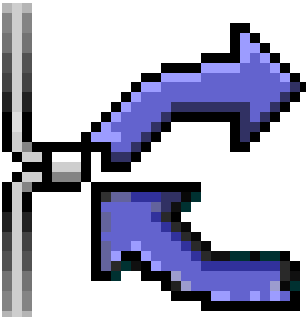
FLIR Systems
Advanced Thermal Solutions

DL007U-F
RECORDER TRIGGER User Manual



# RECORDER TRIGGER

User Manual

# 1. Contents

# 2. Overview

Recorder trigger enables you to trigger acquisition on FLIR Systems acquisition products. It has for triggering inputs:

1. Parallel port thru a X0149 Dongle
2. Serial port
3. Internal Timer
4. USB

The Recorder Trigger is automatically installed with Altair and can be found within the utilities of the Flir software package (START –> Programs –> Cedip Infrared Systems –> Utilities).

This manual will describe the use of the Recorder Trigger.

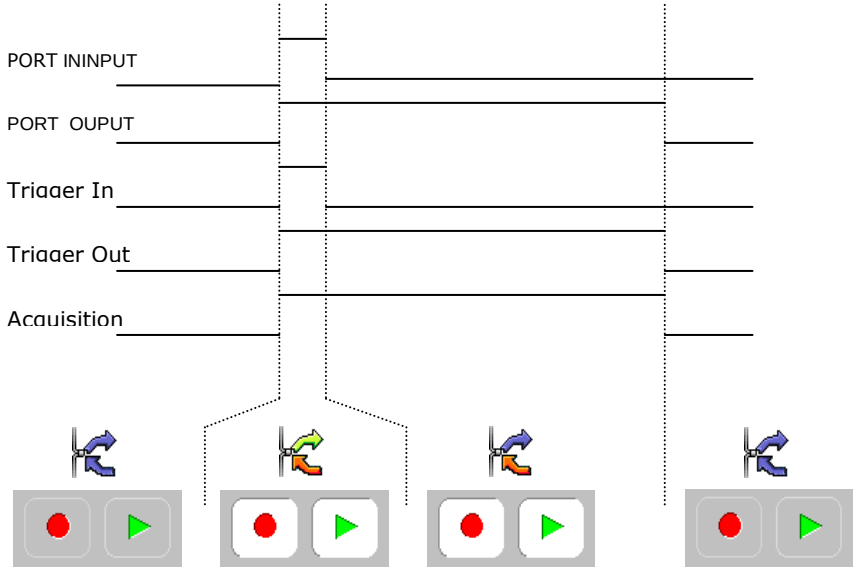
**SOFTWARE REQUIREMENTS**

*OS:* Windows 2000, Windows XP

# 3. Recorder Trigger Description

Recorder Trigger does the interface between Recorder and the triggering port of the computer. On the raising edge of Trigger In signal, Recorder Trigger commands Recorder to start the acquisition. Once the acquisition started, Recorder commands Recorder Trigger to set the Trigger Out signal to high level until the acquisition is stopped.

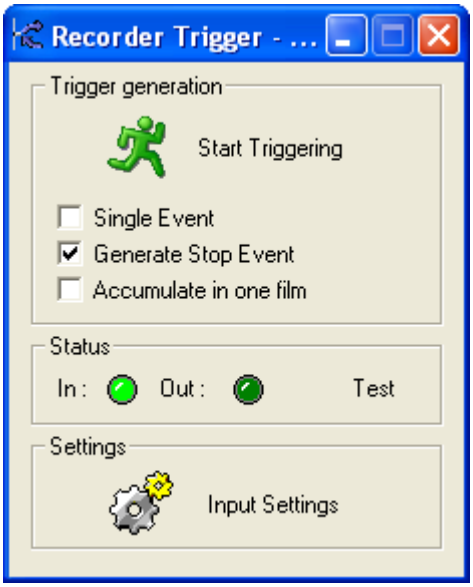
The following timing graph describes the scheduling of operations.



# 4. Recorder Trigger Main Screen

Start Recorder Trigger by double clicking on the icon: 

The following window appears:




Also, Recorder trigger opens itself in the tray icon bar at the bottom right of the screen.


- *Trigger In*: Indicates the state of the signal **INPUT**
- *Trigger Out*: Indicates the state of the signal **OUTPUT**

# 5. Trigger Generation

**TRIGGER GENERATION**

**Start Triggering**: When pressed, Recorder Trigger sends acquisition messages. Clicking on it a second time will disable sending messages.

**Single Event**: When checked, send an acquisition message only for the first rising edge of the PORT INPUT signal.

**Generate Stop Event:** When checked, send a stop acquisition message on the falling edge of the PORT INPUT signal.

**Accumulate in one film:** When checked, all the acquisitions are stored in the same film instead of a different film for each one.

# 6. Status

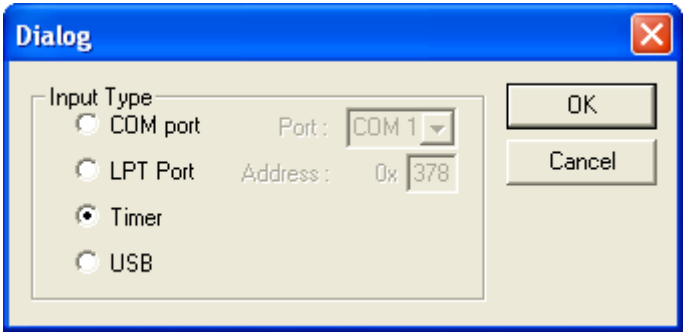
**In**: Indicates the status on the PORT INPUT signal.

**Out**: Indicates the status of acquisition. When a FLIR Systems application starts acquiring images, it sends a message to the recorder trigger which set the PORT INPUT signal to “acquiring”.

**Test**: Force output signal to acquiring or not acquiring state.

# 7. Settings

Pressing the settings button opens a window that allows selecting the input for recorder trigger.




**COM PORT**

Select it to trigger from a serial link. Select the port to scan.
Recorder trigger scans the selected serial port every 100 ms:

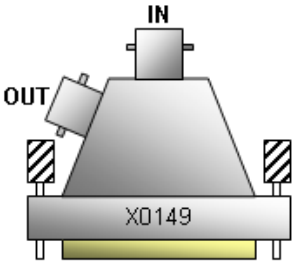
- Receiving an 'p' (ASCII 0x70) send an "**acquisition preparation**" message,
- Receiving an 's' (ASCII 0x73) send a "**start acquisition**" message
- Receiving an 't' (ASCII 0x74) send a "**stop acquisition**" message

Com port parameters are 9600 Bds / 8 data bits / 1 stop bit / no parity

**LPT PORT**

Select it to trigger from the parallel port. The scan period is 100 ms.
The Recorder Trigger needs the dongle **X0149** to be connected to the parallel port of the PC.

The **X0149 Dongle** provides a TTL input and a TTL output.



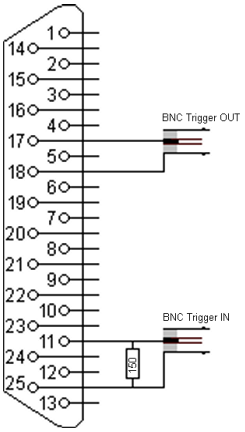

**INPUT:**

| | |
|---|---|
| Connector type: | BNC |
| Signal range: | TTL 5V |
| Signal on | pin 11 |
| Ground on | pin 25 |

**OUTPUT:**

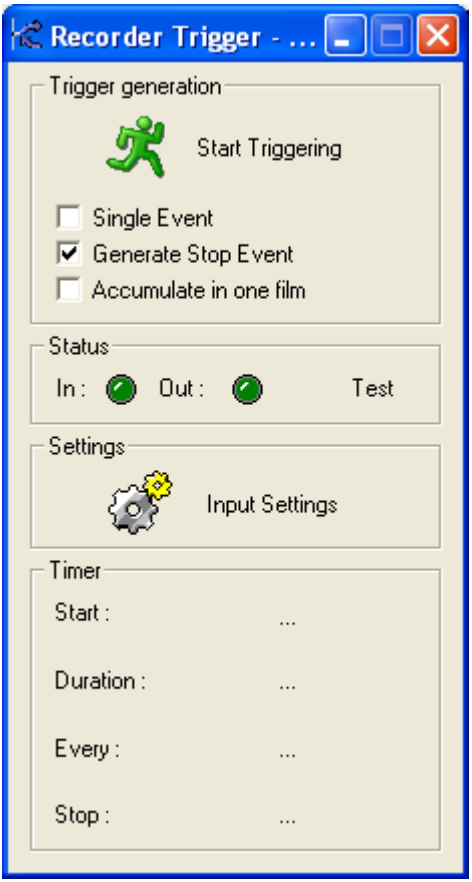
| | |
|---|---|
| Connector type: | BNC |
| Signal range: | TTL 5V |
| Signal on | pin 17 |
| Ground on | pin 18 |

150 Ohms Pull down resistor between pin 17 and 18

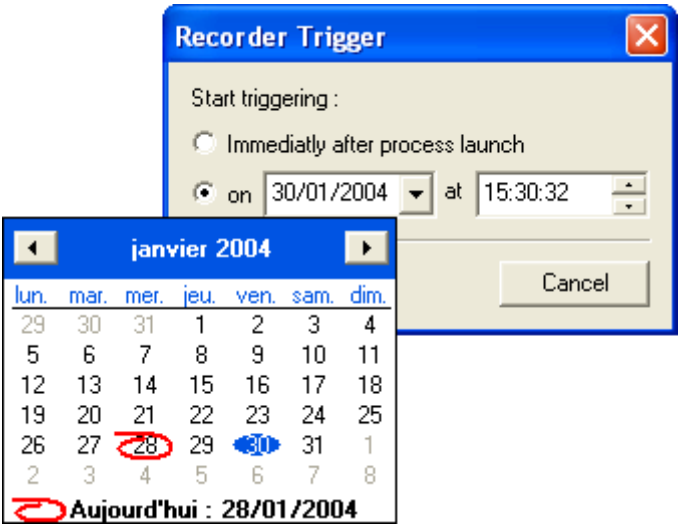


**TIMER**

Select it to trigger internal timer.
When selected, the Recorder Trigger displays timing parameters:

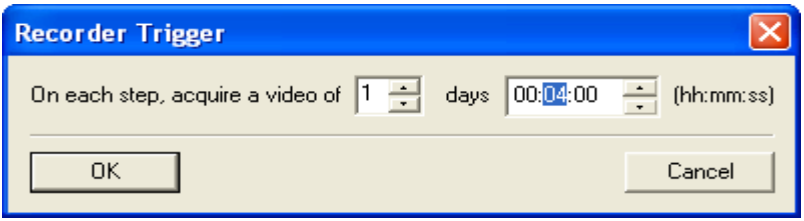


**Start:**
The time on which the acquisition begins.



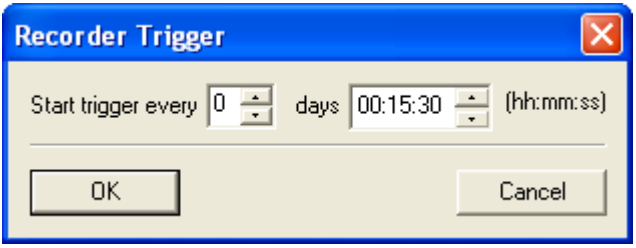

You can either choose to start when you click on the "Start process" button or program a delayed start. If you want the process to start on a different day, just select it in the calendar view which appears when clicking on the date. You may also set the desired start time.

**Duration:**
The duration of the acquisition.



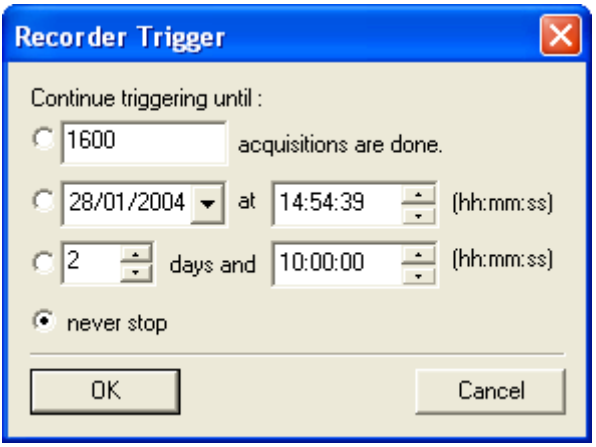

Each video you acquire on trigger signal will have this length.

**Every:**
The time between acquisitions.




This parameter defines the duration between the acquisitions.

**Stop:**
The number of time the acquisition will be repeated.




To select when the trigger should stop, you may switch to one of these modes:

- **Number of acquisitions:** this mode allows you to set a number of acquisitions you want to be done. The Recorder

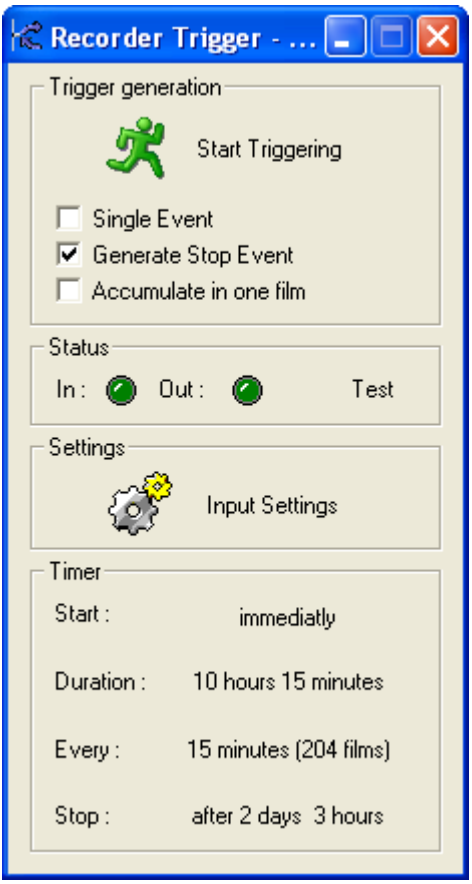
Trigger will continue triggering until this number of acquisitions is done.

- **End time**: this second option is used if you want the triggering to cease on a specific day and time. Set it as you may have set the start time.
- **Maximum duration**: while using this mode, you tell Recorder Trigger to continue the process until it has functioned for the selected time.
- **Never stop**: this mode will never stop the triggering process, unless you stop it.

Whatever the stop mode choose, notice that you can always stop triggering after process has been launched by clicking the button:


which replaces the button

**Example:**
When you have set all the parameters, you may obtain a screen like this one:




Here, the triggering process will start immediately after you click on "Start triggering" button.
It will perform the acquisition of 10 hours and 15 minutes long films, every 15 minutes. You can also see that you will get 204 films.
The process will stop 2 days and 3 hours after it has begun.

**USB**

Select it to trigger from the USB port. The scan period is 100 ms.
The Recorder Trigger needs the rack **R0507** to be connected to an USB port of the PC.

This rack provides three TTL input and output for Prepare, Record and Pause. And one error output for status.


**INPUT:**

| | |
|---|---|
| Connector type: | BNC |
| Signal range: | TTL |

**OUTPUT:**

| | |
|---|---|
| Connector type: | BNC |
| Signal range: | TTL |

# 8. Command Line Parameters

It is possible to set some parameters in the command line. Command line parameters can be used to run batch acquisition or to call Recorder Trigger from another application. This part describes these parameters.

**SYNTAX**

The following syntax is:
**recorder trigger.exe /param1=value1/param2=value2**

Rules:
- A parameter starts with a slash ( / ).
- A parameter always has a value affected to it.

**PARAMETERS**

| Parameters | Value | Function |
|---|---|---|
| **Input** | 0 COM port<br>1 Parallel port<br>2 Internal Timer | Specify the type of input |
| **COM** | COM port number | Specify the com port to use (optional). |
| **LPT** | Port address | Specify the LPT port address to use (optional). |
| **Timer** | Time in ms | Specify scanning resolution. |
| **ImmediatStart** | 0 Delayed<br>1 Immediate start | Specify if the process is *delayed.* |

| | | |
|---|---|---|
| **Start** | Start time<br>("dd/mm/yyyy hh:mm:ss") | Sets the start time. Ignored if ImmediatStart=1 |
| **StopType** | 0 Number of acquisitions.<br>*1 End time*<br>*2 Maximum duration* | Specify the stop mode.<br>In order to use the mode 0, set **RepeatTimes** parameter.<br>To use the mode 1 set **EndTime** parameter.<br>To use the mode 2 set **MaxDuration**parameter. |
| **RepeatTimes** | Number of acquisitions | Specify the number of acquisitions you want to perform (used for StopType 0). |
| **EndTime** | End Time<br>"dd/mm/yyyy hh:mm:ss" | Used for Stop Type 1. |
| **MaxDuration** | Max Time<br>"---d --h --m –s" | Specify the maximum duration of the process (used for StopType 2). |
| **AcquiDuration** | Time<br>"---d --h --m –s" | Specify the duration of each film. |
| **Stop** | 1 Generate stop event<br>0 Don't generate stop event | Specify stop event status. |
| **Once** | 1 Single Event<br>0 Every event | |
| **AutoStart** | 1 Direct scan<br>0 No direct scan | Directly scan after initialization. |
| **Interval** | Time<br>(format : "---d --h --m –s") | Specify the interval between each acquisition |

# 9. Broadcast Messages

Broadcast messages are used to control the recorder from another application or to get notifications from the recorder.

The broadcast message must be registered using the VC++ function:

**WORD wMsg = RegisterWindowMessage("Cedip")**

**CONTROL MESSAGES**

It is possible to command Recorder by sending broadcast messages using wMsg as message number and wParam and lParam defined as following.

| **Message** | **CedipPrepareAcq** |
|---|---|
| **wParam** | **0x609** |
| **lParam** | **Not used** |
| **Description** | Prepare recorder for acquisition. This is equivalent to the Prepare button on the recorder. |

| **Message** | **CedipAcquisition** |
|---|---|
| **wParam** | **0x607** |
| **lParam** | **Not used** |
| **Description** | Start the acquisition. This is equivalent to the Start button on the recorder. |

| **Message** | **CedipStopAcq** |
|---|---|
| **wParam** | **0x608** |
| **lParam** | **Not used** |
| **Description** | Stop the acquisition. This is equivalent to the Stop button on the recorder. |