

# SABRESWITCH

## TRIGGERBEAM PRO INFRARED BEAM SYSTEM Instruction Manual



IT IS ESSENTIAL TO READ AND UNDERSTAND THE ENTIRE INSTRUCTION BOOKLET BEFORE INITIAL OPERATION IN ORDER TO PREVENT DAMAGE TO THE UNIT AND TO ENSURE OPTIMUM OPERATION AND YOUR COMPLETE SATISFACTION.

# PRECAUTIONS

## Do

1. Ensure all equipment is protected against water ingress or immersion.
2. Ensure all cables and connectors are in good order.
3. Consider the optimum camera settings for the conditions. TriggerBeam Pro does not take control of your camera in respect of things such as shutter speed, aperture settings etc.
4. Keep batteries away from children. If swallowed seek medical attention immediately.
5. Discard/recycle appropriately any leaking, deformed, damaged or discharged batteries with regard to the environment.
6. Prevent any leakage from batteries contacting eyes, skin or clothing. It can cause eye damage or skin irritation. In the case of contact with your eyes, skin or clothing, flush the affected area with clean water. Seek medical advice as soon as possible in the case of contact with eyes and skin.

## Do Not

1. Use the equipment without reading and fully understanding this manual.
2. Make any connections/disconnections to any camera or other device without first ensuring compatibility with this equipment.
3. Make any connections/disconnections to a camera or other equipment with their power switched on.
4. Use any batteries, power sources or accessories not specified in this manual
5. Use any home-made or modified batteries or power sources.
6. Install batteries in reversed polarity (+ -) as damage may occur to the equipment.
7. Mix new and used batteries
8. Allow cables to become a trip hazard to yourself or other persons.
9. Allow young children to use the cables which may become a hazard.
10. Attempt to repair or modify the equipment as no user serviceable parts are included. Doing so may invalidate the warranty.
11. Use abrasive or solvent cleaners on this equipment. If necessary wipe clean only with a damp cloth and mild washing-up liquid.

## INTRODUCTION

The TriggerBeam Pro kit is a long range infrared beam that can be used in many photographic projects. The system can be connected directly to the cameras remote trigger socket or it can be used in conjunction with the Triggersmart system which provides enhanced control over the triggering conditions.

The system can be used indoors or outside to capture subjects and is ideal for wildlife, sporting events and temporary security, etc. State of the art microprocessor technology is employed which results in the system being able to operate reliably under most lighting conditions without the problems of false triggering, etc.

The heart of the system consists of the long range infrared Transmitter and the infrared Receiver. When lined up correctly a narrow beam will travel between the two points. Breaking the beam will cause the camera/Triggersmart to trigger.

The kit includes two Stakepods to mount the Transmitter and Receiver into the ground. Also supplied are weatherproof covers, cables with adapters and a 2 degree baffle.

## SPECIFICATIONS

TYPICAL SYSTEM RANGE	- Darkness - 30m max. With baffle 20m - Daytime bright sunlight - 26m . With baffle 17m
MAXIMUM RX RANGE	- 30m
TRIGGER TIME MIN.	- Minimum beam break time to trigger - 20ms (1/50th sec.)
TRIGGER DELAY TIME	- Up to 10ms (1/100th sec.)
IR TRANSMITTER BEAM	- 10 degrees. Wavelength 950nm.
TRIGGER OUTPUTS	- To Triggersmart or direct to camera
POWER REQUIREMENTS	- Tx x 3 AAA batteries, high power type - Rx x 2 AAA batteries, high power type or via Triggersmart
ON TIME	- Up TO 60Hrs with 1100mA Batteries
POWER CONSUMPTION	- Tx = 8mA Rx=1mA
SIZE	- Sensors (W)7.5cm x (D)5cm x (H)2.6cm
SENSOR MOUNTING	- ¼ inch UNC thread (standard tripod thread)
STAKEPOD HEIGHT	- 14cm
WEIGHT	- Sensors 50g Stakepods 30g.
WATERPROOFING	- IP53. IP63 with WP covers
TEMPERATURE	- 0 to 35° C. (operating). -10 to +50° C. (non-operating).
SHOCK	- 20 Newtons

## KIT CHECKLIST

- This manual
- x1 infrared Receiver
- x1 infrared Transmitter
- x2 Stakepods
- x2 weatherproof covers
- x1 cable (3.5mm jack to 2.5mm jack 3m in length)
- x1 jack adapter (2.5mm to 3.5mm)
- 1 x 2° infrared beam baffle

## POWER REQUIREMENTS

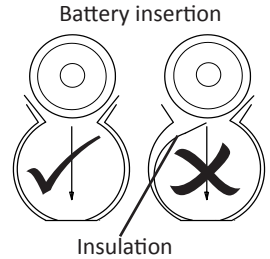
The TriggerBeam Pro is powered by AAA batteries. These should be of the high power type. To gain access to the battery compartments in the Transmitter and Receiver it is necessary to remove the underside cover by releasing the 2 screws in the base. Do not use metal tools to remove the batteries or the circuit boards may be damaged.

**Ensure that the batteries are the correct way round before replacing the cover. Do not remove the plastic insulation around the battery clips or shorting could occur. Always replace the covers carefully so as not to damage the filters and LEDs.**



The Transmitter is powered by 3 x AAA cells as shown above. Insert the batteries as previously described.

The Receiver is powered by 2 x AAA cells as shown above. Insert the batteries as previously described. The batteries are optional when the system is powered via Triggersmart. No damage will occur by leaving them in place in this instance.



## OPTIONAL EQUIPMENT (PURCHASE SEPARATELY)

- |    |          |   |
|----|----------|---|
| 1. | MCT-1    | Triggersmart system                       |
| 2. | CT-1     | 5m camera trigger extension cable         |
| 3. | CS-1     | 5m sensor extension cable                 |
| 4. | ADAPT-XX | Camera adapter cables - see cable section |
| 5. | MPT-1    | Low voltage supply for Triggersmart       |
| 6. | TP-1     | Mini tripods for the TX/RX                |
| 7. | AS-1     | IR beam alignment aid                     |
| 8. | TBR-1    | Additional IR Receiver                    |
| 9. | TBT-1    | Additional IR Transmitter                 |

## BRIEF OVERVIEW

The two modules are needed for operation. The infrared Transmitter unit sends a narrow infrared beam to the infrared Receiver module which can be mounted up to a distance of 30m away dependent on local conditions.

When the beam is broken by an object, a person or animal passing through it, the camera/Triggersmart is triggered to capture the image. Either still or video cameras can be used.

The beam width can be reduced in width to improve detection of small objects at shorter range by using the baffle provided. All connections are made from the Receiver.

Weatherproof covers are provided to protect the modules in wet conditions.

## IR TRANSMITTER

### INFRARED TRANSMITTER

At the rear of the unit a switch is provided to turn the TRANSMITTER on and off. The POWER LED will light when it is on and transmitting the IR beam.

When the Transmitter (TX) is on and lined up correctly, the unit sends an invisible beam that will be detected by the second unit, the Infrared Receiver (RX). The beam is no more than 10° wide and has a range of up to 30m subject to local conditions.



Power Indicator

On/Off Switch

### INFRARED RECEIVER

The INFRARED RECEIVER has a rear panel a switch to select power from the internal batteries or via TRIGGERSMART. The unit has two 3.5mm jack outlets, one to connect directly to the camera/flash remote trigger socket and the other to the TRIGGERSMART sensor input. It is important to select the correct socket for each function or it will not trigger the camera/TRIGGERSMART correctly.

An LED is provided that has a dual function. When the LED is on and not flashing, it means that the unit is powered up correctly but no IR signal is being received. When the LED is flashing it means that the IR signal is being received from the Transmitter and is ready to capture an event. When the IR beam is broken the LED goes back to the steady state during the time that the beam is broken.



Power Source

Power/Signal Indicator

Outputs



2° baffle in place

Note: If the Receiver is connected to Triggersmart, ensure that the rear panel switch on the MCT-1 controller is switched to 'Infrared' the position. Refer to the Triggersmart manual for setting up.

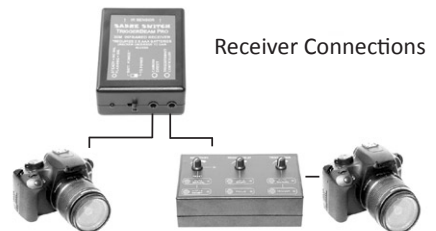
The Receiver module needs to be aligned accurately with the Transmitter within the 6° angle. If very small objects need to be detected, the 2° baffle should be used. This can be attached to the front of the Receiver module which restricts the angle of the received beam to only 2°. Therefore, great accuracy can be achieved when capturing small objects. However the range will be reduced.

### CABLE CONNECTIONS

The kit is supplied with a 3m x 3.5mm jack cable and adapter. This will connect the Receiver to the Triggersmart controller or camera. Longer cables are available if required.

The cable and adapter provided will connect directly to many popular camera models. Adapters for other camera are available separately. Go to <http://www.sabreswitch.co.uk/pdfs/smartcable.pdf> to select the cable adapter for your model of camera.

In addition, the camera outlet of the Receiver will connect to most proprietary radio link triggers such as Pocket Wizard, etc.



Receiver Connections

## TRIGGER INPUT TO CAMERA - IMPORTANT SAFETY INSTRUCTIONS

Every consideration has been taken to ensure correct operation of this product with most cameras. However, no connection to a camera or other equipment should be made unless the operator is certain of the compatibility of the equipment. No liability can be accepted by the Company for any consequential fault or damage caused to any equipment not supplied by the Company.

## SETTING UP PROCEDURE

1. Mount the Receiver securely pointing in the direction facing the intended Transmitter site.
2. Make sure that the Receiver vertical angle is correct.
3. Switch on the Transmitter. The LED should light.
4. Switch on the Receiver and the LED should light in a steady state.
5. Test the beam by pointing the Transmitter towards the Receiver, the Receiver LED will then FLASH to indicate that it is locked onto the IR beam. This should be carried out a few feet away.
6. Move the Transmitter to its final position ensuring it is lined up with the Receiver.
7. For distance up to 15m it is very easy to line up the beam. Further away it will become progressively more difficult to line up the beam.
8. When you are happy that both modules are in their final positions and an IR signal is being received, connect the trigger cable to the camera or Triggersmart as required.
9. Breaking the beam will now cause the camera/Triggersmart to trigger.

The optional **AS-1 Alignment Aid** module is a handy addition to the family. It can be plugged into either the Receiver or into the Triggersmart controller when used. When the IR beam is misaligned, a very bright LED will glow on the module. The LED will extinguish when the beam is lined up. After use it can be unplugged, switched off or left in situ.

## THE STAKEPOD

This is a simple but unique device which allows the user to mount the sensors by pushing the Stakepod directly into soft ground. The top of the Stakepod has a standard camera tripod thread and is primarily designed to mount the sensors but it could also be used to mount cameras and other equipment.



### INSTALLATION -

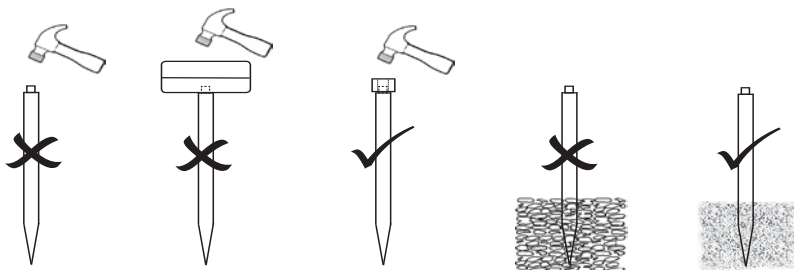
Select soft ground into which the Stakepod may be mounted. Do not attempt to push it into an unyielding surface such as compacted soil or gravel or rocky ground. Installation should always be carried out without the equipment attached.



A mallet may be used to lightly tap the Stakepod into the ground but the nylon collar provided must be used as shown below or the thread will be damaged.

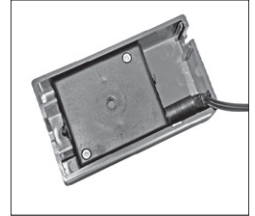
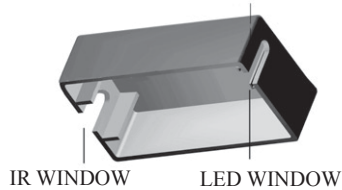
When connecting the Sensors or other equipment do not over tighten.

After use, wipe off dirt and moisture. To keep your Stakepod in good condition, silicon or beeswax furniture polish may be used.



## WEATHERPROOF COVER

The TriggerBeam Pro modules need to be protected from adverse weather conditions. Sabreswitch has come up with a cost effective solution using a weatherproof cover that simply sits over the modules and cable connections.



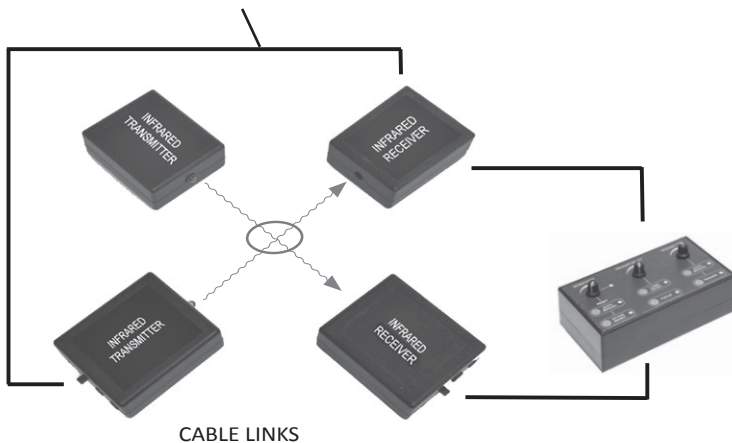
## ADDING A SECOND TRANSMITTER AND RECEIVER

With a single Transmitter/Receiver the subject can trigger the camera anywhere along the beam line - hence it may not be within the camera's field of view. By adding a second Receiver and Transmitter, the user can set up a 'sweet spot'. Now the subject has to break two IR beams, with the camera only triggering when BOTH beams are broken. This is our definition of a 'Sweet Spot'.

This facility is only available when operating in conjunction with Triggersmart. Extra TriggerBeam Pro modules can be used or use the IRTX/IRRX modules that are supplied with the Triggersmart kit but the latter is a short range product.

Note the cable configuration below.

Cable - only required when using the Triggersmart IRTX/RX



# PRODUCT WARRANTY

THE MANUFACTURER warrants for 12 months to the original purchaser that THE MANUFACTURER'S products are free from defects in material and workmanship under normal use and service for the period specified commencing upon the date of purchase from an authorised dealer.

This Limited Warranty is conditional upon proper use of the product by the purchaser.

This Limited Warranty does not cover: (a) defects or damage resulting from accident, misuse, abuse, neglect, unusual physical or electrical stress, modification of any part of the product, or cosmetic damage; (b) equipment that has a serial number removed or made illegible; (c) all plastic surfaces and other externally exposed parts that are scratched or damaged due to normal use; (d) defects or damage from improper testing, operation, maintenance, installation, adjustment, or service of the products.

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THE WARRANTIES GIVEN IN THIS LIMITED WARRANTY, TOGETHER WITH ANY IMPLIED WARRANTIES COVERING THE MANUFACTURER'S PRODUCTS, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY.

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Unit 4, Alder Hills industrial Estate, 16 Alder Hills  
Poole, Dorset. BH12 9AS

Tel: 044 (0)1202 733123 Fax: 044 (0)1202 737428  
Email: [info@flaghead.co.uk](mailto:info@flaghead.co.uk) Web: [www.flaghead.co.uk](http://www.flaghead.co.uk)

