mobile phone, this should be entered in international format including the country code.
3. It is possible to make the Digital Sprite 2 into an **SMS Server** by enabling the SMS Server option. If this has been enabled then you need to enter the **destination URL** or **IP address** of the Digital Sprite 2. This will allow the message to be sent from a Digital Sprite 2 to a Digital Sprite 2.
4. Enable the operations that are applicable to your application; **Report startup, alarm, camera fail**, and **VMD activation**.
5. **Verbose messages** must be enabled to ensure the text message is in a human readable format. Tick the box adjacent to the relevant function.
6. Enter the **callback profile** in 0 and 1, this is the route the text message from the Operator will take when sending a message back to the Digital Sprite 2.
7. Enter the **password** to enable **SMS commands** to be initiated. This password will be included in the text message from the Operator.
8. Select the **advanced setup** button to enter details on the **GSM module** that will be used in the system.
9. Enter the **service centre number**, this is the network service centre number of the mobile phone, this information can usually be found on the phone in **Messages -> Message Settings -> Profile -> Message Centre Number** based on a Nokia phone menu.
10. Enter the **pin number** for the **SIM card** (if applicable).



**Note:** If a pin has been set the number must be entered each time changes are made to this page and is submitted (Save Settings).

11. Enter the **GSM/SMS port number** that will be used for this function to operate on.
12. Remember to save the configuration by selecting **Save Settings!**



**Note:** For configuration via the OSD refer to Appendix G where all menu options are described.

### GSM SMS Reporting Administration

Destination Number:	<input type="text"/>
Destination URL:	<input type="text"/>
SMS Server	<input type="checkbox"/>
Report startup	<input type="checkbox"/>
Report alarms	<input type="checkbox"/>
Report camera fail	<input type="checkbox"/>
Report VMD Activation	<input type="checkbox"/>
Verbose messages	<input type="checkbox"/>
Callback profile 0	<input type="text" value="ETHER"/>
Callback profile 1	<input type="text" value="ETHER"/>

Function	Description
Destination Number	This is the GSM number for the mobile to receive the message. The format should be entered in international format including the country code and local area code.
Destination URL	This can be the URL or the IP address of the SMS Server when utilising SMS over TCP/IP. The messages will be sent over an Ethernet link if present, alternatively it will be sent over the GSM network.
SMS Server	This will enable the Digital Sprite 2 to accept and log SMS messages. <b>Note:</b> The Verbose option must not be enabled when this option is selected.
Report startup	This will enable the Digital Sprite 2 to transmit a message on power up of the unit.
Report alarms	Sends a text message on receipt of an alarm via the onboard or additional alarm inputs.
Report camera fail	If any of the enabled video inputs on the Digital Sprite 2 does not detect a 1 volt peak-to-peak signal then the unit will send a SMS message.
Report VMD activation	If VMD is identified on any of the enabled video inputs the unit will send a SMS message.

Function	Description
Verbose messages	This will send a SMS message in a readable format to a mobile devices (e.g. mobile phone).  <b>Note:</b> This format is not supported in standard SMS Servers.
Callback profile	This identifies the route the return message, from the Operator mobile device, will take. The return message must contain the SMS command password, callback IP address (IP address of the remote PC with the Viewer application) and the command to action the Digital Sprite 2 to call the remote station.
SMS command password	This is the password to enable the SMS commands to be initiated and will be included in the return text from the Operator.
Last signal strength	This is a read only section and identifies the signal strength of the GSM module.
Last bit error rate	This is a read only section and will detail the error rate of the GSM module.

Function	Description
Service Centre Number	This page is specific to the GSM module connected to the Digital Sprite 2, this is the number for the service centre that will be responsible for the SMS message.
GSM PIN Number	This is the pin code for the SIM card in the mobile device that will receive the SMS message. If any changes are made to this page the Pin number must be re-entered each time.
GSM/SMS Port	This is the port address that will be used for the SMS message to be transmitted/received, the options are Serial 1 or Serial 2.

## SMS Message Format

There is a specific format for the text message that is returned to the Digital Sprite 2, the format is detailed within this section. It is important that the message format be strictly adhered to for this function to operate. Further message formats can be found in Appendix F along with information that can be obtained from the Digital Sprite 2.

CALLBACK?<password>&<destination>&<profile>&<text>

password	This is the SMS password that has been identified in the SMS Set-up page and enables the command to be executed.
destination	This is the IP address or DNS name of the Viewing application that has telserver/Viewer (Telnet listener) enabled to receive the message.
profile	This can be a number or name that has been configured on the SMS Set-up page, this will be via the serial port or Ethernet connection.
text	This is the text message that will be sent to the remote viewer informing the Operator of an incident and therefore should be meaningful.

## How to Configure Email Settings



The Digital Sprite 2 can automatically transmit and e-mail to an SMTP Server under numerous conditions; on start up of the Digital Sprite 2, on receipt of an alarm, camera failure and notification of VMD.

This allows the Digital Sprite 2 to be installed in unmanned applications where a Remote Monitoring Station (or Manager, etc) would be notified, by e-mail, if any of the above conditions occur.

To configure the settings to allow e-mails to be transmitted:

1. Select **Network -> Email**.
2. Enter the **connection profile**; this can be Ethernet if the e-mail is to be transmitted over the LAN or WAN or named profile if using a dial up connection.
3. Enter the **IP address** or the **DNS name** of the **SMTP Server** the e-mail will be sent to.
4. Enter the **e-mail address** that the **SMTP server** should **forward** the e-mail to.
5. If applicable **enter the display name** for the e-mail address.
6. Enter the **e-mail address** that the recipient is to **reply to**, this is only applicable if a reply is required and must be filled in for this to happen.
7. If applicable enter the **display name** of the reply e-mail address.

8. It is possible to identify where the **e-mail** has be **sent from**, this is optional if this are is left empty the video server will use the system name & DNS name to create a sender name.



**Note:** The Digital Sprite 2 can not receive e-mail replies but this must be a valid e-mail address for an SMTP Server.

9. The Digital Sprite 2 can be forced to send an e-mail under numerous conditions; **start up** of the Digital Sprite 2, on **alarm** (this must also be enabled in Alarm Zone page), **camera failure** and **VMD activation** (this must also be enabled in the Alarms/VMD page). Place a **tick** against the actions that are applicable to your systems functional requirements.

10. Place a **tick** in the **e-mail log** box to ensure ever e-mail transaction is added to the system logs.

11. Save your configuration by selecting **Save Settings!**



**Note:** For configuration via the OSD refer to Appendix G where all menu options are described.

Function	Description
Connection Profile	It is possible for the e-mail to be transmitted via the Ethernet network or dial up connection. This setting presumes that a modem has been connected or configured and the Digital Sprite 2 is connected to a LAN or WAN and allocated a valid IP address.
Mail Server	This is the IP address or DNS name of the SMTP Server that the e-mail from the Digital Sprite 2 will be sent to. The SMTP server will then forward this onto the recipient. <b>Note:</b> You must ensure the DNS Server address in the Network Settings is correctly configured to be able to use DNS instead of the IP address.
Recipient	This is the e-mail address and display name of the intended recipient of the e-mailed image.

Function	Description
Reply to	This field must be configured if the recipient is to reply to an e-mail. The Digital Sprite 2 does not accept e-mails so this must be a valid e-mail address.
Sender	These optional fields indicate the source of the e-mail notification. If the fields are left blank the Digital Sprite 2 will use the system name & DNS name to create a sender name.
Email reports	These are the conditions under which the Digital Sprite 2 will transmit and e-mail; when the Digital Sprite 2 has been reset, when an alarm zone has been triggered, if any of the video inputs has detected camera failure, if VMD has been identified on any of the enabled video inputs.
Email Logging	A log can be created for every e-mail transaction that the Digital Sprite 2 issues.

## How to Protect or Un-protect Images



Images stored on receipt of an alarm can be automatically protected within the corresponding alarm configuration page.

In addition it is possible to protect images that are stored on the hard disk and have not been protected, or increase the time period allocated for protecting the image.

Alternatively it is also possible to highlight protected recordings and un-protect these so they can be overwritten.

To protect existing recorded images:

1. Select **Alarms/VMD – Alarm Image Protect/Unprotect**, If there are any existing protected images these will be displayed within the **protect image partition summary**.
2. Enter the **start** and **end time** and **date** and select **Protect Images** to display the corresponding recordings.
3. **Highlight** the **recorded file** in the **protect image partition summary**.
4. Enter the **time period** that images are to be protected in the **protect image** option or select **protect images indefinitely** for these never to be overwritten.

To unprotect existing protected images:

1. Select **Alarms/VMD – Alarm Image Protect/Unprotect**.
2. Highlight the **recorded file** in the **protect image partition summary**.
3. Select **un-protect images**, this will remove the protection from the files, release the hard disk space these files were stored in and the files will now be overwritten.



Function	Description
Start Date and time	This allows you to enter the start time and date for the period you wish to search for recorded images.
End Date and time	This allows you to enter the end time and date for the period you wish to search for recorded images.
Protect Image Partition Summary	The recorded files will be displayed within this area. These are then selected to either unprotect or protect.
Unprotect Images	Any images that have been previously protected and are selected in the protect image partition summary section will be unprotected, these files will then be overwritten.

Function	Description
Protect Images	Any images that have not been protected or require the protect period extending can be selected in the protect image partition summary and then the time the images are to be protected can be identified in days.
Protect Images Indefinitely	If images are never to be overwritten the they can be protected indefinitely.

## How to Configure the Alarm Database



The Digital Sprite 2 supports numerous logs which will store information on the actions and processes the Digital Sprite 2 carries out.

As we have identified the alarms and enabled these to function it is necessary to ensure the database can support and register all the configured alarms.

To configure the database parameters:

1. Select **Alarms/VMD -> Database Configuration**.
2. The **last database reset time** will be displayed; this is a **read only** section.
3. The **current number of entries** in the database will be displayed; this is a **read only** section.
4. Enter the **maximum number of entries** for the database file, once this figure has been reached the database will 'wrap round' and start entering over the top of entry 1.
5. To **reset the database** select **Save Settings**, you will then be prompted to reset the database, select **OK** to reset or **cancel**.



Function	Description
Last database reset time	This is a read only section and is generated by the Digital Sprite 2, it identifies the last time that the database was reset.
Current number of entries	This is a read only section and is generate by the Digital Sprite 2, it identifies the current number of entries in the database.
Maximum number of entries	This is the maximum number of events that will be logged in the database. When this figure is reached the database will start overwriting the entries starting at entry 1.

# How to Configure an Alarm Schedule



It's possible to utilise the onboard schedule function of the Digital Sprite 2 to enable and disable alarm triggers and VMD activation and to determine when specific record rates will be enabled. This can reduce unnecessary alarm triggers, e.g. during office hours it would be unnecessary to have VMD active and ensure the correct record rates are set during night, day and weekend time periods.

To Set the Schedule function we will use a typical example,  
 Monday to Friday – Alarms/VMD are not active from 08:30  
 Monday to Friday – Alarms/VMD become active from 18:30  
 Weekend – Alarms/VMD are active all weekend

1. Enter **24:00** in the **Day** box adjacent to **Sunday** and **Saturday**.
2. Enter **24:00** in the **Night** box adjacent to **Sunday** and **Saturday**.
3. Enter **18:30** in the **Night** box adjacent to **Monday, Tuesday, Wednesday, Thursday and Friday**.
4. Enter **08:30** in the **Day** box adjacent to **Monday, Tuesday, Wednesday, Thursday and Friday**.
5. Save the information configured by selecting **Save Settings!**

The example on the menu page shows how the schedule option can be configured.



**Note:** 24:00 -24:00 = Schedule 24 hour enabled, 00:00 – 00:00 = Schedule disabled.

NIGHT Time		DAY Time		NIGHT Time		DAY Time	
Sunday	00:00	Sunday	00:00	Sunday	24:00	Sunday	24:00
Monday	00:00	Monday	00:00	Monday	18:30	Monday	08:30
Tuesday	00:00	Tuesday	00:00	Tuesday	18:30	Tuesday	08:30
Wednesday	00:00	Wednesday	00:00	Wednesday	18:30	Wednesday	08:30
Thursday	00:00	Thursday	00:00	Thursday	18:30	Thursday	08:30
Friday	00:00	Friday	00:00	Friday	18:30	Friday	08:30
Saturday	00:00	Saturday	00:00	Saturday	24:00	Saturday	24:00

E.g. Mon - Fri Alarms/VMD not active at 08:30  
 Mon - Fri Alarms/VMD active at 18:30  
 Alarms active all weekend.

Function	Description
Schedule	This is a seven day schedule that allows alarms and VMD to be enabled or disabled at times during the day.
DAYTime	This identifies the time when the Digital Sprite 2 will switch to Day operation mode.
NIGHTTime	This identifies the time when the Digital Sprite 2 will switch to Night operation mode.

6. If **Weekend** operation is to be active, **enable** the option and configure the **start** and **end** times, weekend settings will be applied to the recorded video during this time period.



Function	Description
Weekend Enabled	Enabling this option will switch the unit to weekend mode settings at the time and date selected.
Weekend Start / End	This identifies the time period when the unit will be in weekend operation mode and weekend settings will be applied.

7. Select the **schedule type** from the drop down list.

8. Disabling the **record schedule rates** would result in the day, night and weekend record settings being replaced by a single 'Rate' record setting.

9. Configure the Operation mode **titles**, defaults are Day, Night and Weekend.

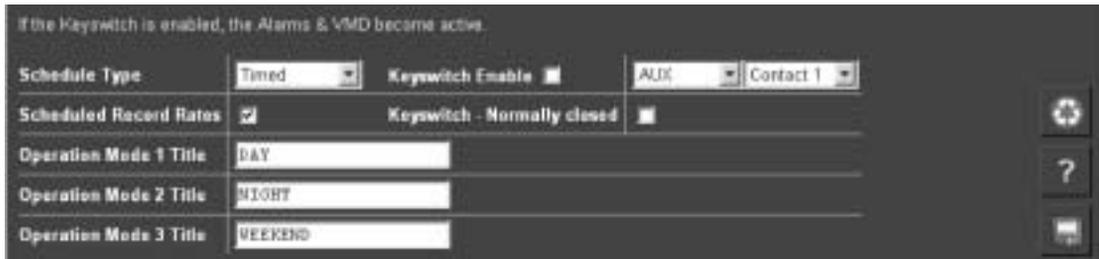
10. If the **keyswitch** is to be functional, enable the option.

11. Select the **input** that will be used to trigger the keyswitch.

12. Select whether the keyswitch is **normally open** (default) or **normally closed**.

11. Save the configuration by selecting **Save Settings!**

It is possible to use a combination of the keyswitch and the schedule option. If an operator forgets to unset the alarms when the keyswitch is disabled the schedule will override the keyswitch at the next set time.



Function	Description
Schedule Type	This identifies the how the schedule will operate, the options available are: <b>Timed</b> - allows settings to be configured for set times during the day, night and weekend operation modes. <b>Zone Control</b> - This enables or disables Night Zone or Weekend Zone settings.
Schedule Record Rates	If this option is disabled then the record settings for day, night and weekend operation mode will be replaced by a single Rate option in the Standard record menus.
Operation Mode 1 Title	This title identifies the mode of operation for Mode 1 (DAY default).
Operation Mode 2 Title	This title identifies the mode of operation for Mode 2 (NIGHT default).
Operation Mode 3 Title	This title identifies the mode of operation for Mode 3 (WEEKEND default).
Keyswitch Enable	When the keyswitch option is enabled it is necessary to identify the input that will be used to trigger the keyswitch, the options are Direct, Aux and Module 1 to 16.
Keyswitch – Normally closed	The keyswitch by default will be configured as normally open, however it is possible to change this to normally closed operation.

# How to Configure Text in Image Functionality



It is possible to integrate the Digital Sprite 2 into a system where text information can be stored with the relevant images for review at a later date, e.g. Retail, Finance.

The Digital Sprite 2 can be configured to search for specific text information, allowing for fast retrieval and review of images. This section is divided into:

Enable text in image on the serial port.

Configuring the `paths.ini` file to specify the communication port and text information.

Enabling and configuring the function using the web pages.

To enable the serial port for text in image.

1. Select **System -> Serial Ports & Telemetry**.
2. Using the **drop down list** associated with the **serial port** that will be connected to the peripheral equipment select **TEXT in Image**.
3. The **serial parameters** will switch to defaults for text in image, however these (Baud rate, Parity, Data bits, Stop bits, Flow control) can be changed as required.
4. Save configuration by selecting **Save Settings!**
5. **Reset** the unit for the settings to be applied.

## Default Settings

- Camera 1 – COM1 (Serial 1)
- Camera 2 – COM2 (Serial 2)
- Camera 3 – COM3 (Serial 3 (Bus A))
- Camera 4 – COM4 (Serial 4 (Bus B))

To configure the communication port.

1. Using an **FTP client** application connect to the Digital Sprite 2.
2. Locate the **letc** directory and expand.
3. Locate the **paths.ini** file.
4. Highlight and press the **right mouse button**, select **edit/open**.

5. Enter the text information in the .ini file, the example details how the file is configured and shows an typical configuration for COM1:

```
# COM1 = tty
# COM2 = term
# COM3 = aux1 or if input_path set to pic0 GPS stored on Port 3
# COM4 = aux2
# TEXT00 = camera 1
# TEXT01 = camera 2
# TEXT15 = camera 16
# input_path - the ports COM1 to COM4 that will receive text
# output_path - the command that will associate text to a camera
# buffer_size - the total number of character stored per line
# prefix - this strips off leading characters received from EPOS
# =====
# COM1 will store text with Camera-1
# =====
[PATH0]
input_path=\tty
output_path=\pipe\TEXT00
buffer_size=80
# prefix=J
```

This shows that the 'text in image' function is enabled and configured for COM1 which means text will be associated with Camera 1 using 80 characters per line with no text filtering.

6. **Save** the configuration and **upload** to the Digital Sprite 2.

7. **Reset** the unit for the settings to be applied.

To enable and configure text in image feature via the web page:

1. Select **Camera -> Text -in-Images**.
2. Identify the **number of lines in the image** that will be stored with the image.
3. Identify the **length** (in characters) of these lines of information; 80 lines in generally full screen width and is the default setting.
4. It is also possible to view the text as well as storing this information. Enter the information on the **number of lines** that will be displayed **below the image** in the live page, this will determine the area that the text will be displayed.
5. Remember to save the configuration information by selecting **Save Settings!**
6. **Reset** the unit for the settings to be applied.



**Note:** Reference to COM1 - 4 is Serial 1, Serial 2, Serial 2(Bus A) and Serial 4 (Bus B) respectively.



Function	Description
Number of lines in Image	This is the number of lines that will be displayed in live and replay (via the web pages) along with the relevant images. The default setting is 10 lines.
Line length	This identifies the length of the lines that will be stored with the image. The default setting is 80 characters which is generally the full screen.
Number of visible lines	To enable the text information to be viewed in the Live page it is necessary to identify the number of visible lines.



**Note:** When viewing video in Live view (Active X only) it is possible to left mouse click over the image and the text information is superimposed over the image.

## How to Configure the Onboard Firewall



The Digital Sprite 2 supports an on-board Firewall to add to the security of the unit. The Firewall can be enabled and work in conjunction with the security applications that are already present in the network.

This feature ensures that unauthorised users can not gain access to the Digital Sprite 2 and therefore have any affect of the operation of the system. With IP address and port filtering the firewall has been designed to let the authorised people access and keep everyone else out.



**Note:** The Firewall function is always enabled on the Digital Sprite 2.

To configure the firewall functionality:

1. If the web Firewall page is not already enabled, enable the Firewall function within **System -> Advanced Features** and **Reset** the unit for the settings to take affect.
2. Select **Network -> Firewall**.

3. Enable the **PING response** option by placing a tick in the adjacent box. Disabling this feature will make the Digital Sprite 2 less visible on the network.

4. Enter the **IP addresses** that can have access to the unit, these can be a range of addresses or a single IP address.

If there is a range of address then enter the first IP address in the sequence followed by /nn where nn is the last IP address in the range. *Refer to IP Address and Subnet Calculation below.*

5. Enter the **subnet** of the network, if a subnet has been specified in the IP address then that will take precedence over this subnet.

6. Identify the **TCP ports** that are **enabled** and available on the Digital Sprite 2, enter the same number in the To and From values if a single port is required.



**Note:** If you attempt to use a port that is not in the list, even if you have a valid IP address you will not gain access to the unit.

7. Enter the **UDP ports** on the system that are **available**, enter the same number in the To and From values if a single port is require.



**Note:** If you attempt to use a port that is not in the list, even if you have a valid IP address you will not gain access to the unit.

8. Save the configuration by selecting **Save Settings!**



**Note:** For configuration via the OSD refer to Appendix G where all menu options are described.



Function	Description
Enable PING response from server	By default this option is enabled and allows the Digital Sprite 2 to be pinged. Disabling this option will make the unit less visible on the network.
Allowed IP address	These are the IP addresses and subnets that the server will allow connections from, i.e. the IP address of the host PC's that will connect to the Digital Sprite 2 to; review video, download information.
<p><b>Note:</b> If you enable this function ensure the IP address of the PC you are using to configure the system is also in the list. If the address is not added then you will be unable to communicate with the Digital Sprite 2 via the network, it is important to take this feature into account when the unit is on a DHCP network, where IP addresses are allocated automatically. If no IP addresses are specified than any IP address can connect to the Digital Sprite 2.</p>	
Open TCP ports	<p>This list identifies the TCP ports that are on the system and available. If a host tries to communicate with the Digital Sprite 2 using a TCP port that is not in the list, even with a valid IP address, the host will not gain access to the unit.</p> <p>The enabled ports can be a range or single port address, if a single port is needed then enter the same port number in the to and from section.</p>

Function	Description
----------	-------------

Open UDP ports	This is the list of UDP ports that are available on the Digital Sprite 2. If a host tries to communicate with the unit using a UDP port that is not specified in the list, even with a valid IP address, the host will not gain access.
----------------	---

The enabled ports can be a range or single port address, if a single port is needed then enter the same port number in the to and from section.

Port, Type, Application, Use	This identifies the default ports and their functionality that is supported on the unit.
------------------------------	--

The following are the default port settings supported on the Digital Sprite 2; this is shown on the Firewall page menu.

PORT	TYPE	APPLICATION	USE
21	TCP	File Transfer Port - (FTP) Connection	Used for miscellaneous archiving video & adds to a remote server or PC.
23	TCP	Terminal (Telnet) Connection	Remote terminal application, allows engineering function to be carried out
80	TCP	HTTP - Web Server Connection	This port is used when streaming video from a Unit or when accessing the WebPages
1025	UDP	Telemetry Control	PTZ commands are passed from the PC to the Unit
2074	UDP	Audio Port	Outgoing and incoming audio is passed over this link
2075	UDP	Audio Port	This port provides the control for audio outgoing and incoming
5201	TCP	Engineering Debug	Click start, RUN, type - telnet 5201

Alternatively it is possible to identify the supported ports and also determine who is connected to the Digital Sprite 2 via a telnet session.

At the prompt enter:

### TCP Ports

The following is an example of the information that is displayed.

```
DU-IP> ttccpp ppoerrttss
Entry 0: socket no 0, myport 2075, <UDP> Daemon
Entry 1: socket no 1, myport 2074, <UDP> Daemon
Entry 2: socket no 2, myport 1025, <UDP> Telemetry Listener
Entry 3: socket no 3, myport 21, <TCP> FTP Server Daemon
Entry 4: socket no 4, myport 5201, <TCP> Engineering Debug Daemon
Entry 6: socket no 6, myport 23, <TCP> Telnet Daemon
Entry 7: socket no 7, myport 80, <TCP> Web Server Daemon
Entry 8: socket no 8, myport 82, <TCP> SMS Server Daemon
Entry 9: socket no 9, myport 5202, <TCP> Daemon
Entry 60: socket no 60 <2>, myport 80, hisport 1498 foreign IP 172.16.100.29
Entry 76: socket no 76 <2>, myport 80, hisport 1712 foreign IP 172.16.100.29
Entry 77: socket no 77 <2>, myport 23, hisport 1661 foreign IP 172.16.100.61
```

## IP Address Range and Subnet

When entering a range of IP addresses in the Firewall it is necessary to calculate the relevant subnet that does not mask out the first IP address to the last IP address in the range. The following shows the figures that are entered in the IP address field and/or the subnet mask.



**Note:** For details on how these figures are calculated please refer to Appendix E.

The address can be written in two ways:

IP address/number of bits no subnet mask – 192.168.3.1/24

IP address and subnet mask – 192.168.3.1 255.255.255.0

If you wanted to add an address range to include IP address 1 to 12, then you would need to find the nearest IP address and subnet that would encompass this requirement, use the table below to assist you with configuring this function.

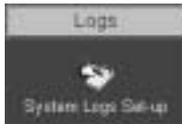
The table shows the address range including the number of bits allocated to the network address, the equivalent subnet mask for this range of addresses and the IP address that will be included in the range, (we will use the IP address of 192.168.3.1 for the example).

IP address	Network address	Included IP Address Range
192.168.3.1/24	255.255.255.0	0 - 255
192.168.3.1/25	255.255.255.128	0 - 127
192.168.3.1/26	255.255.255.192	0 - 63
192.168.3.1/27	255.255.255.224	0 - 31
192.168.3.1/28	255.255.255.240	0 - 15
192.168.3.1/29	255.255.255.248	0 - 7
192.168.3.1/30	255.255.255.252	0 - 3
192.168.3.1/31	255.255.255.254	0 - 1



**Important Note:** A host cannot be allocated an IP address of 0 or 255, which means there are really only up to 254 host addresses available in the example.

# How to Enable System Logs



There are numerous actions that the Digital Sprite 2 can be configured to automatically carry out on receipt of; an alarm, VMD activation, Schedule function, etc. When these triggers are received and the actions initiated then it is possible to log this information within the Digital Sprite 2 System Logs.

By default the Digital Sprite 2 will log illegal file access and telnet/FTP users, to enable the other functions:

1. Select **Logs -> System Logs Set-up**.
2. If connect/dial using **PPP** has been configured within the alarm and VMD pages enabling this option will **log** all the PPP actions.
3. If the Digital Sprite 2 has been configured to transmit file to an **FTP** server enabling this function will log all FTP transactions.
4. Save the configuration by selecting **Save Settings!**



**Note:** For configuration via the OSD refer to Appendix G where all menu options are described.



Function	Description
Log PPP connections	This enabled logging of WAN connections using the PPP ports and records the IP address, the profile used and the local time of the attempted connection.
Port, Type, Application, Use	This identifies the default ports and their functionality that is supported on the unit.
Log anonymous FTP connections	This identifies when an unauthorised user tries to access the Digital Sprite 2 by entering anonymous in the username or password.
Log illegal file access	Any web access to a CGI protected directory or non-existent file will be logged with an IP address, time and type of action.
Log Telnet/FTP users	This will log users that are trying to gain access to the Digital Sprite 2 using an FTP or telnet session.

# How to Configure Watermarking



The Digital Sprite 2 supports the facility to watermark recorded images. It is also possible to produce a watermark certificate which proves that an image has not been altered or tampered with; this is achieved with the allocation of a unique MD5 signature which will change if the image files are changed.

This process can assist with the audit trail process for digital recorded video. The MD5 signature is a unique signature that is automatically allocated by the Digital Sprite 2 by using file information and generating the unique signature.

To configure and produce a watermark certificate it is presumed that the Tools option has been enabled in the Advanced Features menu:

1. Select **Tools -> Watermark**.
2. Enter the **start time** and **date** for the period that is to be reviewed.
3. Enter the **finish time** and **date** for the period that is to be reviewed.
4. Select **partition information** button, the recorded files within the specified time period will be displayed within the partition information summary.
5. Highlight the **files** (partition) that you intend to allocate a **watermark** to.
6. It is possible to view the **index information** by selecting the get **index info button**, the video index information will be displayed.

Video Index Information

Video partition : c:\video\DDR00002\VID-00153.VID

Index number : 0

File number : 153

Entry	Channel	Attributes	Time	Offset in file
0	0	VID	Thu 06 Jan 2005 13:30:10.590	0
1	0	VID	Thu 06 Jan 2005 13:30:10.740	19136
2	0	VID	Thu 06 Jan 2005 13:30:10.900	38332
3	0	VID	Thu 06 Jan 2005 13:30:11.060	57552
4	0	VID	Thu 06 Jan 2005 13:30:11.220	76776
5	0	VID	Thu 06 Jan 2005 13:30:11.410	96040
6	0	VID	Thu 06 Jan 2005 13:30:11.570	115264
7	0	VID	Thu 06 Jan 2005 13:30:11.730	134488
8	0	VID	Thu 06 Jan 2005 13:30:11.890	153676
9	0	VID	Thu 06 Jan 2005 13:30:12.050	172912
10	0	VID	Thu 06 Jan 2005 13:30:12.210	192080

7. If the Operator that is generating the watermark certificates is to be logged, enter the **report author** information, this will be added to the certificate.
8. Enter the **step size** information; this identifies the 'skip' distance between bytes used in the watermark calculations, default 256 bytes.

9. To generate the watermark codes that will be linked to the partition selected press the **watermark** button.



**Note:** The smaller the step size the longer the calculation process. Do not press any buttons while the Digital Sprite 2 is calculating. The progress of the process is displayed in the status bar.

10. When the watermark codes have been generated a **certificate** must be created by pressing the **create certificate** button, this certificate should then be printed and archived. This should form part of the customer security procedure regarding incidents.



Function	Description
Start Date and time	This is the start time and date for the time period of interest.
End Date and time	This is the end time and date for the time period of interest.
Report author	This will identify the Operator or Administrator responsible for generating the watermark certificate and can be used as part of the audit trail.
Watermark step size	This is the step size in bytes used when calculating the watermark, if the step size is set to 1 then every byte in the in the video partition will be part of the watermark calculation.  <b>Note:</b> The smaller the step size the more information that is to be processed. The process time will increase, this is displayed in the status bar.
Partition Information Summary	This is the area when the partition information within the set time and date will be displayed. Each partition can be selected by highlighting the file.
Partition Info	This button is selected for the Digital Sprite 2 to search for the partition information within the set time and date. The partitions are then displayed in the partition information summary area.

Function	Description
Get Index info	This allows you to obtain the index information of the selecting partition.
Watermark	This will generate the unique MD5 signature for the selected partition. This watermark can be used as part of the audit trail to identify that the images have not been changed or tampered with.
Create Certificate	Once the watermark has been generated this allows a certificate with all the information on the watermark to be created, it is possible to print this certificate.

## How to Configure the Webcam functionality



Any of the video inputs on the Digital Sprite 2 can be made available to be transmitted to a webserver via FTP. These images can then be incorporated into a web page and accessed via a standard web browser.

This function gives users the opportunity to incorporate video images into their Corporate web site.

Examples of where this can be incorporated are:

Company that utilise the Digital Sprite 2 for their building security but also route some strategically placed cameras to their intranet allowing employees access to the video, possible to view the car park.

Theme Parks that again use the Digital Sprite 2 for their site security but link some of the cameras to the Internet site to allow potential visitors to gauge how busy the Park is and when they should visit.

This section has been divided into:

Enabling the feature, identifying server information and enabling the cameras  
Configuring the FTP session details.

To enable and configure the webcam feature:

1. Select **Network -> Webcam Set-up**.
2. Enter the **FTP Server** details; this can be the IP address, URL or domain name of the Server that will forward the images to the web pages. This link is usually provided by the Internet Service Provider (ISP).
3. Enter the **root directory** on the FTP server where the files will be saved.
4. Enter the **image directory** information; this is the path within the root drive that will store the images that are being FTP'd to the Server.

5. Enter the **prefix** information that will precede the image file when uploaded to the FTP Server, an example is 'cam\_' which would create a file name of cam\_01.jpg.
6. Enter the **username** and **password** to allow the files to be uploaded to the FTP Server, this will be given to you by the Network Administrator.
7. Enter the **update interval** in seconds, this identifies the time between updated files being transmitted from the Digital Sprite 2 to the FTP Server. The speed and cost of the network connection being used should be taken into account when setting this time period.
8. Enable the **video input(s)** that are to be made available for webcam functionality. Images from these inputs will be transmitted to the FTP Server for integration into web pages.
9. Save the configuration information by selecting **Save Settings!**



**Note:** For configuration via the OSD refer to Appendix G where all menu options are described.

Function	Description
FTP Server	This is the IP address, URL or Domain Name of the FTP Server. Images will be uploaded from the Digital Sprite 2 to this FTP server as time intervals specified.
FTP Root Drive/Directory	This is the main/root directory on the FTP server where the image directory will be located.
FTP Image Directory	This directory will be created when the initial image is uploaded to the FTP Server, it is the directory where all images will be saved on the server.
Image Filename Prefix	This is an identifier for images sent from this Digital Sprite 2 and will be stored as a prefix to the file name.

Function	Description
Username	To gain access to the FTP server it is necessary to go through an authentication process this is the username that will allow the images from the Digital Sprite 2 to be uploaded to the FTP Server.
Password	To gain access to the FTP server it is necessary to go through an authentication process this is the password that will allow the images from the Digital Sprite 2 to be uploaded to the FTP Server.
Update interval	This is the minimum update interval between each image that is transmitted from the Digital Sprite 2.
Camera selection	This allows you to enable the video inputs that will be accessible for upload to the FTP Server.

To enable the webcam connection information:

1. Enable the **single FTP session** so the FTP link from the Digital Sprite 2 to the FTP server is **permanently up**. If this is not enabled then an FTP session will need to be established every time the Digital Sprite 2 needs to transmit images.
2. Enable **batch transfer** and images will be transmitted to the FTP Server in a '**batch**', e.g. the Digital Sprite 2 will take 'snap shots' from video inputs 1, 2, 4 and send these in a single batch to the FTP Server. If this is **disabled** then the Digital Sprite 2 will transmit files **individually**. The delay between batch files being transmitted is the **update interval**, e.g. every 10 seconds the Digital Sprite 2 will send images from video inputs 1, 2, 3. If batch is disabled then the update interval is the time between the Digital Sprite 2 sampling an image from one input to the next, e.g. the Digital Sprite 2 will transmit an image from input 1, 10 seconds later it will transmit and image from input 2, etc.
3. Select the **resolution** of the image that will be transmitted to the FTP Server, the files sizes that are applicable to this resolution are displayed. The file size should be taken into account with reference to the speed and type of network link.
4. Enable the **Webcam** functionality for this feature to operate, **tick** the box which is appropriate to your application; **disabled, enabled when system SET, enabled when system UNSET** or **always enabled**.
5. Remember to save the configuration by selecting **Save Settings!**



**Note:** When Developers are utilising the JPEG images that are provide from the webcam mode, the destination web page must have a video window with a 4:3 aspect ration to allow the video image to be displayed correctly.



Function	Description
Single FTP session	This avoids login/logout procedure for each image that is transmitted to the FTP Server. The Digital Sprite 2 will remain connected and logged in to the ISP until the connection is disabled.
Batch transfer	This will transfer all camera images in one batch. If this is selected then the update interval is the delay between all images being updated.
Webcam Resolution	This is the resolution of the images, defined in the Camera Setup Page, that are transferred to the FTP Server. Take into account the speed and type of network connection being used when selecting the resolution.
Webcam Enabled	The webcam functionality can be enabled at specific times (DAY, NIGHT or WEEKEND mode), always enabled or disabled. If the webcam functionality is to be disabled it is recommended that the option also be disabled in the Advanced Features option, refer to How to Enabled System Features above.

## Digital Sprite 2 Tools

There are a number of tools that are supported on-board the Digital Sprite 2 itself. These can be accessed through the web interface and are available for testing system parameters and obtaining information for fault finding.

To access the Tools option:

1. Select the **Configuration** option on the **web interface**.
2. Enter the **username** and **password** (default setting **dm** and **web**).
3. Select the **Tools** tab, the tools available are:

- Video Scope
- Audio Trace
- Relay Test Page
- Watermarking
- System Variables
- Reset

### Video Scope



The Video Scope page shows a trace of the video content (RGB) of the overall image. It will give the RGB values of the selected image.

It is possible to select any of the video inputs on the Digital Sprite 2 to view the video contents. It is also possible to select the resolution of the image and compare the RGB levels.

Clicking within the video image will select a line of video and identify the value for that line rather than the overall image.



Function	Description
Video Input	This is a drop down list of the available video inputs on the Digital Sprite 2.
Resolution	This is a drop down list allowing selection of the resolution being viewed/traced (high, medium and low).
Input Path	This is a drop down list allowing selection between free use or preselector 1 – 4.
V and H Position	When a line of video is selected this identifies the vertical and horizontal position. For the overall image these values will be 0.
Show Trace	This allows the R, G, B trace to be enabled or disabled.
RGB	These are the calculated values for the RGB contents within the whole image or the selected line.

## Audio Trace



It is possible to use the audio trace option to identify if audio is being transmitted or received by the Digital Sprite 2.

To view the audio select the line in or line out buttons, the corresponding audio signal will be traced.

Function	Description
Audio Line Out	This will produce a trace of the audio out line on the Digital Sprite 2. This is represented by a red line.
Audio Line In	This will produce a trace of the audio in line on the Digital Sprite 2. This is represented by a blue line.

# Relay Test Page

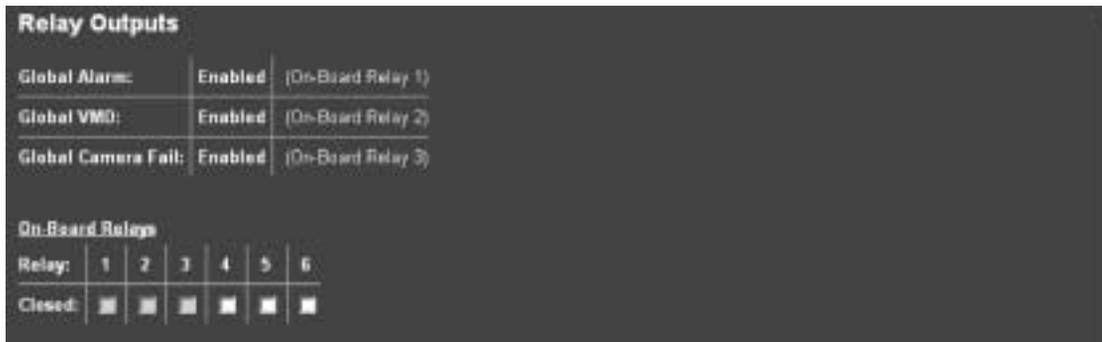


The relay test page allows you to test the onboard relays and the additional relay modules. The Digital Sprite 2 supports three onboard relays and up to two additional relay modules, these modules have sixteen relay connections each.

To test the relay select the tick box adjacent to the relay number, save the configuration. Press the OK button and this will trigger the corresponding relay.



**Note:** If the onboard relays have been configured to have the default settings it will not be possible to test these, the corresponding text box will be disabled.



Function	Description
----------	-------------

Global Alarm – R1	This identifies if the unit has relay 1 enabled for global alarm functionality, the relay will also be disabled for test.
-------------------	---

Global VMD – R2	This identifies if the unit has relay 2 enabled for global VMD functionality, the relay will also be disabled for test.
-----------------	---

Global Camera Fail – R3	This identifies if the unit has relay 3 enabled for global camera fail functionality, the relay will also be disabled for test.
-------------------------	---

Function	Description
Onboard Relays	There are six onboard relays, enabling the corresponding relay will close the output.
Module 1	If an additional relay module has been connected to the 485 bus, this allows the relevant relays to be tested.  <b>Note:</b> The relay will only be initiated when the Save option has been selected.
Module 2	If a second additional relay module has been connected to the 485 bus, this allows the relevant relays to be tested.  <b>Note:</b> The relay will only be initiated when the Save option has been selected.

## Watermarking



This option has already been covered in the Configuration section of this manual; please refer to How to Enable and Configure Watermarking for details of this option.

## System Variable



This page can be used for system diagnostics as it provides a readable overview of the configuration parameters of the Digital Sprite 2. Any information that has been configured and stored on the Digital Sprite 2 will be shown on the file. Typical information is; camera titles, alarm title. It identifies the Value, Variable Name and the Description.



**Note:** This information may be useful when contacting Dedicated Micros for system analysis.

## Reset



This will reset the unit. Remember to save all configuration settings before resetting the unit as information not saved will be lost.

## Reviewing the Digital Sprite 2 Logs

The Digital Sprite 2 can be configured to produce a number of log files, these are for:

- PPP connections
- Anonymous FTP connections
- Illegal file access attempts
- FTP and telnet users



Configuration of these logs is detailed in the Configuration section of this manual. The logs that are generated can be viewed via the web interface on the Digital Sprite 2.

To access the logs:

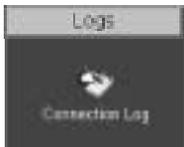
1. Select **Logs**, to enable the logs select **System Log Set-up** enable the logs that are required and select **Save**.

2. The logs can now be accessed these are:

- Connection Log
- Anonymous FTP Log
- Security Log
- e-mail Log
- Sent Message Log
- FTP Download Log
- Logfile
- Logfile Backup
- Archive

3. To **review** the files select the corresponding option, the information will be displayed on screen.

### Connection Log



This log details all FTP and telnet connections made to the Digital Sprite 2.

Telnet and FTP can be allocated a username and password by enabling and configuring the option within the **USER.ini** file, this file registers all the information on the User name, IP address of the remote PC, time of transaction.

Having this log containing the above information ensures ease of identification of Operators/Administrators that have logged into the system, the following shows typical log information;

*Wed Jun 02 10:49:16 2004 (+0100): FTP User [dm1] logged in*  
*Wed Jun 02 10:49:16 2004 (+0100): Foreign IP 172.16.100.65*  
*Wed Jun 02 10:49:16 2004 (+0100): Socket no 15, myport 21, hisport 1083*  
*Wed Jun 02 10:53:20 2004 (+0100): Telnet User [dm1] logged in*  
*Wed Jun 02 10:53:20 2004 (+0100): Foreign IP 172.16.100.65*  
*Wed Jun 02 10:53:20 2004 (+0100): Socket no 24, myport 23, hisport 1199*  
*Wed Jun 02 10:53:53 2004 (+0100): FTP User [dm1] logged in*  
*Wed Jun 02 10:53:53 2004 (+0100): Foreign IP 172.16.100.65*  
*Wed Jun 02 10:53:53 2004 (+0100): Socket no 18, myport 21, hisport 1235*

## Anonymous FTP Log



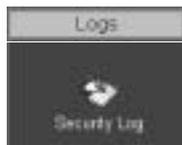
The FTP function on the Digital Sprite 2 is password protected, however it is possible to disable the password allowing any user access to the unit via FTP.

If the password is disabled then any user accessing the Digital Sprite 2 will be logged in the Anonymous FTP log.

A typical example of the log is shown:

*Wed Jun 02 10:56:45 2004 (+0100): FTP User [anonymous] logged in*  
*Wed Jun 02 10:56:45 2004 (+0100): Foreign IP 173.16.85.25*  
*Wed Jun 02 10:56:45 2004 (+0100): Socket no 18, myport 21, hisport 1235*

## Security Log



The Security Log identifies the users that have attempted to access the Configuration pages or any password protected page on the Digital Sprite 2 Web interface and have entered an incorrect password.

The information logged is:

- The action requested and status
- Time and date
- IP address
- Port information

This information can be used to monitor the connections to the Digital Sprite 2 and identify unauthorised actions.

The following shows typical log information;

*Attempt to access to frmpages\index.html at Tue Jun 08 12:43:04 2004 +0100, action GET Authentication fail  
Foreign IP 172.16.50.60  
Socket no 22, myport 80, hisport 12226*

*Attempt to access to scripts\root.exe at Tue Jun 08 13:50:35 2004 +0100, action GET file does not exist  
Foreign IP 172.16.50.60  
Socket no 23, myport 80, hisport 1049*

## E-mail Log



This log holds information on the e-mails sent from the Digital Sprite 2 on receipt of an alarm.

It follows the complete transaction from receipt of alarm to acknowledgement that the e-mail has been sent and the SMTP link has been dropped.

The following shows a typical e-mail log, it contains the sending address, the recipient address, the mail server information (IP address or name) and the reason for the mail, in this example Camera 3 has failed:

```
Sending message to jsmith@dmicros.com at Wed Jun 30 14:21:26 2004 +0200  
220 heron.jbloggs ESMTP Server (Microsoft Exchange Internet Mail Service 5.7.2653.13) ready  
HELO DS2  
250 OK  
MAIL FROM:<DS2@DS2>  
250 OK - mail from <DS2@DS2>  
RCPT TO: <jsmith@jbloggs.com>  
250 OK - Recipient <jsmith@jbloggs.com>  
DATA  
354 Send data. End with CRLF.CRLF  
Date: Wed, 30 Jun 2004 14:21:32 +0200  
X-Mailer: ADH SendMail V1.0  
MIME-Version: 1.0  
To: jsmith@jbloggs.com (John Smith)  
From: DS2@DS2  
Subject: System Exception  
Content-Type: text/html; charset=us-ascii;  
Content-Transfer-Encoding: 7bit  
<!doctype html public "-//w3c//dtd html 4.0 transitional//en">  
<html>  
Site-Id: DS2<br>  
System-Exception: Camera fail 3 at Wed Jun 30 14:21:26 2004 +0200<br>  
</html>  
250 OK  
QUIT 221 closing connection
```

## Sent Message Log



This logs all the SMS message information. There are various options that can be configured to allow an SMS message to be sent; start up, alarms, etc.

The Sent Message Log, logs the information on the message sent including; the time and date, sender and receiver details and the message that was sent.

The following shows a typical SMS message log for when the system starts up after power down or reset.

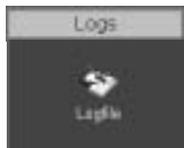
```
Fri Mar 12 12:05:26 2004 +0000
SMS to: 07970972823
SMS message: STARTUP, TVDEMO, Fri Mar 12 11:15:06 2004 +0000, 0.0.0.0
SMS response: STARTUP, TVDEMO, FRI MAR 12 11:15:06 2004 +0000, 0.0.0.0
```

## FTP Download Log



The Digital Sprite 2 can be configured to manual or automatically trigger and FTP download of images. These downloads are logged and stored with the FTP Download Log for future analysis.

## Logfile



The Logfile stores all information on every action that is carried out by the Digital Sprite 2; when alarms are received and actioned, resets, failed outward bound alarm connections, etc.

This is the current file and will continue to store data until it reaches its maximum size limit (typically 1Mb). This file then writes over the top of the Logfile Backup and becomes the backup file and a new logfile is created.

This ensures current and recent information is always available.

The information detailed is; Time and date, Reset Code and Reason, Connection-status, Site and ARC ID.

The following is typical log information:

```
#
System-Start : at 15:11:39 on 24-06-2004 UTC
System-Halt : at 15:11:28 on 24-06-2004 UTC
Restart code : 100
Restart reason : Controlled user RESET from Telnet or the webpages
Alarm-Log : Alarm initiated : Zone 1 at 15:11:59 on 24-06-2004 +0100
Connection-Status: request connection for Alarm Reporting at 15:11:59 on 24-06-2004 +0100
Connection-Status : Connection to 172.16.100.12\Ethernet at 15:11:59 on 24-06-2004 +0100
Site-Id: DS250
Arc-ID: DS2-50
System-Status:
Local-IP: 172.16.89.50
Activating-Channel: 3
Response-Images: 1
Response-Area: Zone 1
Response-Level: GREEN
Alarm-Time: 15:11:59 on 24-06-2004
Rec-Index: 14:11:59 on 24-06-2004
Connection-Status : Connection closed at 15:11:59 on 24-06-2004 +0100
#
```

## Logfile Backup



This file is updated every time the Logfile reaches its maximum capacity. The Logfile will automatically write over the top of the existing Logfile Backup to create a file containing information that occurred recently.

Along with the Logfile this ensures the current information and most recent information is available for analysis.

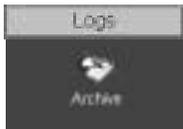
The following is a typical example of the information held within the Logfile Backup.

```
System-Start : at 15:47:41 on 04-06-2004 UTC
System-Halt : at 15:47:30 on 04-06-2004 UTC
Restart code : 100
Restart reason : Controlled user RESET from Telnet or the webpages
System-Status : Standard UNSET recording selected by timer at 15:47:42 on 04-06-2004 +0100
System-Status : Standard UNSET recording selected by timer at 15:47:42 on 04-06-2004 +0100
System-Status : Standard UNSET recording selected by timer at 15:47:42 on 04-06-2004 +0100
System-Status : Standard UNSET recording selected by timer at 15:47:42 on 04-06-2004 +0100
System-Status : Standard UNSET recording selected by timer at 15:47:43 on 04-06-2004 +0100
System-Status : Standard UNSET recording selected by timer at 15:47:43 on 04-06-2004 +0100
```

This is an example of the details that are contained in the logs; this shows an unauthorised user trying to access the Digital Sprite 2 using an FTP connection.

```
Sat Apr 24 05:53:50 2004 (+0100): FTP FAILED LOGIN User: [test] Password: [test]
Sat Apr 24 05:53:50 2004 (+0100): Foreign IP 62.214.19.65
Sat Apr 24 05:53:50 2004 (+0100): Socket no 82, myport 21, hisport 4953
Sat Apr 24 05:53:50 2004 (+0100): FTP FAILED LOGIN User: [test] Password: [test12]
Sat Apr 24 05:53:50 2004 (+0100): Foreign IP 62.214.19.65
Sat Apr 24 05:53:50 2004 (+0100): Socket no 83, myport 21, hisport 4999
Sat Apr 24 05:53:50 2004 (+0100): FTP FAILED LOGIN User: [test] Password: [test123]
Sat Apr 24 05:53:50 2004 (+0100): Foreign IP 62.214.19.65
Sat Apr 24 05:53:50 2004 (+0100): Socket no 84, myport 21, hisport 1049
Sat Apr 24 05:53:50 2004 (+0100): FTP FAILED LOGIN User: [test] Password: [123]
Sat Apr 24 05:53:50 2004 (+0100): Foreign IP 62.214.19.65
Sat Apr 24 05:53:50 2004 (+0100): Socket no 85, myport 21, hisport 1071
```

## Archive



The archive log shows the following information.

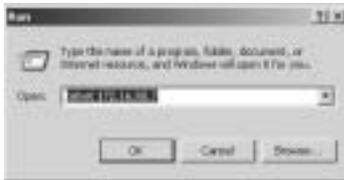
```
#-----
Dest  CD
From  Thu 30 Jun 2005 17:28:47
To    Thu 30 Jun 2005 17:30:52
File  C:\video\DIR00000\VID00002
Wmark 220B03756ECSA22579E44746F0256662
File  C:\video\DIR00000\VID00003
Wmark 97E0D7D1672CD3A0E37090894E49163
```

## Appendix A

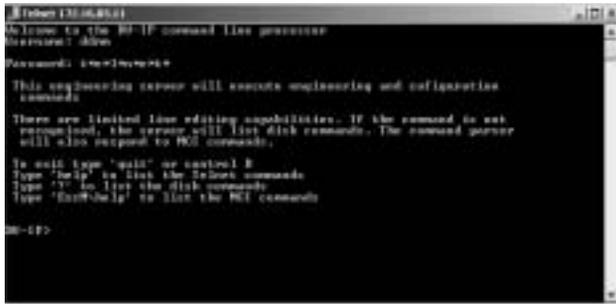
### Reset using Telnet

An alternative option for resetting the Digital Sprite 2 is to connect to the unit using telnet.

1. Go to **Start -> Run**.
2. Enter **<telnet <IP address of Server>>**.



3. You will be prompted for a **username** and **password** (default **dm** and **telnet**) and press return.



**Note:** Echo is enabled on the Digital Sprite 2 for telnet.

4. Type **<reset>**, the Digital Sprite 2 will reset itself and will not be available for a few minutes.

## Appendix B – Digital Sprite 2 .ini Files

### Editing the ini Files using FTP Client Application

There are a number of parameters that can be configured within the ini files on the Digital Sprite 2. This section details the files, their function and how these are configured.

To edit and configure these files on the Digital Sprite 2 you will require:

- FTP communication to be enabled on the Digital Sprite 2
- Valid FTP username and password
- FTP Client software application
- Connection via the Ethernet network to the Digital Sprite 2

The following steps give an example of how to create an FTP session with the Digital Sprite 2 to configure these files, take note this may differ from the process of the FTP software you are utilising.

1. Launch the **FTP client** software.
2. You will need to **create a site** for the FTP link, enter the **IP address** of the Digital Sprite 2, enter the **FTP username** and **password**.



3. Select the **Connect** button to make the connection.

4. If the connection is successful you will be issued a **connection prompt**.

```

Response: 200 Command okay
Command: TYPE A
Response: 200 Command okay
Command: LIST
Response: 150 File status okay; about to open data connection.
Response: 226 Closing data connection. Transfer succeeded
Status: Directory listing successful
  
```

5. Click **OK**.

6. You will be presented with the directory structure on the Digital Sprite 2, locate and select the **etc** directory in the root drive.

Filename	Files	Date	Time	Fig
..				
adst.ini	926	10/03/2005		
ast.ini	826	10/03/2005		
ast-r.ini	772	10/03/2005		
ast-r2.ini	1336	10/03/2005		
ast-r.ini	755	10/03/2005		
ast-r.off	1247	10/03/2005		
ast-r.off	748	10/03/2005		
ast.ini	732	10/03/2005		
ast.ini	847	10/03/2005		
demomc.ini	2526	10/03/2005		
est.ini	878	10/03/2005		
estrod1.ini	889	10/03/2005		
gnt.ini	692	10/03/2005		

7. The following files are all stored in the etc directory.

..				
adst.ini	926	10/03/2005		
ast.ini	826	10/03/2005		
ast-r.ini	770	10/03/2005		
ast-r2.off	1336	10/03/2005		
ast-r.ini	755	10/03/2005		
ast-r.ini	1247	10/03/2005		
ast-r.off	748	10/03/2005		
ast.ini	732	10/03/2005		
ast.ini	847	10/03/2005		
demomc.ini	2526	10/03/2005		
est.ini	878	10/03/2005		
estrod1.ini	889	10/03/2005		
gnt.ini	692	10/03/2005		
gnt_1.ini	877	10/03/2005		
gnt_1.ini	862	10/03/2005		
gnt_1.ini	862	10/03/2005		
gnt_1.ini	873	10/03/2005		
gnt_1.ini	869	10/03/2005		
gnt_2.ini	907	10/03/2005		
gnt_3.ini	866	10/03/2005		
gnt_4.ini	878	10/03/2005		
gnt_5.ini	864	10/03/2005		
gnt_7.ini	868	10/03/2005		
gnt_8.ini	868	10/03/2005		
gntce.ini	729	10/03/2005		
hewal.ini	837	10/03/2005		
hosts	730	10/03/2005		
hosts.dat	729	10/03/2005		

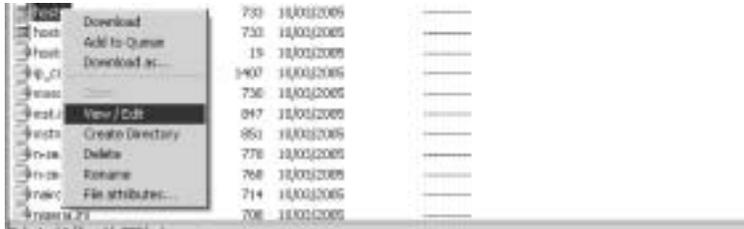
8. There are two ways of opening and editing these files, depending on the file that is selected.

### hosts and profiles

**Highlight** the file, click the **right mouse key** and select **View**.  
The file will be opened and you can edit the information.

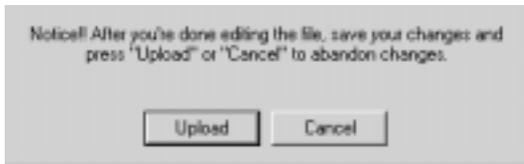
### modems.ini, USER.ini, Vidcfg.ini, WEBUSER.ini

**Highlight** the file, click the **right mouse key** and select **Edit**.  
The file will be opened and you can edit the information.



9. Once you have completed the configuration **Save** the file.

10. When you close the file you will be prompted to upload the file to the Digital Sprite 2, select **Upload**.



**Note:** If you are not prompted ensure you upload the file to the Digital Sprite 2 for the configuration to take affect.

## Structure of the Files

Each of the following files usually has an explanation at the beginning of the file describing what the feature command set is and how they can be edit.

If any of the configuration commands have a comment (#) at the beginning of the line then this has been disabled, remove the comment (#) enables the feature and allows you to configure the settings.

Headings will be included when more that one feature can be configured within the file to identify the command string within that section, e.g. [unlock], [watermarking].

## hosts

This file contains the IP address of the remote monitoring PC that is the point of contact when an alarm is received on the Digital Sprite 2.

The file allows you to identify the name and IP address of the PC.



**Note:** There is a corresponding web page that is the usual interface for configuring this information; however this file has also be supplied.

An example of the information contained in this file is shown.

```
# DS2 Hosts Table 23-January-2004
# The Host is the IP address of the PC the DS2 connects to on alarm.
# <Label/Remote PC Description><IP Address of Alarm Receiving PC>
# The label is used as the description in the Alarm Connection Page on the DS2.
# i.e. the label location1 would be entered in the primary & secondary host name.
# Note:- You must fill in both the primary & secondary host options in the
# Alarm Connection Settings page.
# The Host label/username & password listed in the Hosts Table are "Case Sensitive".
# Hosts Table List
# _____
# <Label/PC Description><IP Address of remote PC>
JohnSmith 10.0.0.50
ARC1      10.0.0.51
Location1 192.168.2.3
NULL     0.0.0.0
```

## modems.ini

The Digital Sprite 2 supports a number of modems that can be configured in the Serial Port & Telemetry web page, however if a modem is not supported then the configuration and operational information for the modem can be added to the modems.ini file.

An example of the information stored in this .ini file is shown:

```
# modem description file
# These modem strings will be installed prior to the fixed strings and can therefore be
# used to update the initialisation strings
# format:
# [code]
# name=descriptive text name
# reset=string to reset device to factory defaults
# init=initialisation string
# save=string to save current settings
# negate_dtr=0 assert DTR line during modem initialisation
# negate_dtr=1 negate DTR line during modem initialisation
# type=0,1,2 type of PPP device
# 0 - modem / terminal adaptor (default)
# 1 - router
# 2 - always on eg GPRS, CDPD
# code is the product code as returned by AT! (if appropriate)
```

```

# name is the descriptive text name (including spaces if required)
# initialisation string is the complete AT string sent to the TA/modem on detection of DTR
# The negate_dtr line allows control over DTR during initialisation. Some modems will
# not respond if DTR is negated whilst others will answer calls unless DTR is negated
# Initialisation requirements - brackets indicate usual settings
# echo off (E0), DCD follows carrier (&C1), DTR causes hangup (&D2)
# useful settings - hardware handshaking, autobaud
[FALCOM_A2]
name=Falcom GSM Phone/Modem
reset=AT&F
init=ATE0&C1&D2&S0S0=1
save=AT&W
negate_dtr=0
[ENFORA]
name=Spider 4 CDPD Modem
reset=AT&F
init=ATE0&C1&D2+WS45=4
save=AT&W
negate_dtr=0
type=2

```

## paths.ini

This file is part of the Text in Image configuration and identifies the communication port on the Digital Sprite 2 that will be connected to the peripheral equipment and also the text information.

Once the associated serial port has been enabled for text in image (refer to the Configuration Section of this manual) it is necessary to enter the relevant information in the paths.ini file so the Digital Sprite 2 is aware of the route (path) of the text information that will be stored with the associated image.

This is an example of the information that is stored within the paths.ini file.

```

# DS2 17-07-03
# -----
# Example ini file to add text for COM1 to COM4
# COM1 = tty
# COM2 = term
# COM3 = aux1 or if input_path set to pic0 GPS stored on Port 3
# COM4 = aux2
# TEXT00 = camera 1
# TEXT01 = camera 2
# TEXT15 = camera 16
# input_path - the ports COM1 to COM4 that will receive text
# output_path - the command that will associate text to a camera
# buffer_size - the total number of character stored per line
# prefix - this strips off leading characters received from EPOS
# =====
# COM1 will store text with Camera-1
# =====
[PATH0]
input_path=\tty
output_path=\pipe\TEXT00
buffer_size=80

```

```
# prefix=J
# =====
# COM2 will store text with Camera-2
# =====
[PATH1]
input_path=\term
output_path=|pipe\TEXT01
buffer_size=80
# prefix=J
profiles
```

When utilising the Connect/Dial on alarm function of the Digital Sprite 2, it is necessary to identify the receiving station information – profile – so the Digital Sprite 2 is aware of the route the alarm is to take. For Ethernet connectivity this can be carried out using the web interface, for connection via a serial port it is necessary to enter the information in the 'profiles' file.



**Note:** Ethernet profiles can also be entered in the profiles file instead of using the web interface page.

```
# DS2 Profiles Table 23-January-2004
# Profile list
# PPP_Link1 = COM2 - Default alarm dial communication port.
# PPP_Link2 = COM1 - Default dial in communication port.
# Ether1 = Alarm connection across an Ethernet Port (Entering Ethernet as the Profile
# will connect over Ethernet)
# Rules
# 1) The IP address range is that of the remote network the DS2 is connecting to.
# 2) IF you set the IP range to 10.0.0.50 with a subnet of 255.255.255.0, the HOST PC
# IP address range will be 10.0.0.51 to 10.0.0.254
# 3) If you only wish to dialling into the DS2, the Phone No.
# 4) The first field <Username & Profile Label> is the description you will use in the
# Alarm Connection Page as the Profile description for the primary & secondary call.
# The Profile label/username & password listed in the Profiles Table are "Case
# Sensitive".
# _____
# Profiles Table List
# _____
```

#<Username>	<Password>	<Port>	<Phone No>	<Address Range>	<Subnet Mask>
Dm	password	PPP_Link2	1234567890	10.0.0.1	255.255.255.0
username	password	PPP_Link1	1234567890	10.0.0.1	255.255.255.0
Test	password	PPP_Link1	1234	10.0.0.1	255.255.255.0

## USER.ini

A number of features on the Digital Sprite 2 are password protected; these have default usernames and passwords. The features that can be enabled for authentication are FTP, telnet and serial communication.

The user.ini file contains the username and password information for these features and is also the interface to enable or disable password protection.

The example shows the default usernames and passwords and which of these features are enabled on the Digital Sprite 2 when shipped from the factory.

```
[FTP]
dm=ftp

[Telnet]
dm=telnet

[Serial]
# dm=serial
# serial=password
```

## vidcfg.ini

The Digital Sprite 2 can support up to 600Gb of internal storage, however in applications that require large storage capacities it is possible to integrate the Dedicated Micros RAID or JBOD storage units into the application.

As the Digital Sprite 2 automatically detects external storage, this file is dynamically updated by the system, the example below shows a typical file configuration.

```
# =====
# DS2 03-03-2004
# =====
# Entries are as follows
# [Partition name]
# path = <pathname>
# file_size = <file_size>
# max_blocks = <max_blocks>
# disk_offset = <day_mask>
# write_type =
# The meanings of the parameters are as follows
# Partition Name: Any ascii name for this partition. Does not perform any other function
# path :The effective MSDOS style root path of the partition directory structure
#     default 3.5" = c:\video
# file_size :The size in bytes of each partition file - default = 50Mbyte (52428800)
# max_blocks : The number of files in this partition. A value of -1 makes the system use the maximum available
# space on the disk specified in path
# default = -1
```

```

# disk_offset : The offset into the disk for the WebPages, Application, Form Files etc; start making video partitions
# specified in 64 KiloBytes blocks default=3200 (Equal to 200 MegaBytes)
# write_type : unbuffered - writes data straight to the hard disk drive. Useful to speed up height images sizes
# written at fast to the HDD.
# NOTE:- This can be wasteful when writing images to HDD i.e. 256 bytes per image on average. buffered -
# Default setting - Buffers data to a fixed 20 KiloByte
# buffer prior to a HDD write. More efficient when writing
# images to the HDD.
# -----
# Drive Definitions A – Z
# -----
# Drive a = 4096 KB Ram
# Drive b = 16 KB RAM
# Drive c = MASTER 3.5"
# Drive d = SLAVE 3.5"
# Drive e = Master 3.5"
# Drive f = Slave 3.5"
# Drive g = Flash Drive
# Drive h to K not used
# Drive l to Z = SCSI Drive ID-0 to 7 LUN-0 to LUN-7
# DS2 will support up to Drive letter Z
# Note:- If multiple logical unit numbers (LUN) are used within the SCSI ID, the DS2 will automatically offset the
logical drives between drive letters L to Z.
# e.g. SCSI ID-0 LUN-0 = Drive L
# SCSI ID-0 LUN-1 = DRive M
# SCSI ID-0 LUN-2 = DRive N
# SCSI ID-1 LUN-0 = DRive O
# SCSI ID-1 LUN-1 = DRive P
# SCSI ID-2 LUN-0 = DRive Q
# -----
# Drive Partition Options
# -----
# 10 MegaByte Partition - 10485760 - For hard disk sizes 160 GB or less
# 50 MegaByte Partition - 52428800 - Default in Bootloader & upto 600 GB
# 100 MegaByte Partition - 104857600 - For hard disk blocks larger that 600 GB
# 200 MegaByte Partition - 209715200 - For hard disk blocks larger than 2000 GB
# -----
# Use the following settings to format Addresses 0 to 6 for drives l: to r: external SCSI drives.
# -----
# [Partition 5]
# path=l:\video
# max_blocks=-1
# file_size=104857600
# disk_offset=3200
# [Partition 6]
# path=m:\video
# max_blocks=-1
# file_size=104857600

```

## WEBUSER.ini

The WEBUSER.ini file contains the username and passwords for accessing the web configuration pages on the Digital Sprite 2.

It also contains the username and password for the Viewer software and the ability to identify which mode of operation can be accessed by a user (live or replay) and which cameras the user can access.

The first example shows the default username and password for accessing the web configuration pages on the Digital Sprite 2.

```
#####  
#                                                                 #  
# DS2 Webuser.ini Version 18th May 2004                          #  
#                                                                 #  
#####  
# _____  
# Note: This file requires a blank line at the end of this file.  
# Note: Line with #— are comments. i.e. #— Username(s) Password(s)  
# _____  
[WebPage Configuration]  
# — Username(s) Password(s) —  
    dm=web
```

This example shows the command string for enabling John Smith to have access to cameras 1 to 16 in live mode, cameras 1 to 8 in replay and the username and password for this Operator when logging in using the Viewer software.

```
#####  
#                                                                 #  
# Provides access for cameras 1 to 16 in live and cameras 1 to 8 in playback #  
# for John Smith                                                #  
#                                                                 #  
#####  
# object=cgi  
live_cams=1-16  
replay_cams=1-8  
#— Username(s) Password(s) —  
john=smith
```

## Editing .ini Files using Backup Utility

The configuration of the files stored on the Digital Sprite 2 has detailed the configuration and editing process using an FTP Client application. If you do not have an FTP Client application the following describes how the Backup Utility can be used to download, edit and upload these files.

1. Launch the **DM Backup** utility that was installed with the Viewer application, select **Start->Programs** and find the **folder** where the software was installed (e.g. **Start -> DVIP Viewer**).



2. You need to **add the site** (Digital Sprite 2) to the **site list**, select **Edit Sites** highlight Sites option in the tree display and right mouse click and select **New Site Folder**.



3. Enter the **unit name**, which will become the folder name and select **OK**.



4. Select the **new folder** in the folder site tree, the **Connections Option** page will be displayed. Enter the **name**, **IP address**, **Site ID** of the Digital Sprite 2. The Site ID must be the same as the Name of the Digital Sprite 2. If used with alarms the name and SITE ID must match the name in the alarm connection page.



5. Select **Save**, this will save all the configuration information.
6. Select the **FTP/Backup** tab, enter the **username** and **password** for **FTP** (default is **dm=ftp**). **Save** the settings.



The files are within the app\_drive\etc folder within this folder.

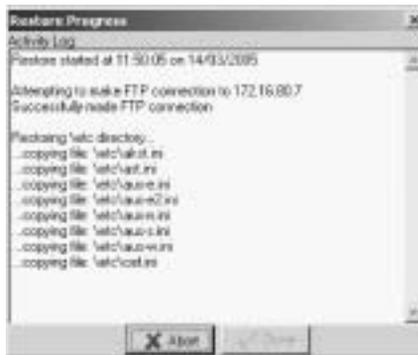


12. **Edit** the file as described in the Configuration section of this manual and **Save** the changes. These files must now be uploaded back onto the Digital Sprite 2.

13. Select **Restore**, the folder that was created earlier in this process will be displayed, **highlight** and select **OK**.



14. The files will be automatically **uploaded** to the Digital Sprite 2, when the process has finished select **Done**.

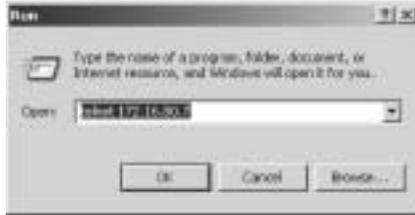


**Note:** If only a small number of the files have been edited it is possible to delete all the other files in the directory and upload the changes files only. This will speed up the process.

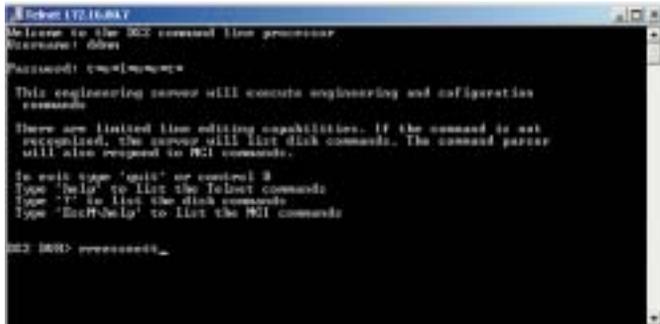
You now need to reset the unit,

15. Select **Start -> Run on your PC.**

16. Type **<telnet IP Address>** (where the IP address is the IP address of the unit you are configuring).



17. Enter the **username** and **password** (default dm=telnet) to open a telnet session with the unit, and type **<reset>** to reset the unit and initialise the edited files.



**Note:** Echo is enabled on the Digital Sprite 2.

## Appendix C – Port Assignment on the Digital Sprite 2

### Port Allocation

It is possible to identify specific ports that will be used for functionality supported on the Digital Sprite 2.

These functions are:

- FTP
- Telnet
- HTTP
- Telemetry Control
- Audio
- Debug

Some of these ports have default settings that will link to the default settings of a standard network infrastructure, e.g. port 21 default port for FTP, port 80 default port for HTTP.

However if these default port numbers have already been allocated to other devices on the network then it is possible to identify alternative port numbers.



**Important Note:** It's important to ensure all devices that are part of the system configuration are all allocated the same port number otherwise communication between the devices will not be successful.

To view the ports that have been enabled and configured on the Digital Sprite 2, select **Network -> Firewall Options**. This details the port numbers, type of connection, application and use.

The screen shot shows the default settings for each of the features that utilises a port number as part of its communication path.

PORT	TYPE	APPLICATION	USE
21	TCP	File Transfer Port - (FTP) Connection	Used for manual/auto archiving video & audio to a remote server or PC.
23	TCP	Terminal (Telnet) Connection	Remote terminal application, allows engineering function to be carried out
80	TCP	HTTP - Web Server Connection	This port is used when streaming video from a LIVE or when accessing the WebPages
1005	UDP	Telemetry Control	FTZ commands are passed from the PC to the Unit
2074	UDP	Audio Port	Outgoing and incoming audio is passed over this link
2075	UDP	Audio Port	This port provides the control for audio outgoing and incoming
5201	TCP	Engineering Debug	Click start, RUN, type - telnet 5201

It is possible to redefine the port allocation for FTP, telnet and HTTP, how this is achieved is detailed in the Configuration section of this manual.

The telemetry control, audio port and engineering debug are default settings and are not configurable; these port numbers must be given to the Network Manager to ensure there are no other devices on the network using these ports.

Using a telnet session it is possible to telnet to a specific port to obtain debug information, for example at the prompt enter:

**Telnet <IP address or Digital Sprite 2> 5201**

This will download debug information on the Engineering port, the following is an example of the information obtained:

```

Telnet 172.16.80.7
4897519: F_SERVER: download relays.html
4897809: F_SERVER: download schedule.html
4898320: F_SERVER: download serial_ports.html
4898836: F_SERVER: download std_rec.html
4899321: F_SERVER: download system_features.html
4899612: F_SERVER: download system_logs.html
4902997: F_SERVER: download text_in_images.html
4903548: F_SERVER: download var_rec.html
4904017: F_SERVER: download vmd.html
4904538: F_SERVER: download vssver.scc
4904678: F_SERVER: download watermarking.html
4905219: F_SERVER: download webcan.html
4906601: F_SERVER: download alarm_inputs.html
4907212: F_SERVER: download alarm_zones.html
4907737: F_SERVER: download audio.html
4908023: F_SERVER: download camera_setup.html
4908534: F_SERVER: download camera_setup_adv.html
4908824: F_SERVER: download confirm_shutdown.html

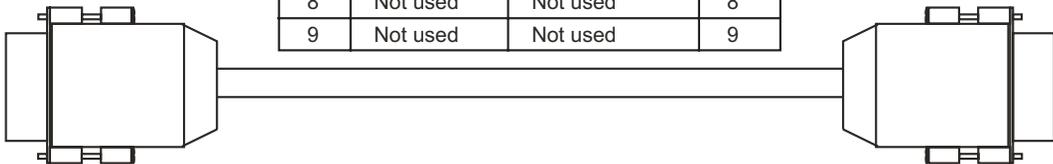
```

## Appendix D – Digital Sprite 2 Serial and Network Cables

### DM RS232 Debug Cable (supplied)

The RS232 Debug cable can be used to connect the PC serially to the Digital Sprite 2 for configuration using a terminal application (such as HyperTerminal™).

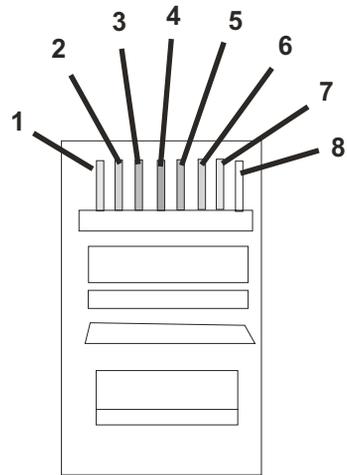
Pin	Colour Code	Pin Assignment	Pin
1	Not used	Not used	1
2	Red	TX	3
3	Blue	RX	2
4	Not used	Not used	4
5	Green	Ground	5
6	Not used	Not used	6
7	Not used	Not used	7
8	Not used	Not used	8
9	Not used	Not used	9



## Straight-through Network Cable

A straight through network cable connects hosts to network devices; PC to switch, Digital Sprite 2 to Switch.

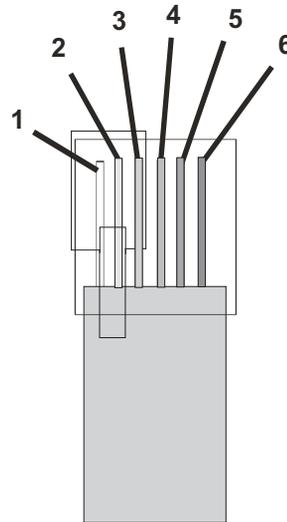
Pin	Colour Code	Pin Assignment	Pin
1	White/Orange	Transmit (+)	1
2	Orange/White	Transmit (-)	2
3	White/Green	Receive (+)	3
4	Blue/White	Not used	4
5	White/Blue	Not used	5
6	Green/White	Receive (-)	6
7	White/Brown	Not used	7
8	Brown/White	Not used	8



## DM 485 Bus Cable (supplied)

The DM 485 Bus cable is supplied for connectivity to peripheral DM devices such as Alarm Modules and Relay Modules.

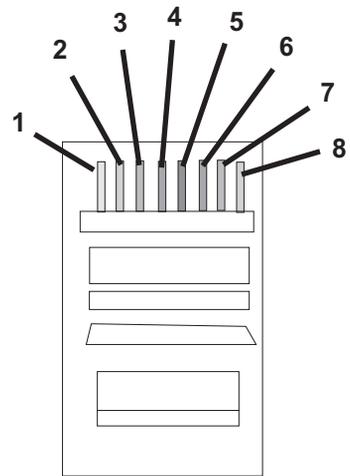
Pin	Colour Code	Pin Assignment	Pin
1	White	Not used	1
2	Black	Ground	2
3	Red	485 bus data A	3
4	Green	485 bus data B	4
5	Yellow	Ground	5
6	Blue	+8V d.c. Supply	6



## Cross Over Network Cable

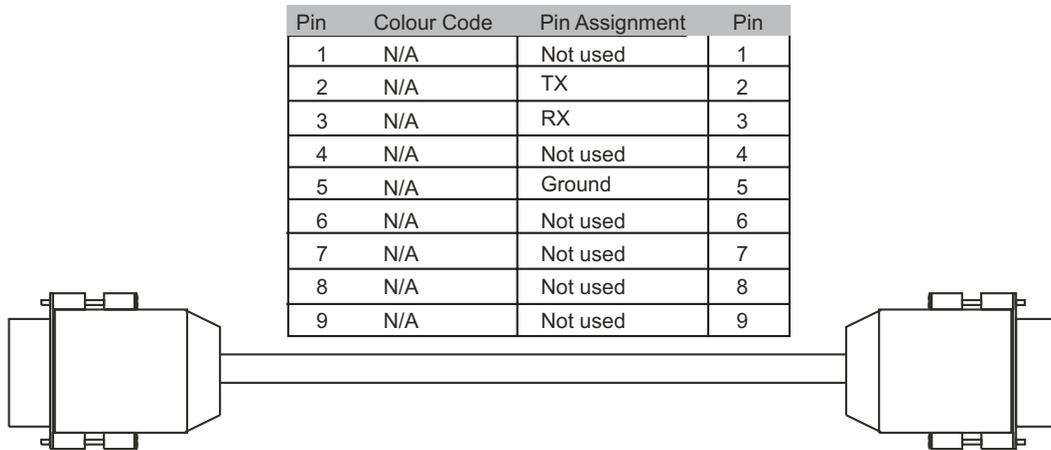
A cross over network cable is used to connect hosts to hosts or network equipment to network equipment, switch to router, PC to Digital Sprite 2.

Pin	Colour Code	Pin Assignment	Pin
1	White/Orange	Transmit (+)	3
2	Orange/White	Transmit (-)	6
3	White/Green	Receive (+)	1
4	Blue/White	Not used	4
5	White/Blue	Not used	5
6	Green/White	Receive (-)	2
7	White/Brown	Not used	7
8	Brown/White	Not used	8



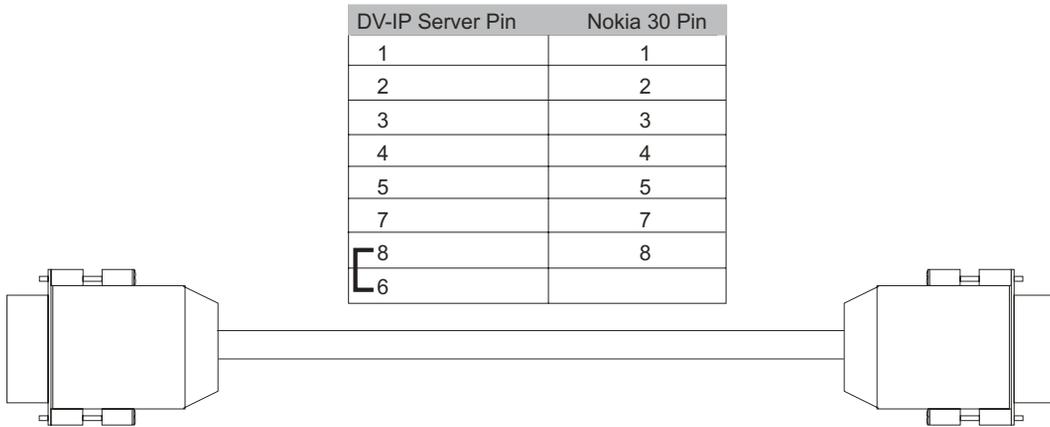
## DM RS232 Null Modem Cable

The null modem cable can be used to connect ancillary devices that require 'handshaking' such as modems, GSM, etc.



# Nokia 30 Cable

This cable is for use from the Digital Sprite 2 to the modem only.



## Appendix E – IP Address Range and Subnets

It is possible to set a range of IP address within the Firewall that will have access to the Digital Sprite 2. The following details how the address range and subsequent subnet is calculated and can be used in conjunction with the Configuration section of this manual.

### IP Address and Subnet Masks

An IP address is a 32 bit address that is read by the network devices (switches, hubs, routers) in a binary format, however to make life simpler for Network Administrator, IP addresses are displayed in a decimal format.

The same applies to subnet masks, these to are 32 bit addresses and are identified by the network devices in binary format, but for written in a decimal format.

The 32 bits are grouped in to four 8 bits (an Octet) to give us the IP address format we are used to:

Binary Format	Decimal Equivalent
11000000.10101000.00000011.00000001	192.168.3.1
11111111.11111111.11111111.00000000	255.255.255.0

The binary format of the IP address uses 1's and 0's and within an octet it is possible to identify 256 decimal numbers from 0 to 255.

128	64	32	16	8	4	2	1	Decimal
1	1	1	1	1	1	1	1	255
0	0	0	0	0	0	0	0	0

An IP address along with its subnet mask is made up of two parts; Network ID and Host ID. If we use our example IP address, 192.168.3.1 we can see the network ID and the host ID;

IP Address	Network ID	Host ID
192.168.3.1	192.168.3	.1
255.255.255.0	255.255.255	.0

Wherever the subnet gives a value of 255 (all 1's) it 'masks' out the IP address octet and therefore represent the Network part of the overall IP address. Hence the reason the above example takes the first three octets as the network ID and the last octet as the host ID.

# Classes of Networks

There are three 'available' classes of networks. There other classes of networks that are reserved and therefore are not 'available' to the general public.

## Class A

The Class A network allocates the first octet to the Network ID and the remaining three octets are the Host ID's. There is also an address range that has been defined for a Class A network. As we use the first octet as the Network ID, we can see from the subnet mask that a Class A subnet 'masks' out the network portion of the address.

Class A Address Range	Subnet Mask	Alternative Format
0.x.x.x	255.0.0.0	0.x.x.x/8
126.x.x.x	255.0.0.0	126.x.x.x/8

### Class A Address Range

This identifies the range of network address that are within the Class A address range; 0 – 126.

### Subnet Mask

This shows that the first octet masked by the subnet which identifies the Network ID and the remaining 3 octets are the Host ID's. Which means that we can have 127 (0 to 126) networks each with up to 16,777,216 hosts.

### Alternative Format

There are two ways an IP address can be written;

10.1.1.23 255.0.0.0.

10.1.1.23/8 - which identifies that the first 8 bits (octet) is the Network ID.

Both addresses are the same they are just written in a different format.

## Class B

A Class B network can be seen as being a medium sized network offering more network ID's than a Class A but less host ID's, we can see that the subnet 'masks' out the network portion of the IP address.

Class B Address Range	Subnet Mask	Alternative Format
128.1.x.x	255.255.0.0	128.1.x.x/16
191.255.x.x	255.255.0.0	191.255.x.x/16

### Class B Address Range

This identifies the range of network address that are within the Class B address range; 128.1 – 191.255.

### Subnet Mask

This shows that the first two octets are masked by the subnet which identifies the Network ID and the remaining 2 octets are the Host ID's.

### Alternative Format

There are two ways an IP address can be written;

132.1.1.23 255.255.0.0.

132.1.1.23/16 - which identifies that the first 16 bits (2 octets) are the Network ID.

Both addresses are the same they are just written in a different format.

## Class C

A Class C network is the most commonly used class, and is available for small to medium sized business. The allocated network portion is the first three octets, with the remaining octet being the host address.

Class C Address Range	Subnet Mask	Alternative Format
192.0.1.x	255.255.255.0	192.0.1.x/24
223.255.255.x	255.255.255.0	223.255.255.x/24

### Class C Address Range

This identifies the range of network address that are within the Class C address range; 192.0.0 – 223.255.255.

### Subnet Mask

This shows that the first three octets are masked by the subnet which identifies the Network ID and the remaining octet is the Host ID's.

## Alternative Format

There are two ways an IP address can be written;

192.168.3.55 255.255.255.0.

192.168.3.55/24 - which identifies that the first 24 bits (3 octets) are the Network ID.

Both addresses are the same they are just written in a different format.

## Calculating IP Address Range

If we are to include an address range within the Firewall option, it is necessary to:

Identify the IP address range.

Calculate the subnet mask.

The following tables show the format for each Class (A, B, C), they include the IP address and number of bits allocated to the network address, equivalent subnet mask, IP address range and number of hosts.

Use these tables to assist you in entering the correct information.

### Class A table

The table below shows the address ranges for a Class A network. To identify the correct information, locate the Host address that best fits your requirements and enter the IP address and subnet or the IP address and number of bits in the Firewall option (10.1.1.1/10).

Example IP address	Equivalent Network address	Host Addresses
10.1.1.1/8	255.0.0.0	10.1.1.0 – 10.255.255.255
10.1.1.1/9	255.128.0.0	10.1.1.0 – 10.127.255.255
10.1.1.1/10	255.192.0.0	10.1.1.0 – 10.63.255.255
10.1.1.1/11	255.224.0.0	10.1.1.0 – 10.31.255.255
10.1.1.1/12	255.240.0.0	10.1.1.0 – 10.15.255.255
10.1.1.1/13	255.248.0.0	10.1.1.0 – 10.7.255.255
10.1.1.1/14	255.252.0.0	10.1.1.0 – 10.3.255.255
10.1.1.1/15	255.254.0.0	10.1.1.0 – 10.1.255.255

## Class B table

The table below shows the address ranges for a Class B network. To identify the correct information, locate the Host address that best fits your requirements and enter the IP address and subnet or the IP address and number of bits in the Firewall option (128.1.1.1/15).

Example IP address	Equivalent Network address	Host Addresses
128.1.1.1/8	255.255.0.0	128.1.1.0 – 128.1.255.255
128.1.1.1/9	255.255.128.0	128.1.1.0 – 128.1.127.255
128.1.1.1/10	255.255.192.0	128.1.1.0 – 128.1.63.255
128.1.1.1/11	255.255.224.0	128.1.1.0 – 128.1.31.255
128.1.1.1/12	255.255.240.0	128.1.1.0 – 128.1.15.255
128.1.1.1/13	255.255.248.0	128.1.1.0 – 128.1.7.255
128.1.1.1/14	255.255.252.0	128.1.1.0 – 128.1.3.255
128.1.1.1/15	255.255.254.0	128.1.1.0 – 128.1.1.255

## Class C table

The table below shows the address ranges for a Class C network. To identify the correct information, locate the Host address that best fits your requirements and enter the IP address and subnet or the IP address and number of bits in the Firewall option (192.168.3.1/27).

Example IP address	Equivalent Network address	Host Addresses
192.168.3.1/24	255.255.255.0	192.168.3.0 – 192.168.3.255
192.168.3.1/25	255.255.255.128	192.168.3.0 – 192.168.3.127
192.168.3.1/26	255.255.255.192	192.168.3.0 – 192.168.3.63
192.168.3.1/27	255.255.255.224	192.168.3.0 – 192.168.3.31
192.168.3.1/28	255.255.255.240	192.168.3.0 – 192.168.3.15
192.168.3.1/29	255.255.255.248	192.168.3.0 – 192.168.3.7
192.168.3.1/30	255.255.255.252	192.168.3.0 – 192.168.3.3
192.168.3.1/31	255.255.255.254	192.168.3.0 – 192.168.3.1

## Appendix F – SMS Message Format

The Digital Sprite 2 supports GSM communications and SMS messaging. This allows the Digital Sprite 2 to report events via SMS and to receive SMS messages in order to create events on the system.

### Command Format

The commands consist of a descriptor followed by a variable parameter list. The order in which the parameters appear must follow the format detailed below.

### SMS Commands

These are messages that are sent to the Digital Sprite 2 to force an event to be triggered on the unit. These messages can be sent from a mobile phone or an Internet Service Provider (ISP) supporting SMS messaging.

#### Callback

This command is used to force the Digital Sprite 2 to make a connection to an Alarm Receiving Centre where the telnet listener (telserve) application is running.

***CALLBACK?<password>&<destination>&<profile>&<text>***

password	This is the SMS password that has been identified in the SMS Set-up page and enables the command to be executed.
destination	This is the IP address or DNS name of the Viewing application that has telserver (Telnet listener) enabled to receive the message.
profile	This can be a number or name that has been configured on the SMS Set-up page, this will be via the serial port or Ethernet connection.
text	This is the text message that will be sent to the remote viewer informing the Operator of an incident and therefore should be meaningful.

## SMS Reports

These are messages sent from the Digital Sprite 2 to a pre-defined SMS Server when an event occurs. The 'events' that will initiate this function are configured within the Digital Sprite 2 configuration web pages.

### Startup

An SMS message will be sent from the Digital Sprite 2 to the receiving station when the Digital Sprite 2 'starts up'.

**STARTUP?<name>&<time>&<IP address>&<latitude>&<longitude>&<zone>**

name	This is the system name configured on the Digital Sprite 2.
time	This is the local julian time of the message. The julian time is the number of seconds since 00:00:01 hour on January 1st 1970. If the Verbose message option has been enabled on the Digital Sprite 2 this message will be in a human readable format.
IP address	This is the Ethernet IP address of the Digital Sprite 2.
latitude	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
longitude	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
zone	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.

### Alarm

This report is generated when an alarm is received on the Digital Sprite 2.

**ALARM?<name>&<time>&<lat>&<long>&<speed>&<course>&<zone>&<camera>&<title>**

name	This is the system name configured on the Digital Sprite 2.
time	This is the local julian time of the message. The julian time is the number of seconds since 00:00:01 hour on January 1st 1970. If the Verbose message option has been enabled on the Digital Sprite 2 this message will be in a human readable format.
lat	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.

long	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
Speed	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
course	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
zone	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
camera	This is the video input number that is directly associated with the alarm on the Digital Sprite 2.
title	This is the alarm title allocated to the alarm that forced the SMS message.

## VMD

This report is generated when activity has been identified on the Digital Sprite 2.

**VMD?<name>&<time>&<lat>&<long>&<speed>&<course>&<zone>&<camera>&<vmd zone>**

name	This is the system name configured on the Digital Sprite 2.
time	This is the local julian time of the message. The julian time is the number of seconds since 00:00:01 hour on January 1st 1970. If the Verbose message option has been enabled on the Digital Sprite 2 this message will be in a human readable format.
lat	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
long	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
speed	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
course	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
zone	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.

camera	This is the video input number that is directly associated with the alarm on the Digital Sprite 2.
vmd zone	VMD zones are configured on the Digital Sprite 2, this identifies the zone that has been activated to initiate the SMS message.

## Camfail

This report will be generated if the Digital Sprite 2 identifies that any of the video inputs does not have a 1V peak-to-peak signal.

**CAMFAIL?<name>&<time>&<lat>&<long>&<speed>&<course>&<zone>&<upper>&<lower>**

name	This is the system name configured on the Digital Sprite 2.
time	This is the local julian time of the message. The julian time is the number of seconds since 00:00:01 hour on January 1st 1970. If the Verbose message option has been enabled on the Digital Sprite 2 this message will be in a human readable format.
lat	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
long	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
speed	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
course	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
zone	This parameter is not relevant to the Digital Sprite 2 and included to support other Dedicated Micros platforms.
upper	This identifies the bitmask of failed cameras 33 – 64.
lower	This identifies the bitmask of failed cameras 1 - 32.

## Appendix G - Advanced Configuration via OSD

This section details the option to configure Network options via the Digital Sprite 2 On Screen Display (OSD) menus.

The menu structure along with a detailed explanation will be shown.

### Remote Reporting

The Digital Sprite 2 supports remote alarm monitoring and can configured to automatically carry out actions to notify the remote station of events. This menu configures the remote reporting details for these features.

Remote Reporting		
Primary host	<None>	15 characters
Primary profile	Define <None>	Ethernet, 10 characters
Secondary host	<None>	15 characters
Secondary profile	Define <None>	Ethernet, 10 characters
Unit alarm name	<None>	15 characters
Public (NAT) IP address	<None>	
Video Server Port	0000	
Report Settings	Edit	
Dial retry time/limit	01 mins/00	00/00 - 99/99
Alm telnet server port	00023	0000 - 9999

Function	Description
Primary Host	This is the IP address or name of the initial host that the Digital Sprite 2 will transmit an alarm message to. The option allows 15 characters to be entered, if DNS is enabled enter the DNS name of the primary server or enter the IP address.
Primary Profiles	This is the medium that the Digital Sprite 2 will use to make the connection to the primary host. The option allows you to define (10 characters) the medium or select Ethernet.

Function	Description
Secondary Host	If the Digital Sprite 2 is unable to contact the primary host then it is possible to identify an alternative route and a secondary host. The option allows 15 characters to be entered, if DNS is enabled enter the DNS name of the secondary server or enter the IP address.
Secondary Profile	This is the medium that the Digital Sprite 2 will use to make the connection to the secondary host. The option allows you to define (10 characters) the medium or select Ethernet.
Unit Alarm Name	This is the name that will be presented to the remote alarm viewing application and therefore should have some significance to the Operator.
Public (NAT) IP address	This is public IP (or domain name) for a unit connected to the Internet via a NAT Router or Firewall. This field should be left blank if NAT is not used e.g. on a private network.
Video Server Port	This field allows the ARC to connect to the unit through a router that is using port forwarding e.g. if the video server does not appear on port 80 (HTTP) to the external network.
Report Settings	This allows access to a sub menu for configuration of when the unit will send a report.
Dial / Retry Timeout	If for any reason the initial connection attempt between the Digital Sprite 2 and the remote station fails then the Digital Sprite 2 will wait for the specified time period before attempting to re-connect. This allows the time period to be defined in minutes and seconds.
Alarm Telnet Server Port	This identifies the port number that will be used for remote monitoring station allowing them to 'listen' for alarm messages from the Digital Sprite 2. The default setting is 0023, however if this port is already being used on the network it is possible to define a different port number.



**Note:** The port number configured must also be reflected in the viewing application.

## Report Settings

This submenu determines when the unit will create a report.

### Report settings

Alarm reporting	Disabled	<u>Disabled, Enabled</u>
Camfail reporting	Disabled	<u>Disabled, Enabled</u>
Startup reporting	Disabled	<u>Disabled, Enabled</u>

Function	Description
Alarm Reporting	This must be enabled for the Digital Sprite 2 to automatically connect and report on alarm, it must also be enabled in the Alarm Zone menu.
Camfail Reporting	Enabling this option will force the Digital Sprite 2 to automatically connect and report when it has identified camera failure on any of the enabled video inputs.
Startup Reporting	When enabled the Digital Sprite 2 will be forced to transmit an alarm report to the central monitoring station when the Digital Sprite 2 starts up, this will identify any system resets.

# Email Settings

If the Digital Sprite 2 has been configured to transmit e-mails on alarm, camera fail, etc it is necessary to configure the e-mail settings.

Email Settings		
Connection profile	<None>	15 characters
Mail server	<None>	15 characters
Recipient address	<None>	15 characters
Recipient display name	<None>	15 characters
Reply-to address	<None>	15 characters
Reply-to display name	<None>	15 characters
Sender address	<None>	15 characters
Sender display name	<None>	15 characters
Report settings	Edit	
Email logging	Enabled	Enabled, Disabled

Function	Description
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Connection Profile	It is possible for the e-mail to be transmitted via the Ethernet network or dial up connection. Use the ↓ or ↑ to scroll through the available characters to identify the route the e-mail will take.
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**Note:** It is necessary to have either a modem connected and configured (dial up) or the Digital Sprite 2 connected to a LAN or WAN and has been allocated a valid IP address.

Mail Server	This is the IP address or DNS name of the SMTP Server that the e-mail from the Digital Sprite 2 will be sent to. The SMTP server will then forward this onto the allocated recipient.
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Function	Description
Recipient Address and Display Name	Enter the e-mail address of the recipient that the SMTP Server is to forward the e-mail on to. The Display Name is the name that will be shown, it is recommended that an name associated with the Digital Sprite 2 is used for ease of identification.
Reply-to-Address and Display Name	These fields must be configured if the recipient is to reply to an e-mail. The reply will be to a valid e-mail address to inform an Operator that an incident has occurred. Enter the e-mail address to allow a reply to be received.



**Note:** The Digital Sprite 2 does not accept incoming e-mails.

Sender Address and Display Name	These optional fields indicate the source of the e-mail notification. If the fields are left blank the Digital Sprite 2 will use the system name & DNS name to create a sender name.
Report Settings	This identifies the system conditions under which the Digital Sprite 2 will automatically transmit and e-mail.
E-mail Logging	When enabled an entry will be generated in the system log to identify when and why each e-mail transaction was transmitted from the Digital Sprite 2.

## Report Settings

This is a submenu of Email Settings

**Report Settings**

Report startup	Disabled	<i>Disabled, Enabled</i>
Report alarms	Disabled	<i>Disabled, Enabled</i>
Report camera fail	Disabled	<i>Disabled, Enabled</i>
Report VMD activation	Disabled	<i>Disabled, Enabled</i>

Function	Description
Report startup	If for any reason the Digital Sprite 2 has reset an e-mail will be transmitted to identify system startup.
Report alarms	When an alarm is triggered on any of the alarm inputs an e-mail can be transmitted to identify the input and any associated information.
Report camera fail	The video signals on the Digital Sprite 2 must be 1 Volt pk-to-pk, if any of the signals drop below this level and e-mail will be transmitted identifying the video input.
Report VMD activation	If VMD is enabled on the Digital Sprite 2 any identification of movement will cause the unit to send an e-mail containing information on the video input number.

## SMS Settings

The Digital Sprite 2 can be configured to send SMS messages under specific circumstances; alarm, system startup, etc.

This menu allows the SMS settings to be configured to allow the messages to be transferred to the SMS Server.

**SMS Settings**

Destination number	<None>	15 characters (Name or IP address)
Destination URL	<None>	15 characters
SMS Server	Disabled	Disabled, Enabled
Report Settings	Edit	
Callback profile 0	ETHER	ETHER, 15 characters
Callback profile 1	ETHER/	ETHER, 15 characters
SMS command password	Edit	
Advanced settings	Edit	

Function	Description
Destination Number	Enter the GSM number for the SMS server. The number should be entered in international format including the country code and local area code.
Destination URL	If the SMS message is to be sent over TCP/IP, enter the URL or the IP address of the SMS Server.
	<b>Note:</b> The SMS messages will be sent over an Ethernet link if present, alternatively it will be sent over the GSM network.
SMS Server	It is possible to enable the Digital Sprite 2 to become an SMS Server to receive and log SMS message, highlight the option and press to switch between enabled / disabled.
	<b>Note:</b> The Verbose option must <b>not</b> be enabled on the client DVR's when this option is selected.
Report Settings	An SMS message can be automatically transmitted when the unit identifies specific events.
Callback Profile 0	This identifies the route the return message, from the Operator mobile device, will take. The return message must contain the SMS command password, callback IP address (IP address of the remote PC with the Viewing application) and the command to action the Digital Sprite 2 to automatically call the remote station.
Callback Profile 1	This allows an alternative profile to be configured to work as a back-up or alternative route for the return message from the Operators mobile device. The options are to configure the setting use the  and  keys to scroll through the available options or the default settings is Ethernet.
SMS Command Password	This is the password to enable the SMS commands to be initiated and transmitted from the Digital Sprite 2 to the mobile device. This password will be included in the return text from the Operator. Use the  and  keys to scroll through the available characters. When the password had been configured highlight OK and press the MENU key to return to the SMS Setting menu.
Advanced Settings	These settings are specific to the GSM module connected to the Digital Sprite 2.

## Report Settings

This is a submenu of SMS Settings.

Report Settings		
Report startup	Disabled	<i>Disabled, Enabled</i>
Report alarms	Disabled	<i>Disabled, Enabled</i>
Report camera fail	Disabled	<i>Disabled, Enabled</i>
Report VMD activation	Disabled	<i>Disabled, Enabled</i>
Verbose message	Disabled	<i>Disabled, Enabled</i>

Function	Description
Report startup	If for any reason the unit is reset an SMS message will be sent.
Report alarms	The Digital Sprite 2 will send a message on receipt of an alarm.
Report camera fail	If the Digital Sprite 2 detects any of the video inputs has dropped below the 1 volt pk-to-pk an SMS message will be sent.
Report VMD activation	If any of the inputs on the Digital Sprite 2 triggers VMD an SMS message will be transmitted.
Verbose Message	The verbose message option ensures that any text messages transmitted from the Digital Sprite 2 is in a readable format to the mobile device.



**Note:** This format is not supported in standard SMS Servers

## Advanced Settings

This is a submenu of SMS Settings.

**Advanced Settings**

Service centre number	<None>	15 characters
GSM PIN number	<None>	4 characters
GSM / SMS port	No port	01, 02

Function	Description
Service Centre Number	Enter the number of the Service Centre that will be responsible for handling the SMS message. Use the  or  keys to scroll through the available characters.
GSM Pin number	If a pin code has been set on the mobile device this must be entered in the menu so that the message can be received by the mobile device.
 <b>Important Note:</b>	If any changes are made within this menu the Pin number must be re-entered each time.
GSM / SMS Port	Identify the port number for the network that the SMS message will be transmitted on.

## Web Cam Settings

Any of the video inputs on the Digital Sprite 2 can be made available and transmitted via FTP to a web serving device. These images can then be incorporated into a web page and accessed via a standard web browser.

**Webcam Settings**

Upload settings	Edit	
Batch transfer	Disabled	<i>Disabled, Enabled</i>
Single FTP session	Disabled	<i>Disabled, Enabled</i>
Webcam Resolution	High res	<i>High re, Medium res, Low res</i>
Webcam enabled	Edit	
Select cameras	Selected Cameras	<i>All cameras</i>

Function	Description
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Upload Settings	As the images are transmitted via FTP, this option allows the FTP Server information to be configured.
Batch Transfer	<p>Enable batch transfer and images will be transmitted to the FTP Server in a 'batch', e.g. the Digital Sprite 2 will take 'snap shots' from video inputs 1, 2, 4 and send these in a single batch to the FTP Server.</p> <p>If this is disabled then the Digital Sprite 2 will transmit files individually. The delay between batch files being transmitted is the update interval, e.g. every 10 seconds the Digital Sprite 2 will send images from video inputs 1, 2, 3.</p> <p>If batch is enabled then the update interval is the time between the Digital Sprite 2 sampling an image from one input to the next, e.g. the Digital Sprite 2 will transmit an image from input 1, 10 seconds later it will transmit and image from input 2, etc.</p>
Single FTP Session	Enabling Single FTP Session will result in avoiding the need to carry out the login/logout process for each image that is transmitted to the FTP Server, the Digital Sprite 2 will remain connected and logged in to the ISP until the connection is manually disabled.
Webcam Resolution	Identify the resolution of the images, defined in the Camera Setup menu, that are to be transferred to the FTP Server.



**Note:** Take into account the speed and type of network connection being used when selecting the resolution.

Function	Description
Webcam Enabled	This gives access to a sub menu for when the webcam is enabled.
Select Cameras	Cameras can be individually selected to be part of the webcam functionality. Press the corresponding camera key to enable / disable the camera. If all cameras are to be included in the function, select the All Cameras option.

## Upload Settings

This is a submenu of Web Cam Settings.

**Upload Settings**

FTP Server	<None>	15 characters
FTP root drive / directory	<None>	15 characters
FTP image directory	<None>	15 characters
Image filename prefix	<None>	15 characters
Username	<None>	15 characters
Password	Edit	
Update intervals	010 secs	000 - 999 seconds

Function	Description
FTP Server	This identifies the IP address (or name) of the FTP server that will receive the images from the Digital Sprite 2.
FTP Root Drive / Directory	Identify the directory where the downloaded images are to be stored, this settings can accommodate 15 characters.



**Note:** It is recommended that a name associated with the unit name be used for ease of retrieval.

**FTP Image Directory** This directory will be created when the initial image is uploaded to the FTP Server, it is the directory where all images will be saved on the server.  
Enter the name of the directory to be created, it is recommended that a name associated with the Digital Sprite 2 for ease or retrieval.

Function	Description
Image Filename Prefix	This is an identifier for images sent from this Digital Sprite 2 and will be stored as a prefix to the file name.
Username and Password	To gain access to the FTP server it is necessary to go through an authentication process this is the username and password that will allow the images from the Digital Sprite 2 to be uploaded to the FTP Server.



**Note:** The Password can be obtained from the Network Administrator.

Update Interval	This is the minimum update interval between each images being transmitted from the Digital Sprite 2 to the FTP Server.
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**Note:** It is important to take into account the speed of the route the FTP images will take when configuring the update interval, i.e. the lower the update interval the more images transmitted which will result in higher quantities of data being sent.

## Webcam Activation

This identifies when the webcam function is enabled on the unit

Webcam Activation	Day	Night	Weekend
Active	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Function	Description
Active	The webcam function can be selected to be active when the unit is in any of the Day, Night or Weekend modes (or all)

## Firewall Options

The Digital Sprite 2 supports enhanced network features, the firewall option adds security to the system. It ensures allows authorised users gain access to the Digital Sprite 2 by utilising IP address and port filtering.



**Note:** It is recommended that the Firewall Options feature be configured via the Web interface.

## Firewall options

Ping response	Enabled	Enabled, Disabled
Allowed IP address	01	01 - 32
IP entry 01 address	000.000.000.000	
IP entry 01 subnet	255.255.255.255	
Open TCP ports	01	01 - 32
TCP entry 01 from Port	0000	0000 - 9999
TCP entry 01 to Port	0000	0000 - 9999
Open UDP Ports	01	01 - 32
UDP entry 01 from Port	0000	0000 - 9999
UDP entry 01 to Port	0000	0000 - 9999

Function	Description
Ping Response	By default this option is enabled and therefore allows the Digital Sprite 2 to be pinged on the network. Disabling this option will make the Digital Sprite 2 less visible on the network.
Allowed IP address	It is possible to have 32 individual entries in the allowed IP address database, use the  or  keys to select the entry number.
IP Entry XX Address and Subnet	These are the IP addresses and Subnet mask that the Digital Sprite 2 will allow connections from, i.e. the IP address of the host PC's that will connect to the Digital Sprite 2 to; review video, download information.



**Note:** If you enable this function ensure the IP address of the PC you are using to configure the system is also in the list. If the address is not added then you will be unable to communicate with the Digital Sprite 2 via the network.



**Important Note:** It is very important to take this feature into account when the Digital Sprite 2 is installed in a DHCP network environment where IP addresses are allocated automatically and can change on reset.

Function	Description
Open TCP Port, Entry XX From Port, Entry XX To Port	This identifies the TCP ports that are supported on the system and available. If a host tries to communicate with the Digital Sprite 2 using a TCP port that is not in the list, even with a valid IP address, the host will not gain access to the unit. Enter the port range that are to be supported in the From and To settings.



**Note:** The TCP ports entered in this section must also be enabled on the network, check with the Network Administrator.

Open UDP Port, Entry XX From Port, Entry XX To Port	This identifies the UDP ports that are supported on the system and available. If a host tries to communicate with the Digital Sprite 2 using a UDP port that is not in the list, even with a valid IP address, the host will not gain access to the unit. Enter the port range that are to be supported in the From and To settings.
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**Note:** The UDP ports entered in this section must also be enabled on the network, check with the Network Administrator.

## System Logs

There are a number of system logs supported on the Digital Sprite 2, these logs can be viewed and used for Administration purpose.

Each log requires enabling to ensure entries are created by the Digital Sprite 2.

System Logs		
PPP connections	Disabled	<a href="#">Disabled, Enabled View</a>
Anonymous FTP connections	Disabled	<a href="#">Disabled, Enabled View</a>
Illegal file access	Disabled	<a href="#">Disabled, Enabled View</a>
Telnet / FTP users	Disabled	<a href="#">Disabled, Enabled View</a>
Archive	View	
Logfile	View	
Email log	View	
Sent message log	View	

Function	Description
PPP Connections	The PPP Connections log contains detailed information on each PPP connection made. The data includes the time, date, username and password.
Anonymous FTP	<p>The FTP function on the Digital Sprite 2 is password protected, however it is possible to disable the password allowing any user access to the unit via FTP.</p> <p>If the password is disabled then any user accessing the Digital Sprite 2 will be logged in the Anonymous FTP log. The entry in the log will contain the time and date, IP address and port information of the user.</p>
Illegal File Access	If a user tries to access a CGI protected directory or attempts to locate a non-existent file this will be logged as an illegal file access. It will log the time and date as well as the IP address, and type of action.
Telnet / FTP users	<p>The Telnet / FTP log details all FTP and telnet connections made to the Digital Sprite 2.</p> <p>Both these functions can be password protected by enabling and configuring the option this log will register all the information on the User name, IP address of the remote PC, time of transaction when ever and FTP or Telnet connection is made.</p> <p>Having this log contain the above information ensures ease of identification of Operators/Administrators that have logged into the system.</p> <p>When this option is enabled it is possible to select View to review the log.</p>
Archive	<p>The Digital Sprite 2 can be configured to manual or automatically trigger and FTP download of images. These downloads are logged and stored within the Archive Log for future analysis.</p> <p>This option allows the log to be reviewed on-screen.</p>
Logfile	<p>The Logfile stores all information on every action that is carried out by the Digital Sprite 2; such as when alarms are received and actioned, resets, failed outward bound alarm connections, etc.</p> <p>This is an active file and will be continually updated with the system transactions. The data will be stored until the log reaches its maximum size limit (typically 1Mb). The Logfile then writes over the top of the Logfile Backup and becomes the backup file and a new logfile is created.</p> <p>This ensures current and 'recent' information is always available.</p> <p>This option allows the log to be reviewed.</p>

<b>Function</b>	<b>Description</b>
Email Log	<p>This log holds information on the e-mails sent from the Digital Sprite 2 on receipt of an alarm.</p> <p>It follows the complete transaction from receipt of alarm to acknowledgement that the e-mail has been sent and the SMTP link has been dropped.</p>
Sent Message Log	<p>This logs all the SMS message information. There are various options that can be configured to allow an SMS message to be sent; start up, alarms, etc.</p> <p>The Sent Message Log, logs the information on the message sent including; the time and date, sender and receiver details and the message that was sent.</p>

## Additional Information

### Command Reference List

Command line

Command	Description
<ESC> m\Ether_IP\xxx.xxx.xxx.xxx	Set IP address of the Digital Sprite 2.
<ESC> m\subnet\xxx.xxx.xxx.xxx	Set subnet of the Digital Sprite 2.
<ESC> m\gateway\xxx.xxx.xxx.xxx	Set gateway of the Digital Sprite 2.
<ESC> m\status	Displays the status information or the Digital Sprite 2; drive information, comm. Ports information, enabled telemetry, etc.
<ESC> m\serial_mode\comx\disabled Debug PPP Text Telem	This command will allow any of the serial ports to be set for a specific function.  Replace the x with the port number and select from the list the option available (refer to the serial port section of this manual for allocated functionality for each port).
<ESC> m\security\Eng\Open Off Pass	Allows the security password for debug mode to be enabled (pass)or disable (off) on the Digital Sprite 2.
<ESC> m\security\debug\Open Off Pass	Allows the security password for debug mode to be enabled (pass)or disable (off) on the Digital Sprite 2.
ipcfg	Shows the IP address, subnet mask and gateway set on the Digital Sprite 2.
TCP Ports	Displays the active TCP ports supported on the Digital Sprite 2.



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