

SILENT SENTINEL ARE SPECIALISTS IN LONG RANGE
OPTICAL SENSORS INCLUDING BOTH COOLED AND
UNCOOLED THERMAL CAMERAS

Silent Sentinel On Screen Display Guide (Jager)

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If you need the latest version of this manual, please contact us. Silent Sentinel recommends that you use this manual under the guidance of professionals.

Version Control

Version	Author	Approver	Date
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On Screen Display Overview

The Silent Sentinel OSD (On Screen Display) is the primary point of configuration for the PT and Payloads (Excluding the IP Video Output Settings).

The OSD is presented as either an overlay on a camera Video Feed, or via a dedicated video encoder or via the BNC1 output on the camera cable.

The OSD is navigated as follows;

1. Move Up a line = Pelco Tilt Up Command (cycles round)
2. Move Down a line = Pelco Tilt Down Command (cycles round)
3. Move Right in current line value list = Pelco Pan Right Command.
4. Move Left in current line value list = Pelco Pan Left Command
5. Select an Item = Pelco Zoom In (or Pelco Goto 1)
6. Move out a menu level = Pelco Zoom Out (or Pelco Goto 199)

Note:

1. This guide only concerns itself with settings that define certain features. All other settings should not be touched by the user. Changing these settings may cause loss of control / communications etc. Any settings not covered in this guide should not be changed without consulting Silent Sentinel.
2. This guide concerns itself with the generic elements of these menus. Annexes are provided for the Camera 1, Lens 1, Camera 2 and Lens 2 pages as these are different for each payload.

Menu Structure

The OSD menu has the following structure;

Base Menu

The Base Menu is the entry point for the other menus. It contains information regarding the FW Version and Build code the unit is currently running as well as the Comms Mode, Baud Rate, Serial settings etc.

Mechanical Menu

The Mechanical Menu contains the settings that relate to base line PT function at a mechanical level as well as interface settings for the various payloads. This menu should not be accessed or altered without guidance from Silent Sentinel.

Setup Menu

The Setup Menu contains User Level settings for;

1. Attached Payloads
 - a. Ability to change baseline settings on attached cameras, lenses, access to their native menus where relevant.
2. Configuration
 - a. PT speeds, Orientations
3. Communications
 - a. System Baud rates, wait times etc.
4. And many more settings described later in this document.

Accessing the OSD Menus

The OSD can be accessed by sending the camera PelcoD Preset 1 from the IP Encoder or Preset 2 or Preset 199 from SSUtility. From SSUtility2.0 there are also quick buttons to access these menus.

Base OSD Menu

The Base OSD Menu offers a route through to the primary Mechanical and Setup Menus

Step	Detail	
1	Select Preset 1 and then select GoTo.	<p>The screenshot shows the 'LIVE VIEWER' interface. On the left, there's a 'Video Input 1' and 'Video Input 2' section with 'Stop' and 'Video Details' buttons. Below that is a 'Text1' area with some technical data. On the right, the 'PTZ CONTROL' section includes sliders for Zoom, Focus, and Iris, along with 'Home', 'Auto Focus', and 'Auto Iris' buttons. Below that is the 'PRESETS' section, where 'Preset 1' is selected, and a 'Goto' button is visible. Other buttons include 'Set', 'Clear', 'Set Home Position', and 'Goto Home Position'. At the bottom, there are expandable sections for 'PRESET TOURS', 'OTHER COMMANDS', and 'AUXILIARY CONTROL'.</p>
2	This will bring up the Base Menu.	<p>The screenshot shows the Base OSD Menu overlaid on a video feed. The text is as follows: Silent Sentinel Jaeger HMD Version 3.001 (AB1F) C2 PelcoD, 9600, 8N1f C:001 D >Goto preset >Run tour Pan/Tilt control Normal >Setup (protected) NTSC OSD layout Off Using SSUTILITY Off AltCam control Sticky Secondary Camera Cam2 ZF Debug units Std</p>

<p>3</p>	<p>From here you can identify;</p> <ol style="list-style-type: none"> 1. FW Version (3.001) 2. FW Build Code (AB1F) 	<pre> Silent Sentinel Jaeger HMD Version 3.001 (AB1F) C2 PelcoD, S000, CNLf C1001 D >Goto preset >Run tour Pan/Tilt control Normal >Setup (protected) NTSC OSD layout Off Using SSUTILITY Off AltCam control Sticky Secondary Camera Cam2 ZF Debug units Std </pre>
<p>3</p>	<p>Scroll down and select on the 'Setup (protected)' line.</p> <p>Note: when you scroll down the second line of the OSD changes to display the POST result. This is useful for diagnosing issues.</p>	<pre> Silent Sentinel Oculus Version 2.019 (A3DE) C2 U SN: 01912033 POST: 00000000 >Goto preset >Run tour Pan/Tilt control Normal >Setup (protected) NTSC OSD layout Off Using SSUTILITY Off AltCam control Sticky Secondary Camera Cam2 ZF Debug units Std </pre>

Setup Menu

Step	Detail	
1	As above, if the Base Menu is not showing, Select Preset 1 and then select GoTo.	
2	This will bring up the Base Menu.	

<p>3</p> <p>Scroll down and select on the 'Setup (protected)' line.</p> <p>Note: when you scroll down the second line of the OSD changes to display the POST result. This is useful for diagnosing issues.</p>	<pre> Silent Sentinel Oculus Version 2.019 (A3DE) C2 U SN: 01912033 POST: 00000000 >Goto Preset >Run tour Pan/Tilt control Normal >Setup (protected) NTSC OSD layout Off Using SSUTILITY Off AltCam control Sticky Secondary Camera Cam2 ZF Debug units Std </pre>
<p>3</p> <p>Navigate the virtual keyboard to enter the following password then select 'ok' (Left/Right/Up/Down to move the highlight to the desired letter – it is shown on A – then Select to invoke that letter; repeat as necessary; when happy, navigate to the OK then Select on it)</p> <p>Password: AAAAAA</p>	<pre> Password ----- ???????? ----- A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9 . * = () / : ; < > ? " ' + * = SPC <-- --> DEL ESC OK NXT </pre>
<p>3</p> <p>You will now be in the Setup Menu</p>	<pre> Silent Sentinel Jaeger HMD Version 3.001 (0000) C2 SN: FFFFFFFF POST: 00000000 >Camera 1 options >Lens 1 options >Camera 2 options >Lens 2 options >Communications >Configuration >Miscellaneous >Presets >Telemetry </pre>

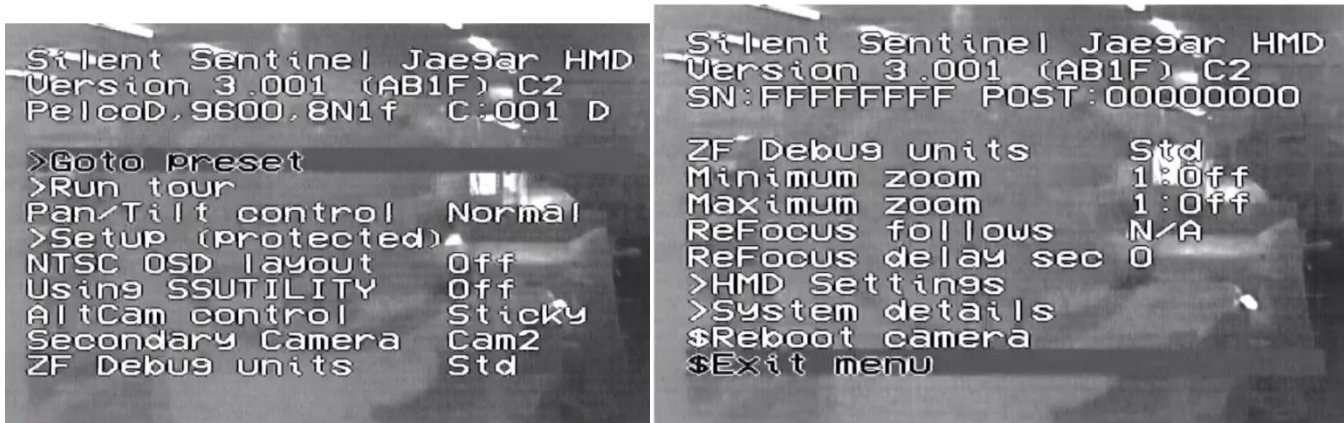
Mechanical Menu

Step	Detail	
1	Select Preset 1 and then select GoTo.	<p>The screenshot shows the 'LIVE VIEWER' interface. On the left, there are 'Video Input 1' and 'Video Input 2' tabs, with 'Video Details' selected. Below this is a 'Text1' box containing technical data: P06862 TFFOC0 z0000 f0000, P006862 bahe PID0200000000, 000/100 bahe t165. On the right, the 'PTZ CONTROL' section includes sliders for Zoom, Focus, and Iris, along with 'Auto Focus' and 'Auto Iris' buttons. Below that is the 'PRESETS' section with a dropdown menu set to 'Preset 1' and buttons for 'Goto', 'Set', 'Clear', 'Set Home Position', and 'Goto Home Position'. At the bottom, there are expandable sections for 'PRESET TOURS', 'OTHER COMMANDS', and 'AUXILIARY CONTROL'.</p>
2	This will bring up the Base Menu.	<p>The screenshot shows the 'Base Menu' OSD overlaid on a video feed. The text reads: Silent Sentinel Jaeger HMD, Version 3.001 (AB1F) C2, PelcoD, 9600, 8N1f C:001 D. The menu options are: >Goto preset, >Run tour, Pan/Tilt control Normal, >Setup (protected), NTSC OSD layout Off, Using SSUTILITY Off, AltCam control Sticky, Secondary Camera Cam2, ZF Debug units Std.</p>

<p>3</p>	<p>Scroll down and select on the 'Setup (protected)' line.</p>	<pre> Silent Sentinel Oculus Version 2.019 (A3DE) C2 V SN:01912033 POST:00000000 >Goto Preset >Run tour Pan/Tilt control Normal >Setup (protected) NTSC OSD layout Off Using SSUTILITY Off AltCam control Sticky Secondary Camera Cam2 ZF Debug units Std </pre>
<p>3</p>	<p>Navigate the keyboard to enter the following password then select 'ok'</p> <p>Password: AAAAAD</p>	<pre> Password ----- ???????? ----- A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9 . * = () / : ; < > ? " ' + * = SPC <-- --> DEL ESC OK NXT </pre>
<p>3</p>	<p>You will now be in the Mechanical Menu (always has Axis Scale as second or first line)</p>	<pre> Silent Sentinel Jaeger HMD Version 3.001 (0000) C2 SN:FFFFFFFF POST:00000000 Production board On Reverse tilt Off Axis scale 50 Axis divisor 1 Power-save On Motors Off after 0 Maximum speed d/s 100 Tilt reduction % 0 P/T AC and DE 5 </pre>

Base OSD Menu

The base OSD menu looks as follows;



The settings, and values, are defined in the following table;

Number	Setting Name	Comments
1	>Goto preset	Allows the users to select a stored preset to 'GoTo'
2	>Run tour	Allows the users to run a stored tour
3	Pan/Tilt control	Defines the way PelcoD Left/Right/Up/Down speeds are mapped to actual movement speeds. Normal is straight mapping of normal PelcoD speeds to % of max speed. The other options (Linear255,Quadratic,Quad255) allow finer speed control and/or more sensitivity at the lower end of the speed range, but the 255 options may have limited use with controllers that strictly enforce PelcoD PT speed values to be only 0-64 Default Value: Normal Default Value (With Tracking): Liner255
4	>Setup (protected)	'Select' on this line to access the password screen which provides access to the Setup and Mechanical Menus.
5	NTSC OSD layout	When set to 'On' this rescales the OSD layout to run on an NSTC feed (removed the last 2 lines). Default Value: Depends on the Video Output (Pal / NTSC). Off for IP systems.
6	Using SSUTILITY	Do not set On unless using SSUTILITY V1 to control systems set in PelcoD Strict mode. Default Value: Off
7	AltCam control	Do not change

		Default Value: Sticky
8	Secondary Camera	Do not change unless you have a 3-camera system, where this can be used to switch Secondary between Cam2 and Cam3 Default Value: Cam2
9	ZF Debug Units	Changes the way the zoom and focus values are displayed on the OSD Debug Display. Raw shows raw lens values instead of PelcoD values. Default Value: Std
10	Minimum zoom	This allows the user to set a minimum zoom limit for a given camera. The limit is applied to the camera whose PelcoD Address was used to enter the menu. The line reads as follows; Minimum Zoom X:Off Where X is the Address used to enter the menu and therefore the camera the limit will be applied to. To set the limit, zoom the camera to the desired minimum zoom position, enter the menu using the Pelco D Address for that camera and then 'Select' on this line. The line will then change to read (for a camera on PelcoD Address 1); Minimum Zoom 1:X% Where X% is the percentage Zoom_In of the Min limit. (0% = Full Wide, 100% = Full Tele) To clear the limit highlight the line, move Left until the line reads 'Off'. Default Value: Off.
11	Maximum zoom	Same as (9) but for Maximum zoom. Default Value: Off.
12	ReFocus follows	This setting instructs the system to automatically trigger a Push Focus for the currently selected camera in line with the following; PTZ – Push Focus will triggered following all PTZ movements Zoom – Push Focus will be triggered following zoom control on the camera in question.

		<p>N/A – disabled.</p> <p>The Push Focus is triggered after the above setting changes have all stopped for the time delay specified in the ‘Refocus delay sec’ line.</p> <p>Default Value: N/A</p>
13	Refocus delay sec	<p>This line specifies the time between PT / Zoom action stopping and firing an automatic Push Focus.</p> <p>Default Value:0</p>
14	HMD Settings	<p>Lists the default values for SMPX Pan and Tilt motors for acceleration, deceleration and target speed levels, and also motor max current levels for run and idle.</p>
15	System details	<p>This is an information page listing type of system, firmware versions and build codes for main board and SMPX board, Interlink Speed between main board and SMPX, current configuration information for Cameras 1-3 (whichever are present), and information about when last Hard Boot and Soft Boot took place. For these last to be useful, the RTC date and time need to be set.</p>

Setup Menu

Summary

The Setup Menu looks as per the following images (you have to move Up or Down for the 2nd);



The menus are summarized as follows.

1. Camera 1 Options
 - a. Settings that relate to the module configured as Camera 1. Typically for Oculus / Aeron this is the Sony HD or 4K module.
 - b. For Osiris / Jaeger this can be the BOSCH (in which case there are no settings to configure), Hitachi or KOWA Cores.
2. Lens 1 Options
 - a. Settings that relate to the lens attached to Camera 1. For Oculus / Aeron this typically holds no settings as the Sony is an integrated module and has no direct lens settings.
 - b. For Osiris / Jaeger this is typically the Yamano 500mm or Fuji 1000mm.
3. Camera 2 Options
 - a. Settings that relate to the module configured as Camera 2. Typically across all platforms this is the Thermal Payload.
 - b. NOTE: The payload configured under Camera 2 may sometimes be a non-optic payload such as an illuminator.
4. Lens 2 Options
 - a. Settings that relate to the lens attached to Camera 2.
5. Communications
 - a. Settings that relate to the Serial Communications from the system.
6. Configuration
 - a. Settings that relate to certain PT behavior where linked to Payloads.
7. Miscellaneous
 - a. Settings that had no other home ...
8. Presets
 - a. Allows the inspection and clearing of Presets.
9. Privacy Patches
 - a. These are deprecated and no longer used.
10. Telemetry

- a. Allows the user to enable certain visible information fields. This information is overlaid on the video feed that supplies the OSD (typically the thermal). This can be static-textual or relate to transient information (PT position etc).

11. Tours

- a. Allows the user to configure PT tours, dwell times etc.

12. Video Settings

- a. Do not change.

Communications

The Communications menu looks as follows;



The settings, and values, are defined in the following table;

Number	Setting Name	Comments
1	Camera Number	<p>This is the starting Pelco D address of the system. It also appears in the Base Menu header as Cnnn. If this number is '1' then the system will respond to PelcoD packets sent to address 1. Dualled Camera allows the system to respond also to Camera Number+1 in which case Camera+Lens1 has its address as PelcoD 1 and Camera+Lens2 is addressed using PelcoD 2. System commands can be sent to either 1 or 2</p> <p>If this is set to '5' then Camera+Lens1 is address 5, Camera+Lens2 is address 6.</p> <p>Default Value: 1</p>
2	Dualled Camera	<p>If Dualled Camera is enabled then Camera+Lens2 can be addressed using the PelcoD address defined in the 'Camera Number' line +1</p> <p>Default Value: On</p>
3	Protocol	<p>The control protocol for the system. Pelco D is the default. If a different protocol is selected the wider features offered by our implementation of Pelco D protocol cannot be guaranteed.</p> <p>Default Value: PelcoD</p>

4	Auto-protocol	<p>When this is enabled the system will adjust to another protocol automatically should it detect a message in that format as the first message when in Protocol Seek mode</p> <p>Default Value: On</p>
5	Protocol Escape	<p>If enabled this allows the system to recognise the Silent Sentinel escape character (0x1B) and enter Protocol Seek mode to switch protocol as needed. This must be set to 'On' for Firmware Updates (which need to switch into SSCP protocol). This can be set Off to prevent stray Escape characters on the RS485 bus from triggering Protocol Seek mode on all attached camera systems!!</p> <p>Default Value: On</p>
6	Pelco Mode	<p>This defines the PelcoD mode in which the unit is running. Choices are Tradtnl,Strict,RevTilt,Legacy. This primarily relates to the tilt axis co-ordinate system. Please see Pelco D ICD for further details.</p> <p>Default Value: Strict</p>
7	Zoom cam <-> proto	<p>Only affects Sony block cameras and Ophir2 lenses. Consult Silent Sentinel for details.</p> <p>Default Value: Traditional</p>
8	Focus cam <-> proto	<p>Only affects Sony block cameras and Ophir2 lenses. Consult Silent Sentinel for details.</p> <p>Default Value: Traditional</p>
9	PelcoDCQ Optimise	<p>Do not change without consulting Silent Sentinel.</p> <p>Default Value: Off</p>
10	Mag is zoom lsbite	<p>Should be set Off. Only effects lenses with extenders.</p> <p>Default Value: Off</p>
11	Joystick Pan Rev	<p>On = Reverses the Pan Axis. Left commands are translated to right commands and vice versa.</p> <p>Default Value: Off</p>
12	Joystick Tilt Rev	<p>On = Reverses the Tilt Axis. Up commands are translated to Down commands and vice versa.</p> <p>Default Value: Off</p>
13	BBV-coax enable	<p>Not used.</p>

14	Baud Rate	<p>The Serial Baud rate for the system. If this is changed then the Baud Rate for all attached encoders must be changed.If the unit is supplied with a tracking capability then this must not be changed from 115200.</p> <p>Default Value (Non-tracking): 9600</p> <p>Default Value (Tracking): 115200</p>
15	Data-bits	<p>Do not change</p> <p>Default Value: 8-bits</p>
16	Parity	<p>Do not change</p> <p>Default Value: None</p>
17	Stop Bits	<p>Do not change</p> <p>Default Value: 1</p>
18	RS485 reply wait	<p>This is the amount of time (milliseconds) that system will wait before responding with an Ack or Query Response. This allows other serial drivers enough time to change from Tx to Rx. Reducing this will improve response time but may lead to system instability.</p> <p>Default Value: 20</p>
19	SMPX DE Wait	<p>The Interlink between main board and SMPX is an RS485 half-duplex connection, so needs a small wait time for turn-round between send and receive.</p> <p>Do not change</p> <p>Default Value: 12ms</p>

Configuration

The configuration menu looks as follows;



The settings, and values, are defined in the following table;

Number	Setting Name	Comments
1	Positioning Speed	<p>The maximum speed is set in the mechanical menu. This setting scales the maximum speed of the unit down from the hard coded maximum in eighths. Therefore;</p> <p>8 = max speed</p> <p>4 = 50% max speed</p> <p>2 = 25% of max speed</p> <p>Any Pelco D move at rate commands are then scaled by this factor. This only relates to relative movement commands.</p> <p>Default Value: 8</p>
2	Preset Pos Speed	<p>The maximum speed is set in the mechanical menu. This setting scales the speed of the unit relative to the hard coded maximum in sixteenths. Therefore;</p> <p>1-15 = n/16 of max speed</p> <p>0 = 100% of max speed</p> <p>This only relates to GoTo Preset Calls and Absolute Positions.</p> <p>Default Value: 8 (half speed)</p>

3	AbsPos Speed From	<p>Do not change</p> <p>Default Value: Default</p>
4	Low Voltage PSU	<p>Do not change</p> <p>Default Value: Off</p>
5	Pan limit left	<p>Setting this will limit Pan motion 'Left' of 0 to a maximum of the entered number in degrees (-1 to -359). If either Pan Limit is non-zero then BOTH apply (be careful).</p> <p>Default Value: 0</p>
6	Pan limit right	<p>Setting this will limit Pan motion 'Right' of 0 to a maximum of the entered number in degrees. (1 to 359).</p> <p>Default Value: 0</p>
7	Tilt limit down	<p>Setting this will limit Tilt motion 'Down' from 0 to a maximum of the entered number in degrees (e.g. -35).</p> <p>Default Value: system and orientation dependent</p> <p>NOTE: This default will change depending on the type of payload in the camera.</p>
8	Tilt limit up	<p>Setting this will limit Tilt motion 'Up' from 0 to a maximum of the entered number.</p> <p>Default Value: system and orientation dependent</p> <p>NOTE: This default will change depending on the type of payload in the camera.</p>
9	Pan Zero @0.0	<p>This allows the user to 're-locate' the 0-degree reference location.</p> <p>To set this;</p> <ol style="list-style-type: none"> 1. Move the camera to the desired '0' position 2. Navigate to this menu 3. 'Select' on this line <p>You will then see the line change from 'Pan Zero @ 0.0' to 'Pan Zero @ X' where X is the angle you wish 0 to be referenced from.</p> <p>To clear the saved angle;</p> <ol style="list-style-type: none"> 1. Highlight this menu line

		<p>2. Scroll Right</p> <p>3. 'Select' on Clear.</p> <p>Default Value: 0.0</p> <p>Note: This does not replace the mechanical 0 position. This simply adds an offset for the reported Pan Angle.</p>
10	North @0.0	<p>This allows the user to add a north reference to the system.</p> <p>To set this;</p> <ol style="list-style-type: none"> 1. Move the camera to the desired 'North' position 2. Navigate to this menu 3. 'Select' on this line <p>You will then see the line change from 'North @ 0.0' to 'North @ X' where X is the angle you wish 0 to be referenced from.</p> <p>To clear the saved north position;</p> <ol style="list-style-type: none"> 1. Highlight this menu line 2. Scroll Right 3. 'Select' on Clear. <p>Default Value: 0.0</p>
11	Simple Wash	<p>Do not change</p> <p>Default Value: Off</p>
12	Wash duration	<p>The duration for which the washer pump is enabled, should one be provided.</p> <p>Default Value: 5 (secs)</p>
13	Wiper duration	<p>The duration for which the wiper is enabled when it is triggered</p> <p>Default Value: 7 (secs)</p>
14	Ancillary func	<p>Do not change</p> <p>Default Value: Off</p>
15	Heater threshold	<p>Do not change</p>

		Default Value: Off
16	Ext-pos functions	<p>This is the starting preset that the Base Preset Block starts from. The Base Preset block is the series of Pelco D presets that Silent Sentinel has reserved for system functionality. Goto the starting preset number enters the OSD menu system, or exits the current OSD menu level.</p> <p>Default Value: 2</p>
17	Dome 95 menu	<p>Do not change</p> <p>Default Value: Off</p>
18	Tour Pos settings	<p>Do not change</p> <p>Default Value: Off</p>
19	Watchdog timeout	<p>Do not change</p> <p>Default Value: Off</p>

Miscellaneous

The Miscellaneous menu looks as follows;



The settings, and values, are defined in the following table;


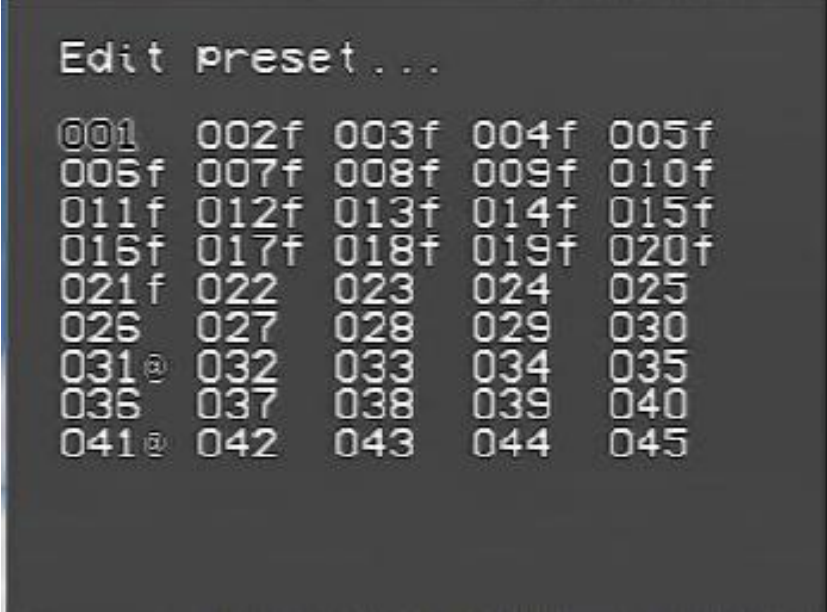
Number	Setting Name	Comments
1	Date Time	From here the user can set the Date / Time etc that can then be shown as an overlay via the Telemetry menu. It is a good idea to set this.
2	Debug Control	Use under Silent Sentinel advice
3	Diagnostics	Not for customer use. Use under Silent Sentinel advice.
4	Hide quick menu	Do not change Default Value: Off
5	Idle func (tour)	The tour that is triggered should the idle timeout be reached. 0 = no tour. Default Value: 0
6	Idle timeout mins	The amount of idle time that has to pass from the last command for the user input to be deemed idle, causing the idle tour to be triggered. Default Value: 2
7	IR Lamp mode	Where relevant this controls the default behaviour of the IR Illuminator (only on Oculus). Off = Illuminator off On = Illuminator on

		<p>Auto = the system detects when the Sony daylight camera switches to mono mode and automatically turns on the IR Illuminator. Only actioned if Sony block day camera fitted.</p> <p>Default Value: Auto</p>
8	POST	<p>This defines the level of Power On Self Test to be performed. This higher the level, the more messages are displayed to the user during startup POST testing.</p> <p>0 = Do not run POST (ONLY Silent Sentinel should use this – a lot of essential setup is done during POST)</p> <p>1 = Quickest – no pauses for user to read messages</p> <p>2 = Verbose – short pauses to allow message reading</p> <p>3 = Very verbose - & longer pauses to read messages</p> <p>Default Value: 1</p>
9	Return to Off-pos	<p>If this is enabled then upon power up the unit will return to the last remembered position pre-power off. Current PTZF is remembered about every 5 secs.</p> <p>Default Value: Off</p>
10	PTZF timeout	<p>The time amount that is applied to any continuous PTZF movement. This is primarily aimed at the Pan axis. If the controlling software failed to send a stop command the unit will automatically stop after this period of time (seconds)</p> <p>Default Value: 120</p>
11	Z-dependent speed	<p>When enabled this will reduce the ACTUAL speed of the PT for a given command depending on the setting;</p> <ol style="list-style-type: none"> 1. Camera 1 – speed reduced based on the current field of view of camera 1 2. FollowV – speed reduced based on the camera that is selected for the primary video channel 3. FollowC – speed reduced based on the FOV of the currently controlled camera (Pelco D Address 1 or 2). <p>Default Value: Camera1</p>
12	Cam2 Slave Zoom	<p>When enabled the system will automatically adjust the field of view of camera2 to match that of camera1;</p>

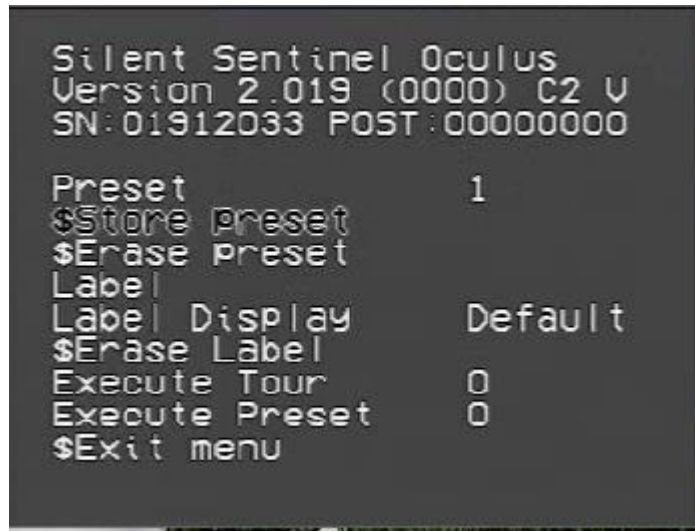
		<ol style="list-style-type: none"> 1. On = will set the pelco D zoom position of Camera2 to match Camera1 2. FOV = will try to set the FOV of Camera2 to match that of Camera1 3. FOVx = as for FOV but using table lookup <p>Default Value: Off</p>
13	Cam3 Slave Zoom	<p>When enabled the system will automatically adjust the field of view of camera3 to match that of camera1;</p> <ol style="list-style-type: none"> 1. On = will set the pelco D zoom position of Camera3 to match Camera1 2. FOV = will try to set Camera3 FOV to match Camera1 3. FOVx = as for FOV but using table lookup <p>Default Value: Off</p>
14	Cam2/3SZ Interval	<p>Interval between successive checks on Camera2 and Camera3 Zoom Positions if either Camera is slaved to Camera1 Zoom. At each check time, if Camera1 Zoom has changed since the last check, then the Zoom position of each of the slaved cameras is adjusted to match.</p>
15	Slave zoom block	<p>Temporarily blocks Slave Zoom from changing Zooms.</p> <p>Default Value: Off</p>
16	Hold stab for PT	<p>When enabled the system will temporarily disable any active stabilisation (electronic or optical) during PT movements.</p> <p>Default Value: Off</p>
17	Push Focus all	<p>When enabled the system will command a push focus on ALL cameras when a push focus command is received for ANY camera.</p> <p>Default Value: Off</p>
18	Aux10-16 control	<p>Do not use.</p>
19	Exec Presets RO	<p>Protects Vectored Presets from change. Use under Silent Sentinel guidance</p> <p>Default Value: Off</p>

20	Zoom speed (def)	This is the initial value of the default zoom speed that is applied to Pelco D zoom commands that contain no rate. Default Value: 60 (pct of max)
	Focus speed (def)	This is the initial value of the default focus speed that is applied to Pelco D focus commands that contain no rate. Default Value: 60 (pct of max)

Presets

Step	Detail	
1	Select on the 'Presets' line	 <p>Silent Sentinel Jaeger HMD Version 3.001 (0000) C2 SN:FFFFFFFF POST:00000000</p> <ul style="list-style-type: none"> >Camera 1 options >Lens 1 options >Camera 2 options >Lens 2 options >Communications >Configuration >Miscellaneous >Presets >Telemetry
2	<p>Select the preset you wish to review.</p> <p>Note: the preset numbers may have some characters next to them;</p> <p>f = functional preset. Cannot be set or overwritten. @ = preset has been set p /t = Pan or Tilt value exceeds current limits x = this is a vectored preset (executes another)</p> <p>No characters next to the number means the preset is empty and not used.</p>	 <p>Edit preset...</p> <pre> @@1 002f 003f 004f 005f 006f 007f 008f 009f 010f 011f 012f 013f 014f 015f 016f 017f 018f 019f 020f 021f 022 023 024 025 026 027 028 029 030 031@ 032 033 034 035 036 037 038 039 040 041@ 042 043 044 045 </pre>

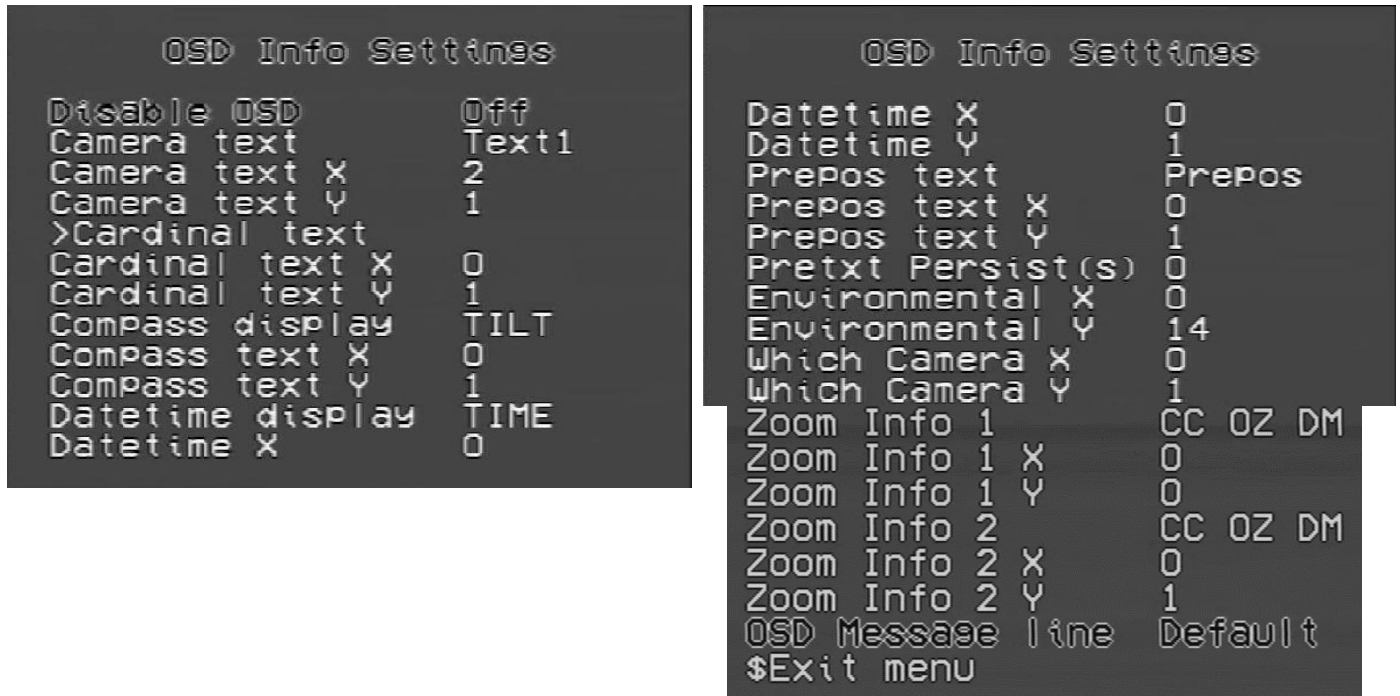
When a preset is selected the following options are presented;



Number	Setting Name	Comments
1	Preset	Shows the selected preset number
2	\$Store preset	Selecting on this line stores the current PTZF position against the preset number
3	\$Erase preset	Selecting on this line erases the stored information and frees up the selected preset
4	Label	Selecting this line opens up a virtual keyboard that allows entry of a custom name that can be displayed on the OSD when the preset is triggered.
5	Label Display	This shows the format of the label display.
6	\$Erase Label	Selecting on this line erases the label stored against the selected preset
7	Execute Tour	This allows for the vectored triggering of a PTZ tour. Select the tour number by navigating right / left and then zoom in to select. Then Goto this preset will start the nominated tour.
8	Execute Preset	This allows for the vectored triggering of another PTZ Preset. Select the target preset number by navigating right / left and then zoom in to select. Then Goto this preset and it will execute the target preset instead. Only one level of vectoring allowed!

Telemetry

The Telemetry menu looks as follows;



The settings, and values, are defined in the following table;

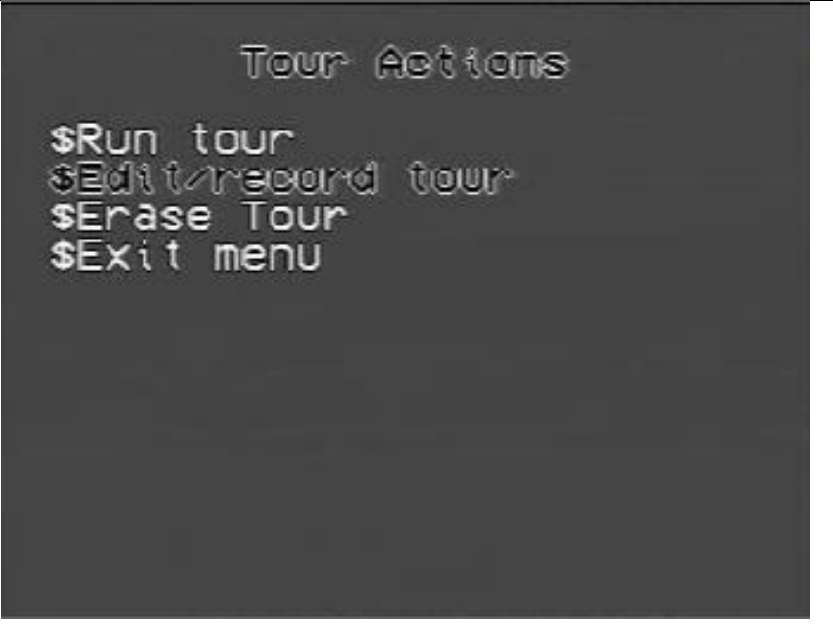
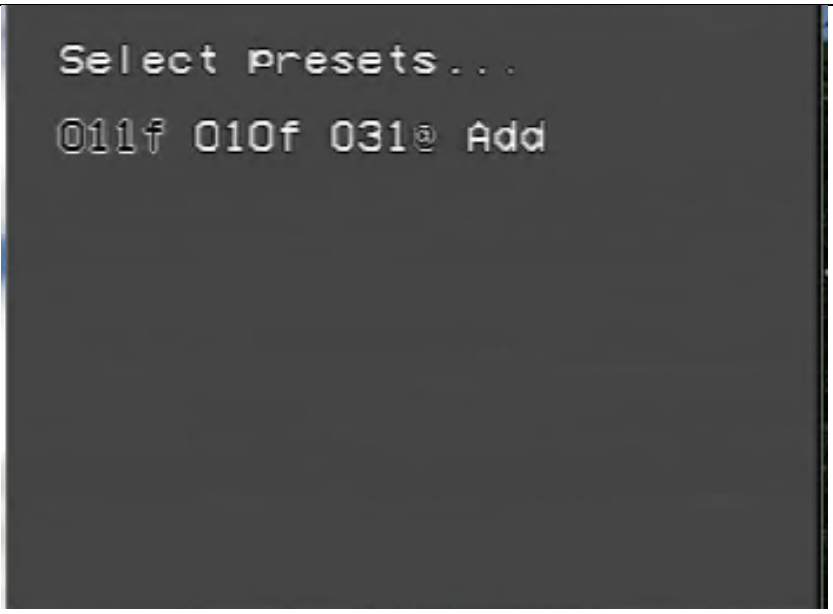
Number	Setting Name	Comments
1	Disable OSD	Setting this to 'On' suppresses all OSD messages (Text, preset calls, focusing messages etc). Not recommended!! Default Value: Off
2	Camera text	Selecting on this line presents a virtual keyboard which can be used to enter text that is permanently displayed on the OSD feed. Default Value: Text1
3	Camera text X	X coordinate of where the message should be displayed on the OSD. (Zero hides the message)
4	Camera text Y	Y coordinate of where the message should be displayed on the OSD.
5	>Cardinal text	>Cardinal text allows definition of the 8 messages to be displayed if the camera is currently pointing towards cardinal positions North, North-East, East, South-East, South, South-West, West or North-West. Default messages are N,NE,E,SE,S,SW,W,NW.


6	Cardinal text X	X coordinate of where the message should be displayed on the OSD. (Zero hides the message)
7	Cardinal text Y	Y coordinate of where the message should be displayed on the OSD.
8	Compass display	Compass display allows display of Pan or Tilt or Both position in tenths of a degree, or Pan or Tilt or Both speeds in hundredths of a degree per sec
9	Compass text X	X coordinate of where the message should be displayed on the OSD. (Zero hides the message)
10	Compass text Y	Y coordinate of where the message should be displayed on the OSD.
11	Datetime display	Datetime display allows display of current Date or Time or both from the Real Time Clock (which must have been set correctly).
12	Datetime X	X coordinate of where the message should be displayed on the OSD. (Zero hides the message)
13	Datetime Y	Y coordinate of where the message should be displayed on the OSD.
14	Prepos text	Prepos text allows definition of a standard precursor to Preset number when display of current Preset is enabled (default is Preset). We also have a persistence setting to say how long any specific preset text should persist.
15	Prepos text X	X coordinate of where the message should be displayed on the OSD. (Zero hides the message)
16	Prepos text Y	Y coordinate of where the message should be displayed on the OSD.
17	Pretxt Persists(s)	How long any specific preset text should persist.
18	Environmental X	The display format is fixed, alternating Temp DegC with Humidity % X coordinate of where the message should be displayed on the OSD. (Zero hides the message)
19	Environmental Y	Y coordinate of where the message should be displayed on the OSD.
20	Which Camera X	The display format is fixed as "Primary" or "Secondary" X coordinate of where the message should be displayed on the OSD. (Zero hides the message)

21	Which Camera Y	Y coordinate of where the message should be displayed on the OSD.
22	Zoom info 1	Do not use
23	Zoom info 1 X	OSD column to start Zoom Info display field 1 (0 suppresses display)
24	Zoom info 1 Y	OSD row to display Zoom Info field 1
25	Zoom info 2	Do not use
26	Zoom info 2 X	OSD column to start Zoom Info display field 1 (0 suppresses display) (Referring to camera assigned as 2)
27	Zoom info 2 Y	OSD row to display Zoom Info field 1 (Referring to camera assigned as 2)

Tours

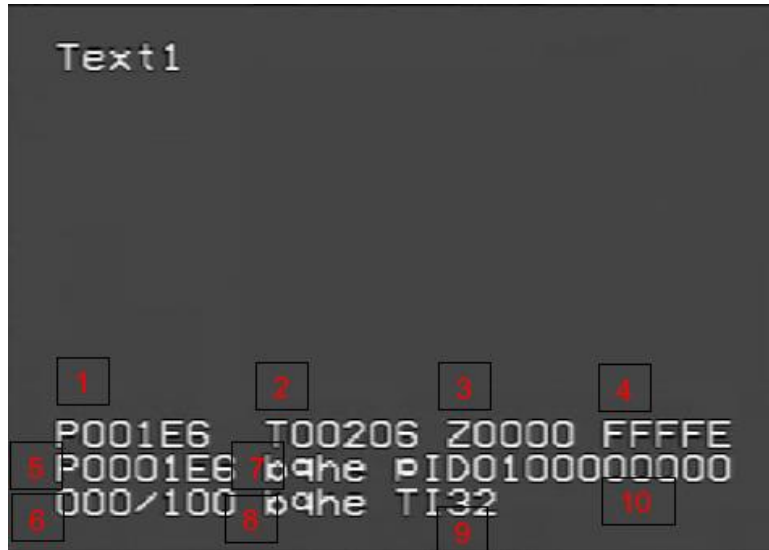
Step	Detail	
1	Select on the 'Tours' line	<pre> Silent Sentinel Oculus Version 2.019 (0000) C2 U SN:01912033 POST:00000000 >Communications >Configuration >Miscellaneous >Presets >Privacy patches >Telemetry >Tours >Video settings \$Exit menu </pre>
2	<p>Select the tour you wish to Edit. 01 to 16 are tours consisting of a list of preset positions, executed in order. M1 to M4 are Mimic Tours, set up by recording a sequence of commands. Running one of these tours replays the recorded commands with original inter-command timing. @ shows that tour has content.</p>	<pre> Select tour to edit... 01@ 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 M1 M2 M3 M4 </pre>

<p>2</p>	<p>From this menu you can;</p> <ol style="list-style-type: none"> 1. Manually run the tour 2. Edit the tour 3. Erase the tour 	
<p>3</p>	<p>Once edit tour is selected you can scroll to the right and select 'Add' to bring up the full list of presets. Select on a preset to add it to the tour.</p> <p>For Mimic tours you can only re-record them, not edit them.</p>	

<p>3</p>	<p>Once a preset is added select on that preset to edit;</p> <ol style="list-style-type: none"> 1. Slew Speed – the rate (15 is max speed) that the PT will move to the preset from the previous preset 2. Dwell time – the amount of time (seconds) that the unit stays at the preset 3. Show Preset label – whether the preset label is displayed on the OSD feed. 4. Remove Preset – remove from the tour 	 <pre> Tour Position Select preset 11 Slew Speed 15 Dwell (secs) 5 White LED Off Show Preset label Off \$Remove preset \$Exit menu </pre>
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Annex A – Debug Display

The Debug Display is an overlay that can be added to the OSD feed that displays certain transient information. To access this OSD preset 195 must be sent to the unit. When sent the following display is activated;



The below lists the default information that is provided (and shown in the above). Further debug information can be added and the description for this will be provided in consultation with Silent Sentinel.

Number	Description
1	Current Pan Motor Position Value in Hex
2	Current Tilt Motor Position Value in Hex
3	Current zoom position in Hex (0000 -> FFFF). 'Z' relates to the Camera / Lens configured as Camera 1 / Lens 1. 'z' relates to the Camera / Lens configured as Camera 2 / Lens 2.
4	Current focus position in Hex (0000 -> FFFC). 'F' relates to the Camera / Lens configured as Camera 1 / Lens 1. 'f' relates to the Camera / Lens configured as Camera 2 / Lens 2. Position FFFE indicates camera is in AF mode.
5	This provides 6 digits of the current Pan position, useful for HMD systems
6	Zoom Position as a percentage of the last controlled camera. This correlates to the case of the letter shown against the current Zoom / Focus position.
7	Status flags for current Pan activity. Upper case means flag set. Busy,Queued cmd pending,Halting,Encoder err,reason why Pan move was last stopped,Pan home sensor On, Idle.
8	Status flags for current Tilt activity. Upper case means flag set. Busy,Queued cmd pending,Halting,Encoder err,reason why Tilt move was last stopped,Tilt home sensor On, Idle.
9	Command receipt counter. This circles around at 99. Bumped by 1 on every good packet
10	The last Pelco D message received by the system. The message shown does not display the checksum. 'D' signifies that the command was valid and for a Pelco D Address associated with this system . 'd' signifies that either the command was for an ID not associated with this system or that the checksum does not match up with the contents of the message.

Annex B – POST Codes

During initialization the system goes through a Power On Self Test (POST) process. During this process various elements of the Motor and Payloads sub systems are tested. Should these systems pass all tests the result of the POST will be all 0's. However, if any element fails a number / letter is added to the POST Results denoting this failure. The letters / numbers correlate to the following;

POST Contents	Description
FF	BATRAM contents were restored from EEPROM or factory defaults (battery run down or "Reset Memory" requested).
1	Pan Testing failed to move Pan both ways, or Pan encoder did not match Pan motor steps.
3	Tilt Testing failed to move Tilt both ways, or Tilt encoder did not match Tilt motor steps.
5	Pan Homing failed to find Pan hardware Home (zero) position
6	Tilt Homing failed to find Tilt hardware Home (zero) position
7	Zoom testing failure on Analogue lens
8	Focus testing failure on Analogue lens
A	Error in testing Temperature or Humidity sensor
B	Error in testing Camera1 and/or Lens 1
C	Error in testing Camera2 and/or Lens2
D	Error in testing Camera3 and/or Lens3 (or special add-on processor)
E	POST was requested NOT to run by User interrupting it, or by setting POST level 0
F	(but NOT FF) Ran out of memory to build OSD menus (Fatal coding error)