# SWZ User Manual

## User Guide for the SWZ Switched Zoom PTZ Camera

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## Change History

| Version | Date | Change Summary | Author |
|---|---|---|---|
| v1.0 | 9/9/2016 | First Draft | RE |
| v1.1 | 14/9/2016 | Kit Amendments | RE |
| v1.2 | 1/11/2017 | Pinout Correction | RE |
| v1.3 | 21/11/2018 | Connections Update | RE |

## About the User Manual

This user manual describes the operation of the SWZ PTZ camera.

This user manual introduces the reader to the camera's operation, which includes a description of the various components in the camera kit and a guide to their use. As part of this, hardware interfacing, connections and camera configuration are described in detail.

Additionally the use of software tools to control the camera are explained.

The guide follows a step by step approach, describing the simple initialisation sequence to get the user up and running in the shortest possible time.

This is followed up with a description of technical specifications and dimensions.

## Warranty and Support

All Visual Engineering products are supplied as standard with a 12 month 'Return to Base' warranty.

In the event of a suspected product failure, users should contact the Visual Engineering support team on the telephone number +44 (0) 1206 211842 or please email us at:

support@visualengineering.co.uk

Should the fault persist or if the support team are unable to resolve the fault, it may be necessary to return the equipment.

Equipment should only be returned using the RMA (Returns Management Authorisation) process. Users should contact the support team on the above number and request an RMA form and RMA number.

## Kit Contents

The kit includes a SWZ switched zoom camera with either PAL or NTSC output video. The kit comes in a foam lined case and also contains the comms break out cable and a mains power supply with a range of wall connectors.

The kit contents are listed below, along with their part numbers.

- SWZ Camera PAL Version 110-2716
- SWZ Camera NTSC Version 110-2717
- Power Comms Break out Cable 110-3562
- Power Supply - AC/DC 15V 1.6A 110-8661
- USB Memory Stick - Support Software and Documentation 110-8679

**Note: Above image currently illustrates the cable connections provided in the old kit, now replaced with the power comms break out cable 110-3562**

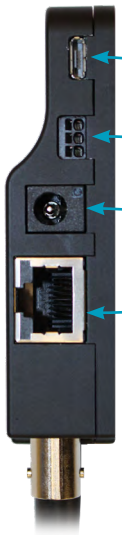
## Connections

The SWZ kit includes a power comms break out cable, part number 110-3562.

The cable assembly connects to the Fischer MiniMax connector on the base of the camera. All signals are then split out to their relevant connectors.

The connections are described below.

| Connector | Signal |
|---|---|
| BNC | CVBS |



| Connector | Signal |
|---|---|
| Micro USB | Serial Comms |
| EXT 232/485 | RS232/485 Comms |
| DC Coax | Power |
| RJ45 | Unused |

SWZ communications are supported via the micro USB and EXT 232/485 connectors.

The EXT 232/485 connector supports RS232 and RS485 comms, the pinout of the connector is described on the right.

| EXT 232/485 Pinout | |
|---|---|
| **RS232** | **RS485** |
| RX (to cam) | B |
| TX (from cam) | A |
| GND | |

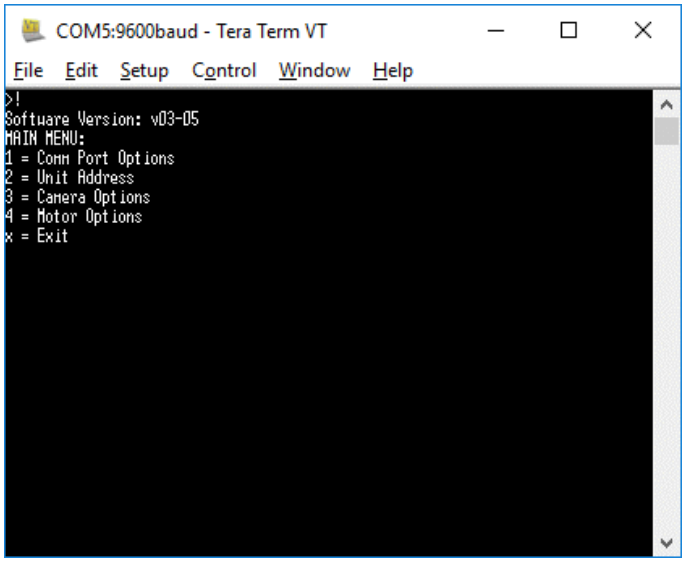
## Configuring the Camera

The SWZ can be configured for a specific user profile, to include; communications format & camera control protocol. Once configured the camera will remember these settings.

The camera is configured using a control menu which is only accessible at power on.

To access the control menu it is necessary to connect the camera to a serial comms software application, such as TeraTerm.

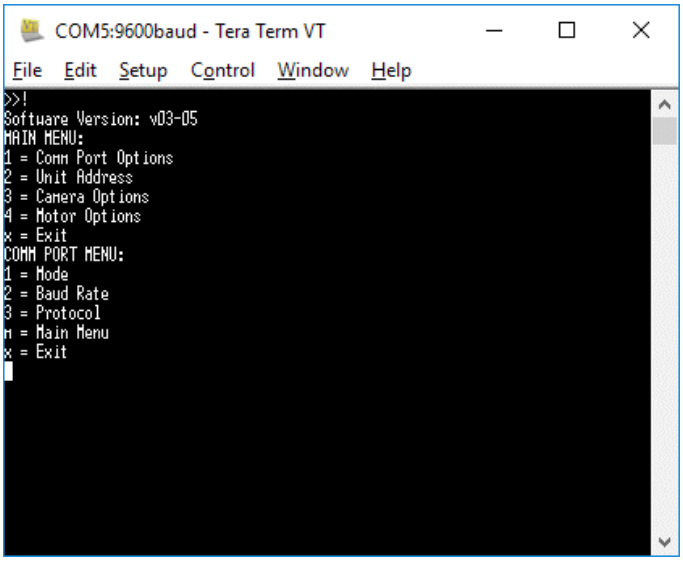
- Connect a Comm port on the PC to the micro USB connector on the comms break out cable.
- Open the terminal application and configure the Comm port to 9600 baud
- Re-power the camera, a > will appear and shortly after !
- As soon as the ! appears type ‘v’ ‘e’ in quick succession.
- The Main Menu shown on the right will then be displayed.



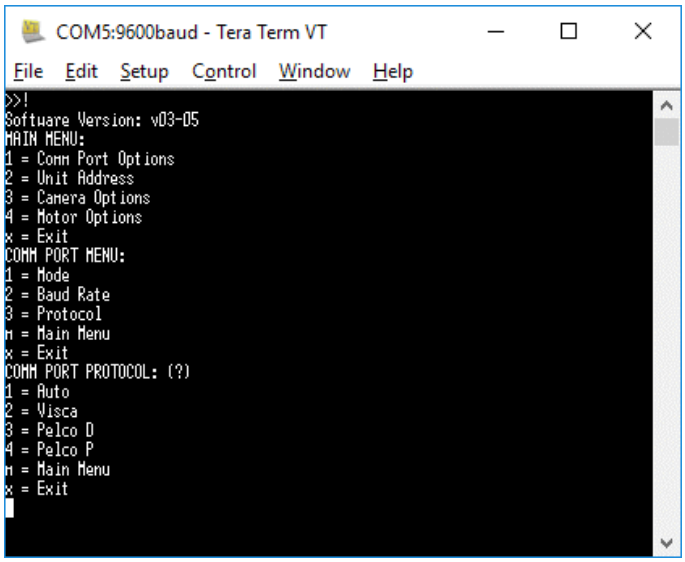

## Setting the Control Protocol

The SWZ supports a range of control protocols such as Pelco and Sony Visca.

- From the Main Menu type 1 for the Comm Port Options. The menu shown on the right is displayed.



- Now type 3 for the Protocol options. The current protocol is displayed in brackets.
- Select a protocol by typing the number of the new option.



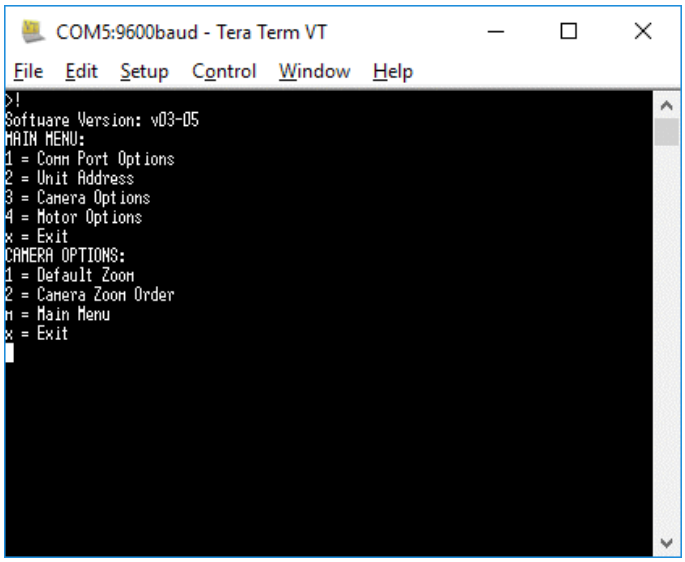

The other options of changing the camera's baud rate and mode can also be changed via the Comm Port Menu.

The user can return to the main menu at point by pressing the 'm' option.

## Camera Options

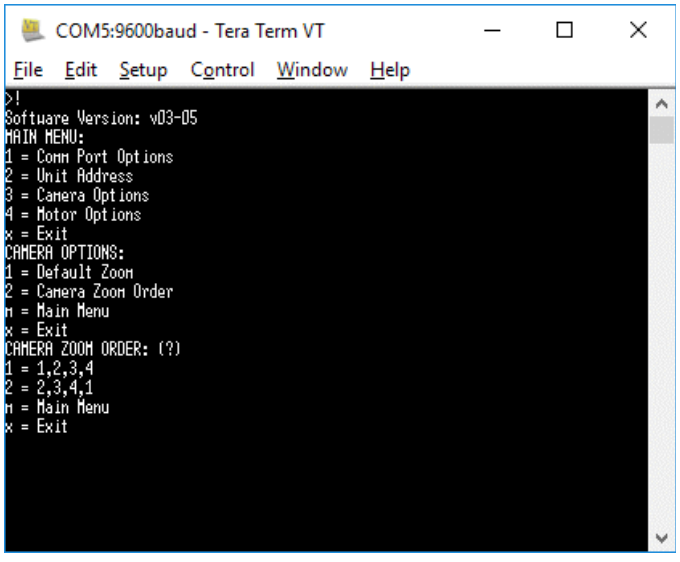
The configuration menus allows the user to set various camera settings.

- From the Main Menu type 3, Camera Options
- From the Camera Option Menu select whichever function is required




The order in which the different cameras in the SWZ are switched as it is zoomed in and out can be altered.

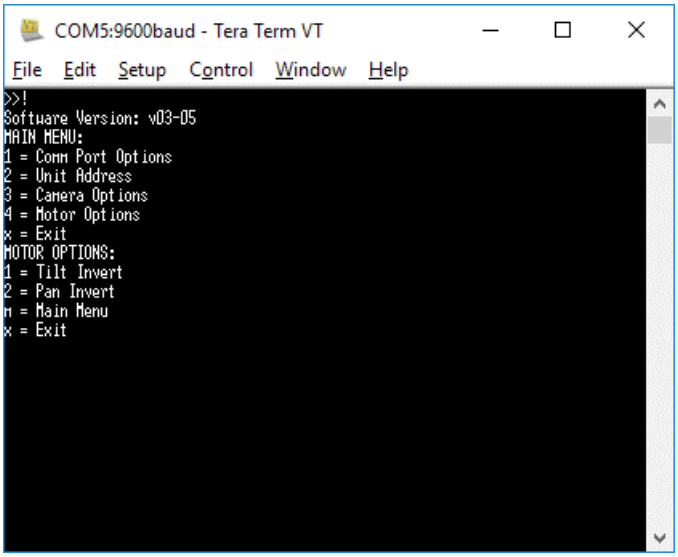
- From the Camera Options menu type 2, Camera Zoom Order
- Select either option 1 or 2 to reverse the order in which the cameras are switched



## Motor Options

The configuration menus allows the user to set various motor settings in the camera.

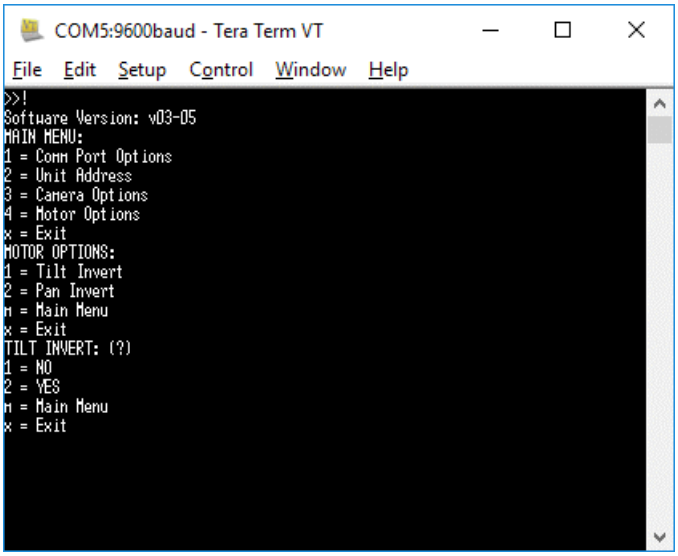
- From the Main Menu type 4, Motor Options
- From the Motor Options Menu select whichever function is required



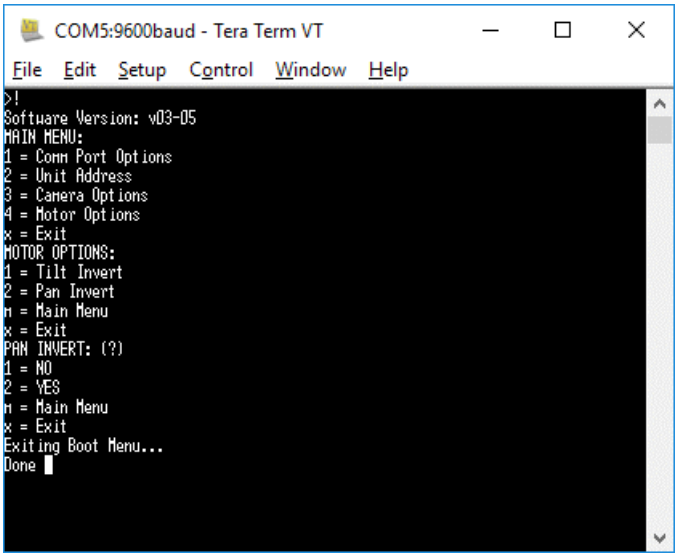

The direction in which the camera is tilted can be inverted.

- From the Motor Options menu type 1, Tilt Invert
- Select either option 1 or 2 to reverse the direction of the tilt

Similar control can be applied to the direction of the Pan.




Following changes made using the control interface exit the boot menu by typing x, the camera will now continue with its normal operation with the changes that were made.



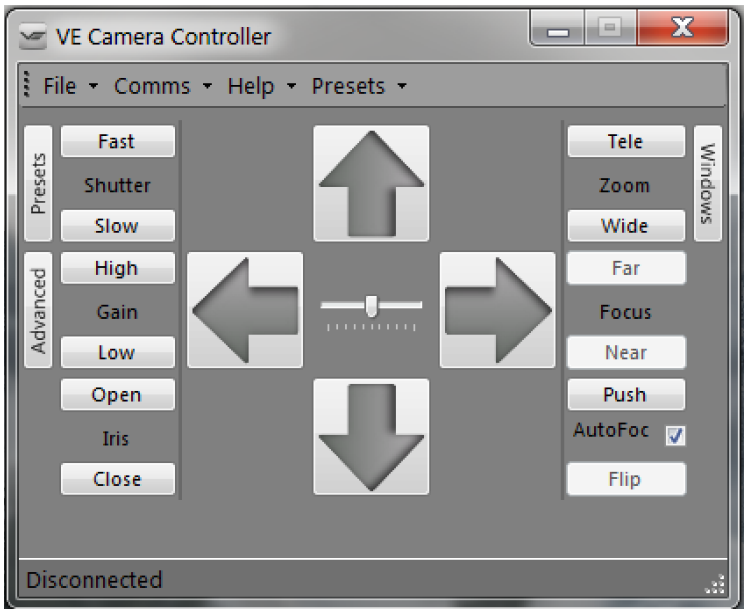
## Software Control

The SWZ camera supports serial communication control over RS232 and RS485. It supports PelcoD, PelcoP & Sony Visca protocols.

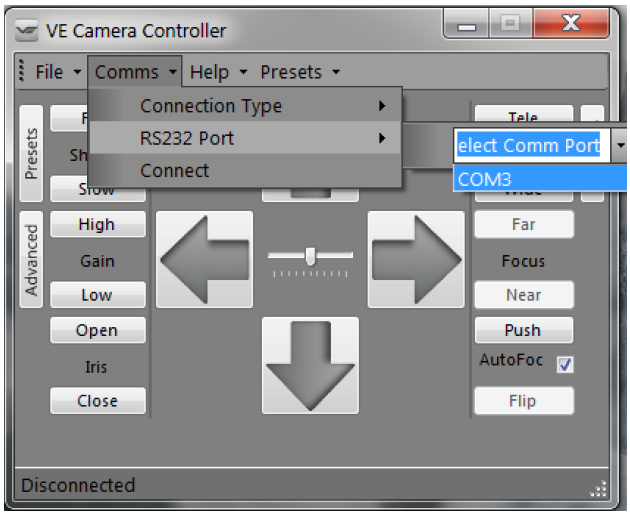
The user may choose to use a software controller of their choice or use the VE Camera Controller. This software application is included on the USB memory stick in the kit. It can also be downloaded from the Visual Engineering website:

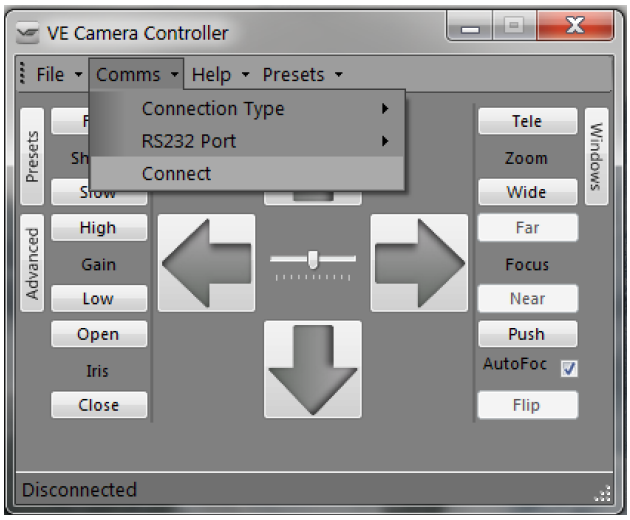
www.visualengineering.co.uk/support

The user should install the Software application on a PC. The image below shows what the software application looks like.

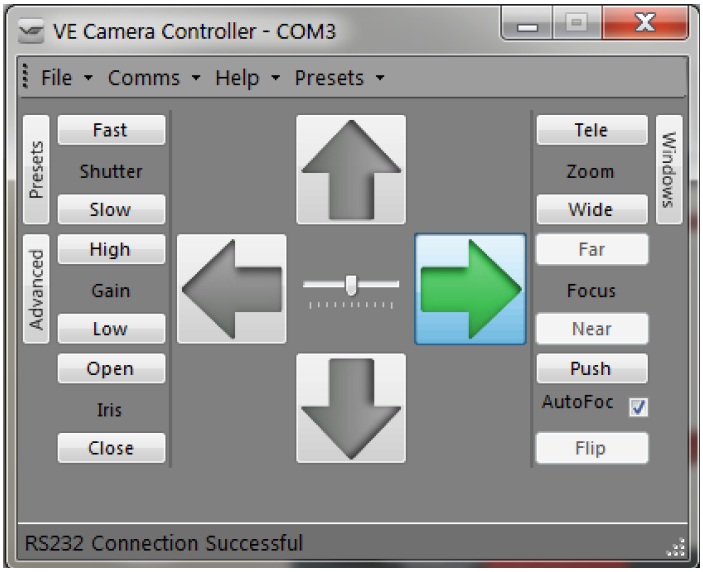


Connect the PC to the micro USB connection on the comms break out cable. The operating system of the computer will allocate this a COM port number. Once this connection between the comms lead and the computer's operating system has been made the user can go ahead and connect the application to the COM port. In the example below the port COM3 has been selected. Now select Connect.



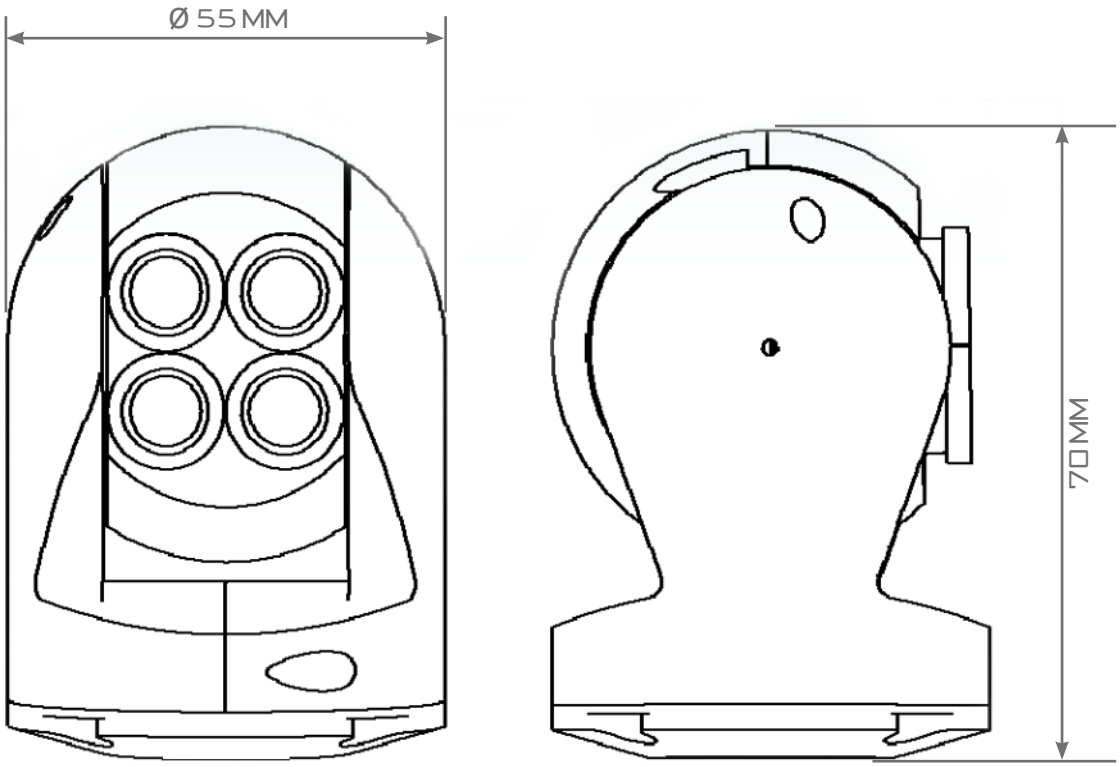

Now that the software application is connected the functions can be used. In the example below the pan right command has been selected. This will cause the SWZ camera to pan right. Similar commands for pan left, tilt up & down and zoom functions can also be tried out using the intuitive software user interface.



# Specifications

| Specifications | | | |
|---|---|---|---|
| **Camera Sensor** | 4 x 1/3" CMOS | **Protocol** | RS232/485 Visca, PelcoD |
| **Camera Sensitivity** | < 0.008 Lux | **Pan & Tilt Range** | 270° tilt, Continuous pan |
| **Camera Resolution** | >550TVL | **Pan & Tilt Drive Train** | DC Servo |
| **SNR** | >50dB | **Power Requirement** | 6-18V DC, 2W |
| **Field of View** | 60° - 7.5° Horizontal | **Environmental** | IP66 |
| **Focal Length** | 4, 8, 16 & 35mm | **Weight** | 148g |
| **Aperture** | f2 - f5 | **Dimensions** | ø 55 x 70mm |
| **Lens Type** | S-Mount, M12 | **Casing** | Aluminium |

## Dimensions

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