

# **SABRE SWITCH**

## **TRIGGERSMART THE MCT-1 MOTION CAPTURE 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.**



# CONTENTS

|      |                                          |                    |
|------|------------------------------------------|--------------------|
| i    | Precautions                              | 2                  |
| ii   | Introduction                             | 3                  |
| iii  | Pack Check List                          | 3                  |
| iv   | Power Requirements                       | 3                  |
| v    | Optional Equipment (ordered separately)  | 3                  |
| vi   | Brief Overview                           | 4                  |
|      | Sensor Units                             | 4                  |
|      | The MCT-1 Control Unit                   | 4                  |
|      | The Control Unit Explained               | 5                  |
|      | The Rear Panel                           | 8                  |
| vii  | Remote Sensors and Transmitter Modules   | 8                  |
|      | Infrared Transmitter/Sound Sensor Module | 8                  |
|      | Infrared Receiver/LIS Sensor Module      | 8                  |
| viii | Connecting the System - Sample Setup     | 9                  |
|      | Sample Scenario 1 - Sound Detection      | 9                  |
|      | Sample Scenario 2 - Light Detection      | 11                 |
|      | Sample Scenario 3 - Infrared Beam        | 13                 |
|      | Sample Scenario 4 - Manual Trigger       | 15                 |
|      | Sample Scenario 5 - Auxiliary Output     | 15                 |
| ix   | Specifications                           | 16                 |
| x    | Trigger Input to Camera                  | Inside Back Cover  |
| xi   | Product Warranty                         | Outside Back Cover |

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

## INTRODUCTION


The MCT-1 MOTION CAPTURE SYSTEM is designed for use by both professional and amateur photographers alike. It offers a way of remotely capturing digital still and motion images. The camera is activated by the use of sensors that trigger the camera on the detection of sound, light or on the interruption of an infrared beam. This ability is enhanced by using the MCT-1 control unit which offers the ability to fine tune the sensitivity of the remote sensors and the actuation of the camera shutter.

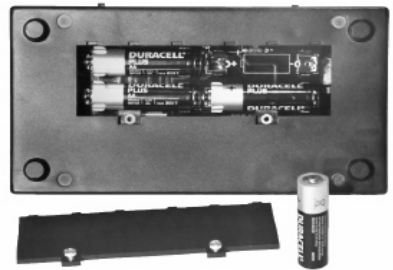
## PACK CHECK LIST

1. This manual
2. The main MCT-1 Control Unit.
3. x1 combined infrared receiver and light intensity sensor unit (individually selectable).
4. x1 combined infrared transmitter and sound sensor unit (individually selectable).
5. x2 14cm mini tripods for use with the transmitter/sensor units.
6. x1 cable (3.5mm jack to 3.5mm jack 3m in length).
7. x1 cable (3.5mm jack to 3.5mm jack 5m in length).
8. x1 camera trigger cable (2.5mm jack to 2.5mm jack 3m in length).
9. 1 x 2<sup>0</sup> infrared beam baffle.

## POWER REQUIREMENTS

The MCT-1 is powered by 4 x AA non-rechargeable batteries. These should be of the high power type. To gain access to the battery compartment, it is necessary to remove the underside cover by releasing the 2 dome 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.**

On the rear panel is a DC power jack provided to plug in a mains powered low voltage supply. It is recommended that the MP-1 power supply is used. The supply must be double insulated showing the correct label thus . The output must be 6 volts DC (VDC) with the centre pin of the DC connector being positive (+). When the power supply is connected to the socket, the internal batteries are disabled.



## OPTIONAL EQUIPMENT (ORDERED SEPARATELY)

1. MP-1 Battery life may be prolonged by the use of this mains to 6v DC supply.
2. IRTXB A self-contained, battery operated remote infrared transmitter unit.
3. CT-1 5m camera trigger extension cable.
4. CS-1 5m sensor extension cable.
5. TT-6 Slave 240v Power Timer/Controller to power photofloods etc (including a 2m control cable).
6. CP-1 5m extension control cable for the TT-6 Power Controller.
7. TS-1 Tilt sensor switch.

## **BRIEF OVERVIEW**

### **THE SENSOR UNITS**

**THE SOUND SENSOR.** A sensitive microphone is used to detect any sharp sound, such as an impact or the sound of breaking glass. When detected the unit operates the camera shutter and, if necessary, the camera's internal flash and/or additional slave flash units.

**THE LIGHT INTENSITY SENSOR (LIS).** This unit may be used at night or in low light situations to trigger the camera on the detection of a rapid change in ambient light levels, such as the detection of fireworks exploding or lightning flashes. This unit can also be utilised to remotely operate a slave flash connected to the controller on detection of a flash from a flash gun on the camera, etc.

**THE INFRARED TRANSMITTER (TX) AND RECEIVER (RX) UNITS.** Two units are needed for this operation. The infrared transmitter unit transmits a narrow infrared beam that is detected, at a distance of up to 2m, by the infrared receiver unit.

If the beam is broken by an object or animal passing through it, the camera can be triggered to capture that object either on a still camera or video camera.

The beam width can be reduced in width to improve detection of the movement of small objects.

### **THE MCT-1 CONTROL UNIT**

This is the heart of the system that allows the operator to have complete control of the sensitivity of the sensors to obtain optimum performance.

A delay may be introduced between the device sensing an input and the camera triggering to ensure that the object is captured at the correct time.

A variable trigger timer can be used to capture a single shot or multiple events by activating the camera. It is possible to use the sports mode on the camera, thus taking a number of successive shots for the length of time chosen by the operator.

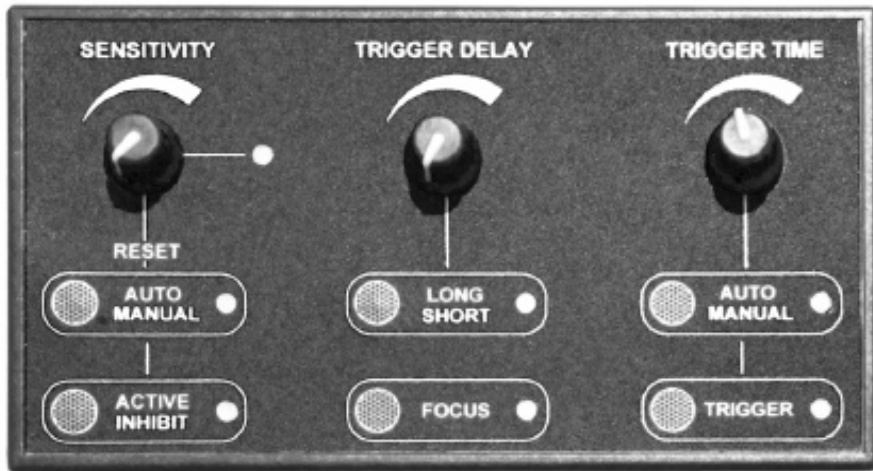
Various other modes can be set for single shot, random events or to keep the lens open for a specific time when the camera is set to 'B' OR 'BULB' exposure.

The control unit has an output that is connected to the camera trigger and has a second output channel to control multiple pieces of equipment such as additional cameras, flash units, flood-lights, etc, via the TT-6 POWER CONTROLLER.

## THE CONTROL UNIT EXPLAINED

The control unit is housed in a tough but compact case that is splash-proof and has a wipe clean surface that incorporates LED indicators and touch switches.

The control panel houses three rotary control knobs and six touch sensitive switches. The operation and description of these is described below.



### THE SENSITIVITY CONTROL

This is used to adjust the degree of sensitivity of the selected sensor to suit various conditions and provide the optimum settings.

Rotation of the control knob clockwise increases the sensitivity of the input device. Rotate the knob until the LED illuminates, then turn it back anti-clockwise a little until the light just extinguishes. This is the optimum setting for the sensor chosen. The setting will be different depending upon the individual sensor fitted.

### AUTO ARM

The AUTO ARM function can be set to either automatic or manual mode.

When AUTO ARM is selected the LED will display GREEN. In this mode the camera trigger will automatically reset after each detection and operation of the camera ready for the next event.

When MANUAL is selected the LED will display as RED. In this setting the camera will trigger only once and will need to be reset manually. This prevents multiple operation when not required.

### TRIGGER INHIBIT

If the AUTO ARM switch is set to MANUAL, the LED will illuminate RED to show that the system is inhibited and the camera will not trigger. On operation of the switch the system becomes

armed, the LED will glow GREEN and the system is then ready to receive the next input from the sensors which will trigger the camera.

If the AUTO ARM switch is set to AUTO the LED will glow GREEN to indicate that the system is armed and the camera will be triggered by the next event and each subsequent event without intervention. (The LED will also glow RED during a triggering operation.)

### **TRIGGER DELAY**

When an event activates the system the camera is triggered but triggering can be delayed by introducing a desired time lag by the use of the TRIGGER DELAY control. When rotated clockwise the lag between the device sensing an event and the shutter being released is increased.

LONG or SHORT time ranges can be selected by the operation of the switch. LONG delay is indicated by a GREEN LED and SHORT by a RED LED.

In the case of the SHORT delay selection the resulting time lag between activation of the unit and the camera triggering will be between 1/1000th to 1/10th second. The LONG delay will be adjustable between 1/10th to 10 seconds. Times stated are approximate and a degree of experimentation is required to find the precise delay required.

### **TRIGGER TIME**

Ordinarily, when a camera shutter release button is depressed by the photographer the shutter is operated once unless the camera is set to multiple exposure modes, such as Sports Mode. Continued pressure on the shutter release button will mean continued activation of the shutter resulting in multiple images being recorded.

The TRIGGER TIME control allows the operator to set the time that the camera's shutter release button will be activated, ie electronically 'held down'. This can be selected via the rotary control between approximately 1/1000th of a second to 10 seconds. (It has been found that some models/makes of camera will not trigger at the minimum setting but other makes will. This is not a fault of the unit.)

If the camera is set to 'B' OR 'BULB' exposure, for instance, the length of time that the shutter remains open will be that set by the TRIGGER TIME control.

This also applies to multiple exposure modes, such as Sports Mode, when the TRIGGER TIME setting dictates the time that the camera shutter is being operated and multiple shots being recorded.

### **TRIGGER MODE**

The TRIGGER TIME can be operated in two modes, MANUAL (RED LED) or AUTO (GREEN LED).

In MANUAL mode, the length of time of operation will be dictated by the length of time the TRIGGER switch is being depressed by the user. This prevents the camera from being triggered automatically by the control unit.



In the AUTO mode the trigger length will be dictated by the time set on the TRIGGER TIME control of the MCT-1.

### **TRIGGER SWITCH**

When the TRIGGER switch is depressed the camera will be operated for the time that the switch is held depressed despite the other control settings. The TRIGGER LED will light for as long as the trigger is operating in MANUAL or AUTO modes.

When the switch is operated the focus will automatically be activated. Therefore, both the focus and the trigger lights will be lit.

### **CAMERA FOCUS**

By pressing this switch and the camera set to auto-focus, the camera can be remotely focused dependent upon the make and model of the camera and the chosen setting.

### **REAR PANEL**



The rear panel of the unit provides connections and switches relating to power supply, mode, sensor input 1 and 2 and trigger outlets to camera and auxiliary units.

The mode switch selects the type of input from the sensors, either LIS/SOUND or INFRARED.

The sensors can be input directly into either port 1 or 2. In the case of the INFRARED transmitter and receiver units, these can be plugged directly into ports 1 and 2 or daisy-chained together.

Two trigger outputs are supplied. These are marked CAMERA and AUX. and allow for the camera to be connected, and/or a slave flash unit, to another camera or other similar equipment. Output 1 provides camera trigger AND auto-focus. Output 2 provides trigger only with NO auto-focus.

The 6v DC supply input socket and the Control Unit power ON/OFF switch is also situated on the rear panel.

## REMOTE SENSORS AND TRANSMITTER MODULES

Two splash-proof remote units are supplied. These can be used on a flat surface or mounted on the small tripods supplied. Standard tripods can be used for free-standing situations.

### INFRARED TRANSMITTER/SOUND SENSOR MODULE



On the rear of the unit a switch is provided to select the INFRARED or SOUND modes and two 3.5 mm jack sockets to connect to the control unit (or in the case of infrared operation, to the other unit).

When INFRARED TRANSMITTER (IR TX) is selected, the unit sends an invisible beam to be detected by the second unit, the INFRARED RECEIVER (IR RX). The beam is no more than 6°

wide and so the two units must be aligned quite accurately.

When the switch is set to SOUND, the unit utilises its integral sensitive microphone to transmit a signal to the MAIN CONTROL UNIT.

**Note: When used in the IR TX mode, looking directly into the invisible beam may cause eye damage.**

### INFRARED RECEIVER/LIS MODULE



In a similar way to the IR TX/SOUND unit, this module has a rear panel containing a switch to select LIGHT INTENSITY SENSOR (LIS) or INFRARED RECEIVER (IR RX). It also has two 3.5 mm jack sockets to connect in a similar way to that of the previous unit.

When this unit is set to LIS it is possible to detect sudden increases in light intensity, such as lightning. This is dependent on the amount of ambient light and will be found to be most

accurate in low light or dark situations.

When the switch is selected to use the INFRARED SENSOR (IR RX) function, the module needs to be aligned accurately with the IR TX unit within the 6° angle. When aligned correctly the beam will make the circuit and when broken the unit triggers the MAIN CONTROL UNIT.



2° baffle in place

If very small objects need to be detected, a 2° baffle is supplied. This can be attached to the front of the IR RX module and restricts the angle of the received beam to only 2°. Therefore, great accuracy and sensitivity can be achieved when capturing small objects.

## CONNECTING THE SYSTEM – SAMPLE SETUP

**Note:** Before connecting any equipment of any kind ensure that each item is compatible with the MCT-1 unit and the camera. No liability will be accepted by the Company for any damage or loss resulting from the connection of incompatible or faulty equipment.

**Note:** Before connecting or disconnecting any item ensure that all units are switched off.

**Note:** Ensure that all equipment is adequately protected from the ingress of liquids or the effects of excessive high or low temperatures.

### SAMPLE SCENARIO 1 – SOUND DETECTION



Sound/LIS connections

For this scenario the following equipment is used:-

1. Your camera of choice (ensuring compatibility)
2. Camera tripod (as required)
3. The MCT-1 Control Unit
4. The INFRARED TRANSMITTER/SOUND SENSOR UNIT
5. A 3.5 mm jack to 3.5 mm jack cable
6. A 2.5 mm jack to 2.5 mm jack camera trigger cable

#### Method

1. Before switching on the power switch of the MCT-1 and having inserted the batteries correctly into the control unit (and/or utilising an MP-1), operate the MODE switch on the rear panel of the MCT-1 shown as LIS/SOUND OR I.RED to the left, to select LIS/SOUND.
2. Operate the switch on the rear panel of the INFRARED TRANSMITTER/SOUND SENSOR UNIT from IR TX to SOUND.

3. Connect the INFRARED TRANSMITTER/SOUND SENSOR UNIT by inserting the 3.5 mm jack into one socket on the rear of this unit, indicated as TO CONTROL, to the main MCT-1 control unit by inserting the other end of the 3.5 mm jack cable into either of the sockets on the rear of the MCT-1 marked TO SENSORS 1 or 2.
4. With the camera switched off, connect the camera to the MCT-1 using the 2.5 mm jack cable inserted into the socket on the rear panel of the MCT-1 unit marked TRIGGER OUT – CAMERA and to the 2.5 mm remote control socket on the camera of choice.
5. Switch on the power to the MCT-1 unit with the POWER ON/OFF switch on the rear of the MCT-1 unit.
6. Place the INFRARED TRANSMITTER/SOUND SENSOR UNIT close to the subject on the table surface for best effect and adjust the SENSITIVITY, increasing the level until the orange LED illuminates. When the LED illuminates turn the control anti-clockwise until the LED just extinguishes. This is the optimum position. If the control is set too high then false triggering may occur.
7. Set the RESET – AUTO/MANUAL switch to the required position.
8. Set the TRIGGER DELAY fully to anti-clockwise and the TRIGGER DELAY switch to SHORT (RED LED).
9. Set the TRIGGER TIME control fully anti-clockwise.
10. Switch the TRIGGER TIME – AUTO/MANUAL switch to AUTO (GREEN LED).
11. Focus the camera, either via the FOCUS switch on the MCT-1 or by way of the camera controls. It may be found that switching the camera lens to manual focus allows the camera to trigger at a faster reaction time as focusing is no longer necessary.
12. Consider the need for extra lighting to illuminate the subject correctly for the desired effect.
13. Set the camera to the required settings in respect of shutter speed, aperture, etc, having regard to depth of field and the amount of movement to be allowed in the shot.
14. Set the SENSITIVITY - ACTIVE/INHIBIT switch to ACTIVE (GREEN LED). The camera will now be triggered at the next detection.

15. Drop an object onto the table in the camera's view area and the sound of the impact will trigger the camera. The microphone is sensitive enough to capture the sound of quite small objects but extraneous noise must be kept to a minimum.

16. Trial and error in the settings used in respect of the camera, shutter speed, aperture, lighting, trigger delay, etc, will enable the operator to find the optimum settings for the results required. (The range of possible settings configurations is almost endless when combined with those of the camera.)

By trial and error, extremely good results can be achieved in a very short space of time.

**Note:** *If using breakable objects, such as glass, remember to wear the necessary safety equipment or protect yourself from injury.*

## **SAMPLE SCENARIO 2 – LIGHT DETECTION**

For this scenario the following equipment is used:-

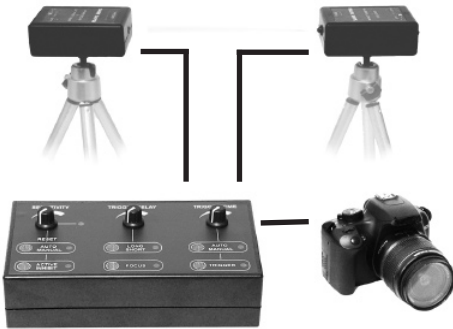
1. Your camera of choice (ensuring compatibility)
2. Camera tripod (as required)
3. The MCT-1 Control Unit
4. The INFRARED RECEIVER/LIGHT INTENSITY SENSOR UNIT
5. A 3.5 mm jack to 3.5 mm jack cable
6. A 2.5 mm jack to 2.5 mm jack camera trigger cable
7. Sensor unit tripod (as required)

### **Method**

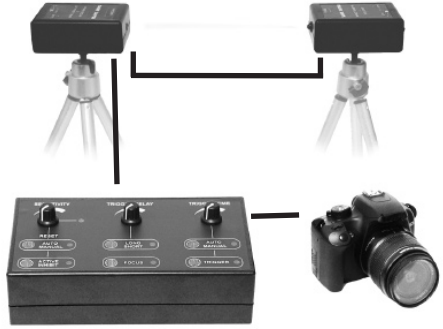
1. Having inserted the batteries correctly into the MCT-1 control unit (and/or utilising an MP-1), operate the MODE switch on the rear panel of the MCT-1 shown as LIS/SOUND OR I.RED to the left, to select LIS/SOUND.
2. Operate the switch on the rear panel of the INFRARED RECEIVER/LIGHT INTENSITY SENSOR UNIT from IR RX to LIS.
3. Connect the INFRARED RECEIVER/LIGHT INTENSITY SENSOR UNIT by inserting the 3.5 mm jack into one socket on the rear of this unit, indicated as TO CONTROL, to the main MCT-1 control unit by inserting the other end of the 3.5 mm jack cable into either of the sockets on the rear of the MCT-1 marked TO SENSORS 1 or 2.
4. Connect the camera to the MCT-1 using the 2.5 mm jack cable inserted into the socket on the rear panel of the MCT-1 unit marked TRIGGER OUT – CAMERA and to the 2.5 mm remote control socket on the camera of choice.

5. Switch on the power to the MCT-1 unit with the POWER ON/OFF switch on the rear of the MCT-1 unit.
6. Place the INFRARED RECEIVER/LIGHT INTENSITY SENSOR UNIT facing towards the expected light source. Adjust the SENSITIVITY, increasing the sensitivity until the orange LED illuminates. When the LED illuminates turn the control anti-clockwise until the LED just extinguishes. This is the optimum position. If the control is set too high then false triggering may occur.
7. Set the RESET – AUTO/MANUAL switch to the required position.
8. Set the TRIGGER DELAY fully to anti-clockwise and the TRIGGER DELAY switch to SHORT (RED LED).
9. Set the TRIGGER TIME control fully anti-clockwise.
10. Switch the TRIGGER TIME – AUTO/MANUAL switch to AUTO (GREEN LED).
11. Focus the camera, either via the FOCUS switch on the MCT-1 or by way of the camera controls. It may be found that switching the camera lens to manual focus allows the camera to trigger at a faster reaction time as automatic focusing is no longer necessary.
12. Set the camera to the required settings in respect of shutter speed, aperture, etc, having regard to depth of field and the amount of movement to be allowed in the shot.
13. Consider locking the camera mirror in the up position, if possible, as this cuts down even further the reaction time of the camera.
14. Set the SENSITIVITY - ACTIVE/INHIBIT switch to ACTIVE (GREEN LED). The camera will now be triggered at the next detection of light.
15. Trial and error in the settings used in respect of the camera, shutter speed, aperture, lighting, trigger delay, etc, will enable the operator to find the optimum settings for the results required. (The range of possible settings configurations is almost endless when combined with those of the camera.)

## SAMPLE SCENARIO 3 – INFRARED BEAM



Infrared parallel connections



Infrared daisy-chain connections

For this scenario the following equipment is used:-

1. Your camera of choice (ensuring compatibility)
2. Camera tripod (as required)
3. The MCT-1 Control Unit
4. The INFRARED TRANSMITTER/SOUND SENSOR UNIT
5. The INFRARED RECEIVER/LIGHT INTENSITY SENSOR UNIT
6. x2 3.5 mm jack to 3.5 mm jack cable
7. A 2.5 mm jack to 2.5 mm jack camera trigger cable
8. x2 mini tripods
9. The 2<sup>o</sup> beam baffle supplied

### Method

1. Having inserted the batteries correctly into the MCT-1 control unit (and/or utilising an MP-1), operate the MODE switch on the rear panel of the MCT-1 shown as LIS/SOUND OR I.RED to the right, to select I.RED.
2. Operate the switch on the rear panel of the INFRARED TRANSMITTER/SOUND SENSOR UNIT from SOUND to IR TX.
3. Operate the switch on the rear panel of the INFRARED RECEIVER/LIGHT INTENSITY SENSOR UNIT from LIS to IR RX.
4. Connect the INFRARED TRANSMITTER/SOUND SENSOR UNIT by inserting the 3.5 mm jack into one socket on the rear of this unit, indicated as TO CONTROL, to the main MCT-1 control unit by inserting the other end of the 3.5 mm jack cable into either of the sockets on the rear of the MCT-1 marked TO SENSORS 1 or 2.
5. Connect the INFRARED RECEIVER/LIGHT INTENSITY SENSOR UNIT by inserting the 3.5 mm jack into one socket on the rear of this unit, indicated as TO CONTROL, to the main MCT-1 control unit by inserting the other end of the 3.5 mm jack cable into one of the other sockets on the rear of the MCT-1, marked TO SENSORS 1

or 2, OR 'daisy-chain' the two sensor units together by plugging the 3.5 mm jack into the other socket on the rear of the INFRARED TRANSMITTER/SOUND SENSOR UNIT indicated as TO CONTROL. See above diagram.

6. Connect the camera to the MCT-1 using the 2.5 mm jack cable inserted into the socket on the rear panel of the MCT-1 unit marked TRIGGER OUT – CAMERA and to the 2.5 mm remote control socket on the camera of your choice.

7. Carefully align the beam lens on the front of the INFRARED TRANSMITTER/SOUND SENSOR UNIT with the receiver aperture on the front of the INFRARED RECEIVER/LIGHT INTENSITY SENSOR UNIT. This must be within an angle of  $6^{\circ}$  to the beam lens. (If a narrower, more accurate, beam is required then the  $2^{\circ}$  beam baffle supplied should be clicked into the aperture on the front of the receiver unit).

8. The distance between the units can be between 30cm and 2m).

9. Switch on the power to the MCT-1 unit with the POWER ON/OFF switch on the rear of the MCT-1 unit.

**Note: When used in the IR TX mode, looking into the invisible beam may cause permanent eye damage.**

10. Adjust the SENSITIVITY, by increasing the sensitivity until the orange LED illuminates. When the LED illuminates turn the control anti-clockwise until the LED just extinguishes. This is the optimum position. If the control is set too high then false triggering may occur. (If used outside, bright situations may confuse the sensor. Never direct the sensor in the direction of the sun as it could be saturated by IR from the sun's rays.)

11. Set the RESET – AUTO/MANUAL switch to the required position.

12. Set the TRIGGER DELAY fully to anti-clockwise and the TRIGGER DELAY switch to SHORT (RED LED).

13. Set the TRIGGER TIME control fully anti-clockwise.

14. Switch the TRIGGER TIME – AUTO/MANUAL switch to AUTO (GREEN LED).

15. Focus the camera, either via the FOCUS switch on the MCT-1 or by way of the camera controls. It may be found that switching the camera lens to manual focus allows the camera to trigger at a faster reaction time as focusing is no longer necessary.

16. Consider the need for extra lighting to illuminate the subject correctly for the desired effect.



17. Set the camera to the required settings in respect of shutter speed, aperture, etc, having regard to depth of field and the amount of movement to be allowed in the shot.
18. Consider locking the camera mirror in the 'UP' position, if possible, as this cuts down even further the reaction time of the camera.
19. Set the SENSITIVITY - ACTIVE/INHIBIT switch to ACTIVE (GREEN LED). The camera will now be triggered at the next detection of an object passing through the beam.
20. Trial and error in the settings used in respect of the camera, shutter speed, aperture, lighting, trigger delay, etc, will enable the operator to find the optimum settings for the results required. (The range of possible settings configurations is almost endless when combined with those of the camera.)
21. Consideration should also be given to the distance between the beam and the camera. For instance, an object dropping through the beam will have a finite travelling time before it reaches the point at which it enters the camera's view. It may be advantageous to increase the distance between the beam detection and the camera and then utilise the trigger delay to adjust the point at which the camera actuates. Several attempts could produce a time/distance type chart to optimise success rates.

#### **SAMPLE SCENARIO 4 – MANUAL TRIGGER**

The camera may be remotely operated by pressing the TRIGGER button despite any of the other settings made on the MCT-1. Continued operation of the TRIGGER button with the camera set to multiple exposure settings will cause the camera to shoot continually until pressure on the button is released.

#### **SAMPLE SCENARIO 5 – AUXILIARY OUTPUT**



Auxiliary connections

Two cameras may be connected directly to the MCT-1 via the trigger out sockets. However, it must be remembered that the camera pre-focusing facility ONLY applies to the output marked as CAMERA. The output connection marked AUX., will activate the camera shutter but not the focus. Therefore, the second camera must be manually focused.

The second TRIGGER OUT circuit can also be used to operate a variety of additional equipment. This could include a slave or an additional flash gun. However, only one item of additional equipment should be connected at any one time.

## SPECIFICATIONS

|                    |                                                                                                                                                                                    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TRIGGER TIME       | - Selectable for - 5 ms (1/200 sec.) to - 5 seconds                                                                                                                                |
| DELAY TIME         | - Short delay - 1 ms (1/1000 sec.) to 100 ms (1/10 sec.).<br>- Long delay - 1000 ms (1/10 sec.) to 10 seconds.                                                                     |
| TRIGGER MODES      | - Manual, auto 1 shot, auto re-arm.                                                                                                                                                |
| FOCUS ACTIVATION   | - Manual activation.                                                                                                                                                               |
| SENSOR MODES       | - Flash, infrared beam, sound.                                                                                                                                                     |
| IR BEAM            | - Range - 20 cm to - 2m. Wavelength 850 nm.                                                                                                                                        |
| FLASH SENSOR       | - Range 1 to 1500 lumens. Sensitivity 10 lumens.                                                                                                                                   |
| SOUND RESPONSE     | - Microphone sensitivity - frequency response 50 to 5000 Hz at 3 Db.                                                                                                               |
| TRIGGER OUTPUTS    | - x3 open collector (x2 trigger, x1 focus). 50 v DC max at 100 milliamps.                                                                                                          |
| POWER REQUIREMENTS | - x4 AA batteries, high power type, non-rechargeable.<br>- AC to low voltage PSU - 6 to 9 VDC at 100 milliamps. Unit to be double insulated. (Use disconnects internal batteries.) |
| POWER CONSUMPTION  | - About 40 milliamps.<br>When IR TX module is connected rises to 80 milliamps.                                                                                                     |
| SIZE               | - Controller - (W)19cm x (D)14cm x (H)5cm.<br>- Sensors (W)7.5cm x (D)5cm x (H)2.6cm.                                                                                              |
| SENSOR MOUNTING    | - ¼ inch UNC thread (standard tripod thread).                                                                                                                                      |
| MINI TRIPOD HEIGHT | - 8 cm min. 17 cm max.                                                                                                                                                             |
| WEIGHT             | - Controller 492g Sensors 50g Tripods 30g.                                                                                                                                         |
| WATERPROOFING      | - IP53.                                                                                                                                                                            |
| TEMPERATURE        | - 0 to 35 <sup>o</sup> C. (operating). -10 to +50 <sup>o</sup> C. (non- operating).                                                                                                |
| SHOCK              | - 10 Newtons.                                                                                                                                                                      |

# 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.

The following cameras will connect directly to the MCT-1 with the trigger cable provided:-

### CANON

EOS 30, EOS 33, EOS 50E, EOS 300, EOS 300V, EOS 300D, EOS 350D, EOS 3000, EOS 50, EOS 500, EOS 55, EOS 500N, EOS 300X, EOS Kiss, EOS New Kiss, EOS Kiss 7, EOS Kiss III, EOS 7, EOS 7s , EOS 400D, EOS Digital Rebel, EOS Digital Rebel X, EOS Digital Rebel XSi, EOS KISS X2, EOS 450D, EOS Digital Rebel XTi, Kiss Digital, Kiss Digital N, ELAN 7N, ELAN II, ELAN DATE, ELAN 7, ELAN 7NE, ELAN 7N, ELAN IIE, Rebel 2000, Rebel G, Rebel T2, Rebel Ti, Rebel X, Rebel XS, EOS 1000D, EOS 500D, Rebel T1i, EOS 550D, Rebel T2i, G10, G11, G12, 60D, 600D, Rebel T3i, Kiss X5, 1100D, Rebel T3

### PENTAX

K100D, K110D, K10D, \*ist DS2, K200D, K20D K7, \*ist D, \*ist DS, \*ist, \*ist DL, MZ-6, ZX-L, MZ-, \*ist, DL2, K5

### SAMSUNG

GX-1L, GX-1S, GX-10, GX-20, NX10, NX100, NX5

### CONTAX

645, N, N1, NX, N Digital

Other cameras will require an adapter. Typically, the following manufacturers may offer adapters:-

Calumet

JJC Corporation

Hahnel Eire

HAMA

All of the above will require a 2.5 mm female to 3.5 mm male or female 3 pole adapter.

# 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.

During the applicable warranty period, THE MANUFACTURER will repair or replace, at THE MANUFACTURER'S sole discretion without charge to the purchaser, any defective component part of the product. THE MANUFACTURER may, at THE MANUFACTURER'S sole discretion, use rebuilt, reconditioned, or new parts or components when repairing any product or replace a product with a rebuilt, reconditioned or new product.

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.

THE MANUFACTURER SHALL NOT BE LIABLE FOR ANY SPECIAL INCIDENTAL, CONSEQUENTIAL, INDIRECT OR SIMILAR DAMAGES, DAMAGES TO PURCHASER'S PROPERTY, OR INJURY TO THE PURCHASER OR OTHERS ARISING OUT OF THE USE, MISUSE OR INABILITY TO USE ANY OF THE MANUFACTURER'S PRODUCTS, BREACH OF WARRANTY, OR NEGLIGENCE, INCLUDING BUT NOT LIMITED TO THE MANUFACTURER'S OWN NEGLIGENCE, EVEN IF THE MANUFACTURER OR IT'S AGENT HAS BEEN ADVISED OF SUCH DAMAGES, OR FOR ANY CLAIM BROUGHT AGAINST THE PURCHASER BY ANY OTHER PARTY.

THIS LIMITED WARRANTY IS THE COMPLETE WARRANTY FOR THE MANUFACTURER'S PRODUCTS. THIS LIMITED WARRANTY SHALL NOT EXTEND TO ANYONE OTHER THAN THE ORIGINAL PURCHASER OF THIS PRODUCT.

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