

*Please read this manual carefully before setting-up and using  
your unit*

# **Osprey Camera**

## **Operator & Installation Manual**

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## HANDLING OF ELECTROSTATIC-SENSITIVE DEVICES



### Caution

#### Handling of Electrostatic-Sensitive Devices

**Certain semiconductor devices used in the equipment are liable to damage due to static voltages.**

Observe the following precautions when handling these devices in their unterminated state, or sub-units containing these devices:

- Persons removing sub-units from any equipment using electrostatic sensitive devices must be earthed by a wrist strap via a 1M $\Omega$  resistor to a suitable discharge reference point within the equipment.
- Soldering irons used during any repairs must be low voltage types with earthed tips and isolated from the Mains voltage by a double insulated transformer. Care should be taken soldering any point that may have a charge stored.
- Outer clothing worn must be unable to generate static charges.
- Printed Circuit Boards (PCBs) fitted with electrostatic sensitive devices must be stored and transported in appropriate anti-static bags/containers.

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## WARRANTY STATEMENT

**Tritech International Limited** herein after referred to as **TIL**

TIL warrants that at the time of shipment all products shall be free from defects in material and workmanship and suitable for the purpose specified in the product literature.

The unit/system warranty commences immediately from the date of customer acceptance and runs for a period of 365 days. Customer acceptance will always be deemed to have occurred within 72 hours of delivery.

**Note:** Any customer acceptance testing (if applicable) must be performed at either TIL premises or at one of their approved distributors unless mutually agreed in writing prior to despatch.

### **Conditions:**

**These include, but are not limited to, the following:**

- 1 The warranty is only deemed to be valid if the equipment was sold through TIL or one of its approved distributors.
- 2 The equipment must have been installed and commissioned in strict accordance with approved technical standards and specifications and for the purpose that the system was designed.
- 3 The warranty is not transferable, except or as applies to Purchaser first then to client.
- 4 TIL must be notified immediately (in writing) of any suspected defect and if advised by TIL, the equipment subject to the defect shall be returned by the customer to TIL, via a suitable mode of transportation and shall be freight paid.
- 5 The warranty does not apply to defects that have been caused by failure to follow the recommended installation or maintenance procedures. Or defects resulting from normal wear & tear, incorrect operation, fire, water ingress, lightning damage or fluctuations in vehicles supply voltages, or from any other circumstances that may arise after delivery that is out with the control of TIL.  
(**Note:** The warranty does not apply in the event where a defect has been caused by isolation incompatibilities.)
- 6 The warranty does not cover the transportation of personnel and per diem allowances relating to any repair or replacement.
- 7 The warranty does not cover any direct, indirect, punitive, special consequential damages or any damages whatsoever arising out of or connected with misuse of this product.
- 8 Any equipment or parts returned under warranty provisions will be returned to the customer freight prepaid by TIL
- 9 The warranty shall become invalid if the customer attempts to repair or modify the equipment without appropriate written authority being first received from TIL.
- 10 TIL retains the sole right to accept or reject any warranty claim.
- 11 Each product is carefully examined and checked before it is shipped. It should therefore be visually and operationally checked as soon as it is received. If it is damaged in anyway, a claim should be filed with the courier and TIL notified of the damage.

**Note: TIL reserve the right to change specifications at any time without notice and without any obligation to incorporate new features in instruments previously sold.**

**Note: If the instrument is not covered by warranty, or if it is determined that the fault is caused by misuse, repair will be billed to the customer, and an estimate submitted for customer approval before the commencement of repairs.**

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## Safety Statements

 <b>NOTE</b>	<p><i>Throughout the manual certain potential problems, or further information relating to the installation, maintenance, understanding or use of the apparatus will be highlighted to the operator by indications identified by the adjacent symbol and text.</i></p>
 <b>CAUTION!</b>	<p><i>Throughout the manual certain safety or operational related comments and requirements will be highlighted to the operator by indications identified by the adjacent symbol and text.</i></p>
 <b>DANGER!</b>	<p><i>Throughout the manual certain safety or operational related comments and requirements that could lead to injury or loss of life will be highlighted by the adjacent symbol and text.</i></p>

## Technical Support

**Contact your local agent or Tritech International Ltd**

	<b>Mail</b>	<p><i><b>Tritech International Ltd.</b></i>                  Peregrine Road,                  Westhill Business Park,                  Westhill, Aberdeen,                  AB32 6JL, UK</p>
	<b>Telephone</b>	++44 (0)1224 744111
	<b>Fax</b>	++44 (0)1224 741771
	<b>Email</b>	support@tritech.co.uk
	<b>Web</b>	www.tritech.co.uk

**An out-of-hours emergency number is available by calling the above telephone number**

If you have cause to use our Technical Support service, please ensure that you have the following details at hand **prior** to calling:

- System Serial Number (if applicable)
- Fault Description
- Any remedial action implemented

Due to the expansion of equipment capabilities and the fact that new sub-modules are continually being introduced, this manual cannot detail every aspect of the operation.

## **Introduction**

The Osprey colour camera incorporates the latest design in CCD technology.

A camera power supply board provides all the necessary voltages for the camera module.

A line driver compensates attenuation of the video signal as it passes through the umbilical.

A water corrected port is fitted to optimise the picture quality.

The integration of this package provides an extremely robust unit that will push forward the limits of resistance in harsh environments.



## **Operating conditions**

The camera is compatible with any video recorders or monitor working with PAL standard or NTSC standard depending on the module version purchased. (Module selected at time of ordering).

The camera should not be used out of the limit conditions specified in this manual. For any special requirement please contact TRITECH INTERNATIONAL LTD.

Before attaching the connector to the camera ensure it is clean and lightly smear the male connector pins with silicon grease.

The power supply is polarised. Please ensure that the correct polarity is used before switching on the unit.

The camera is designed for use under water. Water has a cooling effect on the camera which means that it will become hot when operated in air.

It is acceptable to run the camera in air for testing or repair purposes, however, unless a considerable heat sink is used; it is not recommended that the camera be left to operate in air for extended periods as the life of the camera may be reduced.

An internal solder splash (jumper) is fitted on the PSU/Driver board to boost the video signal if required.

## Setting up Procedures

The power supply output is controlled through a regulator. It is set at the factory and does not require any further adjustment. If for any reason the output voltage for the camera is not present the regulator would have to be replaced.

If it is required to drive a long coaxial cable on your application, you must move the solder splash visible on the PCB (printed circuit board) to the opposite location, this will fit the compensation for the long line amplifier in circuit.

## FOCUS

Focus adjustment is done by rotating the front port housing by small increments while holding firmly the camera body in your hand until you find the right setting. Normally, no more than 1 turn in each direction will be required. If the port view is rotated fully clockwise or anticlockwise no damage will be done but it may be necessary to disassemble the front port housing from the body of the camera to free the lens.



## DISASSEMBLY PROCEDURE

 <b>CAUTION!</b>	<p>Maintenance of water integrity is the responsibility of the user.                  Internal damage caused by water ingress is not covered by product warranty unless the cause can clearly be identified as a manufacturing defect.</p>
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 <b>CAUTION!</b>	<p>It is recommended that all o-rings and back-up rings be replaced whenever the camera is opened to avoid water ingress.</p>
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 <b>CAUTION!</b>	<p>It is not advisable to open the camera unless absolutely necessary. Extreme care must be taken when reassembling to avoid fouling the pressure seals.                  It is recommended that all o-rings and back-up rings be replaced whenever the camera is opened to avoid water ingress.</p>
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To access the internal part of the camera:

Pull off the nylon cord retaining the front port housing to the camera body, rotate fully anticlockwise the front port housing as if you were adjusting the focus and gently pull out of the main camera body as straight as possible.

If the camera body is not fully free from the lens then the lens will pull out of the front port housing were it is retained by an O-ring. In that case unscrew the lens completely and insert it back in position in the front port housing by applying pressure to pass the O-ring.

When the front port housing is disassembled pull out the nylon cord retaining the connector end-cap and pull out the electronics. Disconnect the small connector at the back of the camera module to gain access to the PSU and video amplifier board

If required, fit the solder bridge on the right position to obtain the gain level required for the video signal.

Before reassembling inspect the O-rings for damage if possible replace them.  
 Clean and lightly smear the o-ring with appropriate silicon grease (e.g. MS-33) prior to fitting.

To reassemble the camera, follow the disassembly in the reverse order.

 <b>CAUTION!</b>	<p>Particular attention is to be made to the o-rings when rebuilding the camera. A small cut is enough to lose watertight integrity.</p>
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## **Water Corrected View-Port**

To disassemble the water corrected port, unscrew the front port housing and remove it. Remove the lens from the front port housing. Extract the front view-port retaining cord. The acrylic view-port can now be removed by pressing or tapping out from behind. Use a blunt instrument and soft cloth to prevent damage to the port surface.

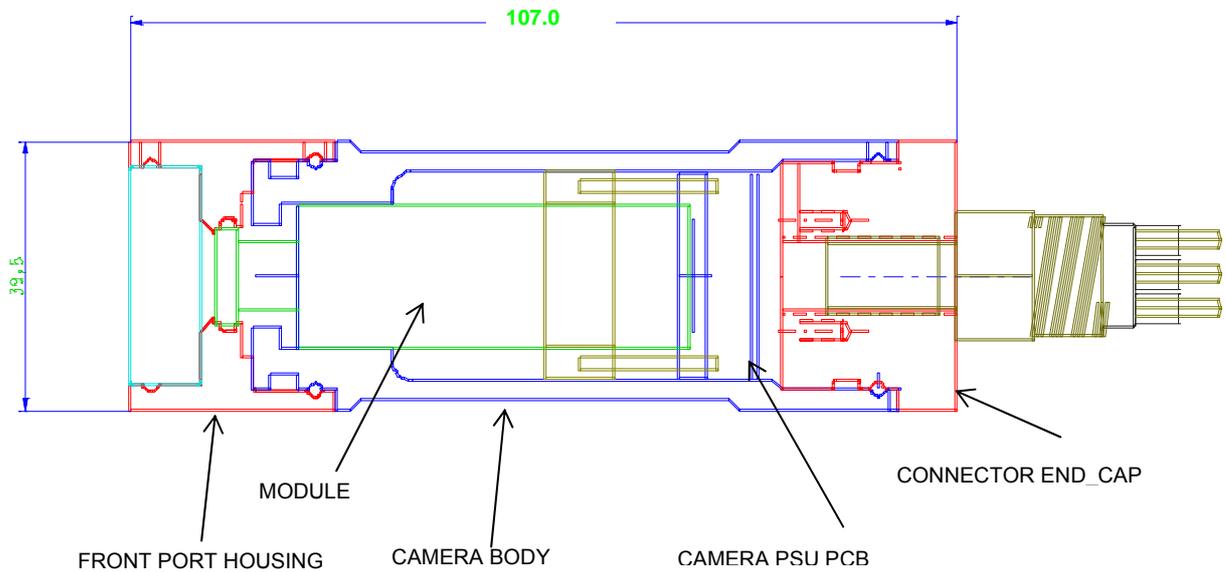
Before re-assembly inspect the O-ring for damage, clean and lightly smear it with silicon grease.

It is recommended that a new O-ring is fitted whenever the front port is removed.

To readjust the focus after disassembly rotate the front port housing clockwise until the preferred focus point is reached.



## ILLUSTRATION OSPREY



### Parts list

Front Port housing_____	PCAM11-P01
Main Camera Body _____	PCAM11-H02
Connector End-cap_____	PCAM11-H03
PSU/Driver board_____	PCAM11-PD3248
Water corrected port_____	PCAM11-WP01
Camera module_____	PCAM11-V07
Support camera module_____	PCAM11-V00
Hardware Kit_____	PCAM11-S1
O'ring set_____	PCAM11-R03

Comprising: Connector End-cap  
 Front port housing  
 Port retainer  
 Lens holder (Internal)

# **Appendix 1      Product Specification**

# **Appendix 2      Osprey      Camera      Pin Configuration**

# **Appendix 3                      Circuit Schematics**