



UFO Capture Recommended Configuration

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INTRODUCTION

About this document

UFO Capture is licensed software available from the Sonotaco website.

This document supplements the Sonotaco UFO Capture documentation by detailing the detection settings recommended by the UKMON team.

This document shows the configuration settings in two formats:

- ◆ Screen snapshots allowing a quick comparison between recommended and actual settings (Appendix A). These cover:
 - ◆ Input tab,
 - ◆ Operation tab,
 - ◆ Profile tab;
- ◆ A detailed parameter list describing the function of each setting (Appendix B).

For more information on installation and operation of UFO Capture please refer to the official UFO Capture User Manual which can be viewed on the Sonotaco website (see http://sonotaco.com/e_index.html).

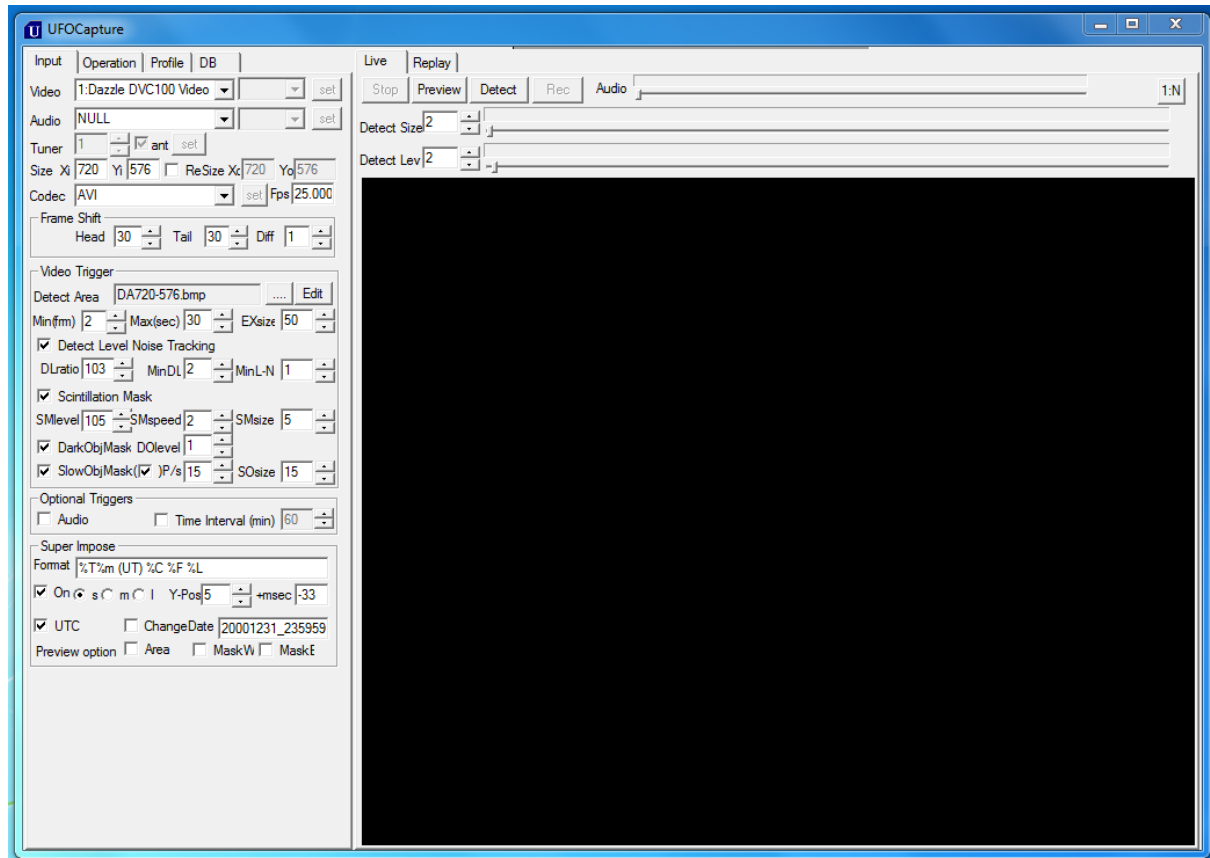
Feedback

Achieving the ideal detection settings may depend on the environment and characteristics of individual stations and may in some instances require a little trial and error to optimise. For example, the ideal sensitivity of detection may be a trade-off between detection of faint meteors and susceptibility to electrical noise.

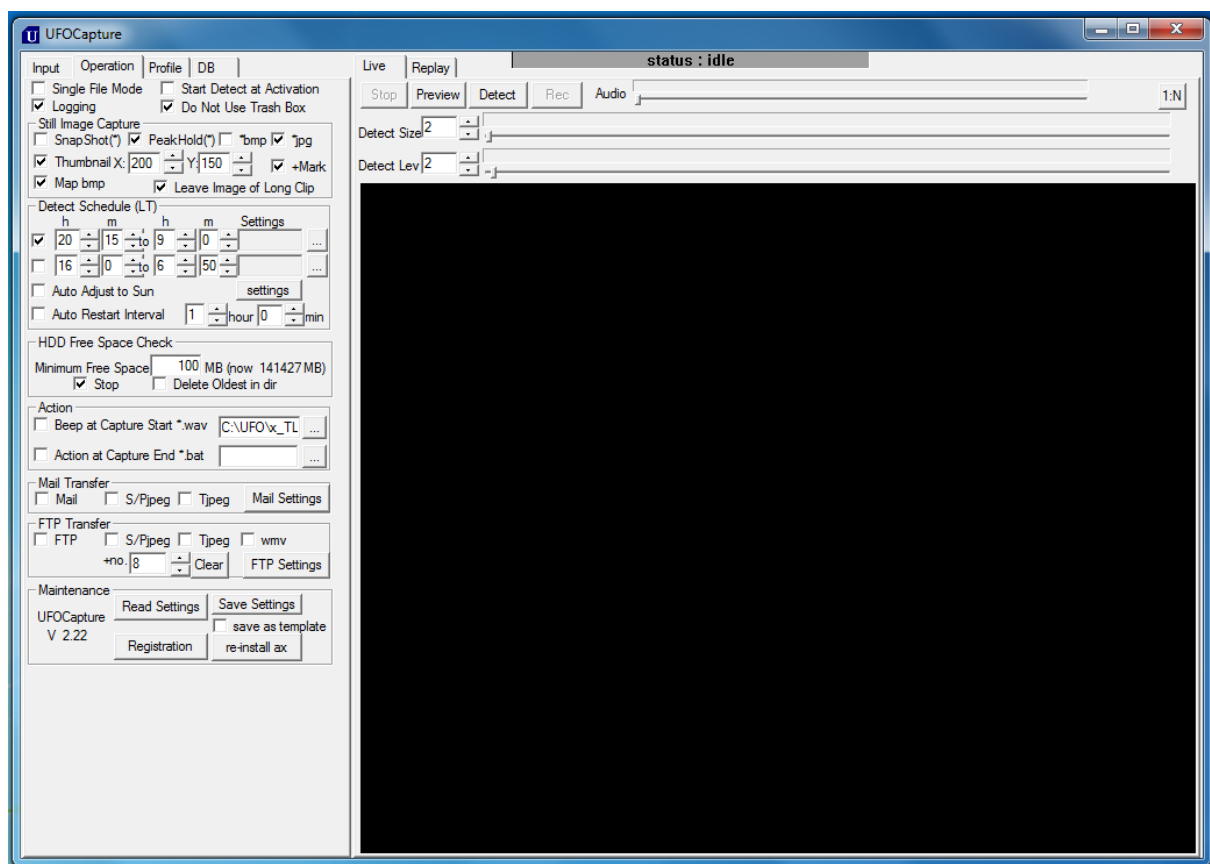
If you have any different settings that work better for you we would like to know more and to share this information with other UKMON partners.

APPENDIX A - SCREEN SNAPSHOTS

A.1 RECOMMENDED INPUT TAB SETTINGS

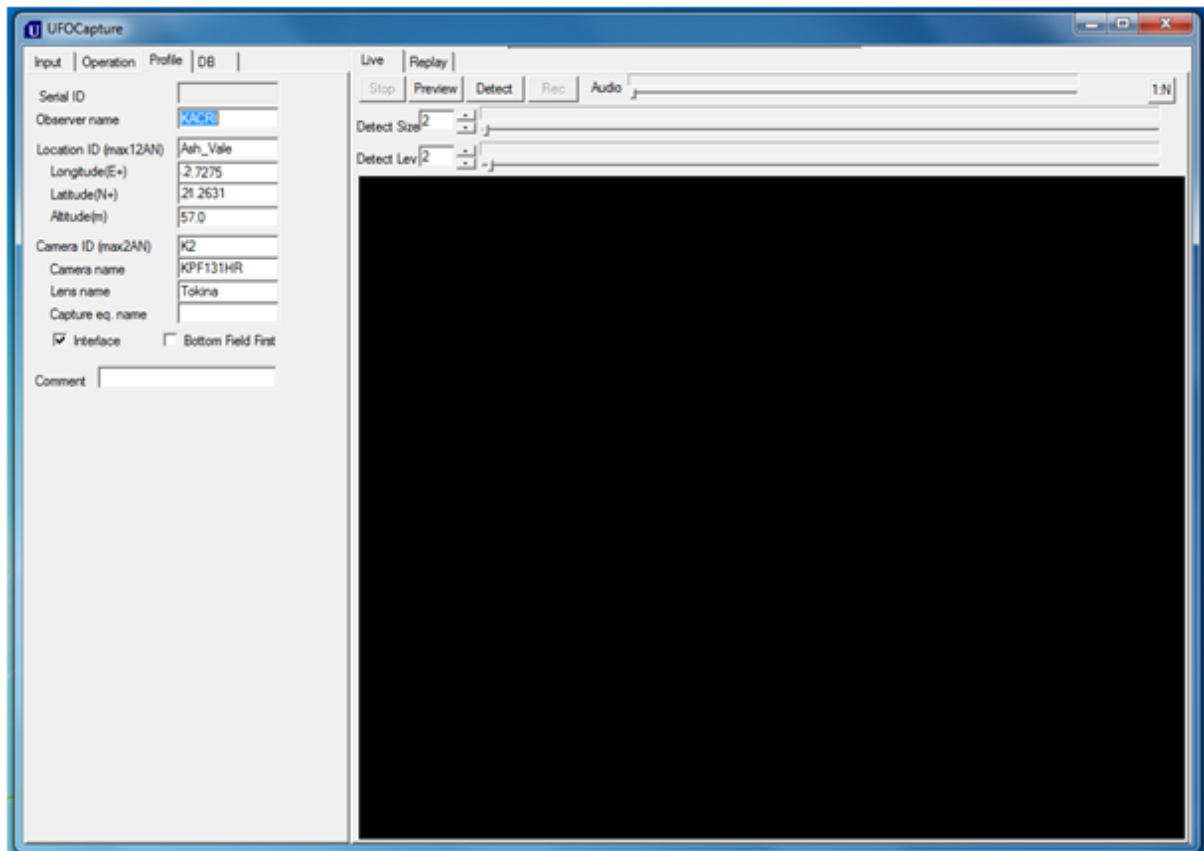


A.2 RECOMMENDED OPERATION TAB SETTINGS



A.3 STATION PROFILE - IDENTIFICATION AND LOCATION

Identification and location settings are station specific. The following is illustrative and is provided only to show the type of information that is required.



The screenshot shows the UFOCapture software interface. The 'Profile' tab is selected, displaying various input fields for station identification and location. The 'Live' tab is also visible, showing controls for 'Stop', 'Preview', 'Detect', 'Rec', and 'Audio'. The 'Detect Size' and 'Detect Lev' fields are set to 2. The 'Interface' checkbox is checked, and the 'Bottom Field First' checkbox is unchecked. The 'Comment' field is empty.

Field	Value
Serial ID	
Observer name	KACR
Location ID (max12AN)	Ash_Vale
Longitude(E+)	2.7275
Latitude(N+)	24.2631
Altitude(m)	57.0
Camera ID (max2AN)	K2
Camera name	KPF131HR
Lens name	Tokina
Capture eq. name	
Interface	☒
Bottom Field First	☐
Comment	

APPENDIX B – UFO CAPTURE SETTINGS

B.1 INPUT SETTINGS

These settings relate to the input device (CCTV camera / decoder), detection and discrimination (elimination of false positives).

Device settings

Parameter	Function	UKMON Recommended value
Video	Specifies the capture device	Device dependent
Audio	<i>Not used</i>	Not used
Tuner	<i>Not used</i>	Not used
Ant	<i>Not used</i>	Not used
Size: X ₁	Defines the horizontal pixel resolution of the video camera	720 ¹
Size: Y ₁	Defines the vertical pixel resolution of the video camera	576 ¹
Resize (Checkbox)	Resize (reduce) the output image	Disabled
Resize: X ₀	New horizontal pixel resolution	Not applicable
Resize Y ₀	New vertical pixel resolution	Not applicable
Codec	Specified the method of video compression	AVI
FPS	Specified the video frames per second	25.000 ²

Frame Shift

Parameter	Function	UKMON Recommended value
Head	Defines the number of frames recorded before the event.	30
Tail	Defines the number of frames recorded after the event.	30
Diff	Defines the interval between frames used for comparison. (A value of 1 is appropriate for fast moving objects such as meteors. An interval of 2 is used to detect very slow objects.)	1

¹ The KPF 131 HR has a resolution of 720 x 576 pixels (5:4 aspect ratio)

² PAL runs at 25 frames per second

Video trigger

Parameter	Function	UKMON Recommended value
Detect area	File name of bitmap which contains detect area mask pattern.	N/A
Min (frm)	Defines the minimum number of the continuous frames over which movement is detected which will trigger an event	2
Max (Sec)	Defines the maximum duration of detected movement (in seconds). If exceeded the clip is deleted. This value is useful for filtering out aircraft and satellites.	30
EXsize	Defines the number of changing pixels that should cause a trigger regardless of its duration	50
Detect level noise tracking	When selected the "Detect Lev" threshold on the live display is tuned to background noise automatically	Enabled
DL ratio	Defines the ratio(%) between noise level and "Detect Lev". Normally 105 to 130 is appropriate.	103
DLMin	Defines the minimum value of "Detect Lev".	2
MnL-N	Defines the minimum difference required between the "Detect Lev" and noise level.	1
Scintillation mask	With this enabled, UFO Capture automatically determines the precise position of bright objects (stars) and masks these object according to the mask size setting (below) so that scintillation does not trigger event detection.	Enabled
SMLevel	Defines the minimum required ratio of the brightness compared with the sky background	105
SMSpeed	Defines the detection speed	2
SMSize	Defines the mask size	5
DarkObjMask	This option reduces the detection of movement which is darker than the background.	Enabled
DOLevel	Defines the dark object threshold	1
SlowObjMask (Checkbox 1)	When enabled UFO Capture will track and mask slow moving objects (e.g. satellites) without triggering an event.	Enabled
SlowObjMask (Checkbox 2)	When enabled UFO Capture will highlight the slow moving object on the live display in real-time	Enabled
Pixels/s	Defines the maximum speed of an object which should be masked.	15
SOSize	Defines the size of the Size mask pattern	15

Optional triggers

Parameter	Function	UKMON Recommended value
Audio	Not required for meteor detection	Disabled
Time interval (Checkbox)	Not required for meteor detection	Disabled
Time interval (value)	Not required for meteor detection	n/a

Superimpose

Parameter	Function	UKMON Recommended value
Format	Specifies the format and content of the frame timestamp details: %T: Date and time "yyyy/mm/dd hh:mm:ss" %t : Date and time "dd/mmm/yyyy hh:mm:ss" %M : Milliseconds of time. %m : 1/10th seconds of time. %C: Clip number %F: Frame number %L: Detect Size, Detect Lev and detection mark %l : LocationID and CameraID (see "Profile") %i : Camera name and Lens name (see Profile) <i>It is important that the frame timestamp gives a clear and unambiguous time. UT is preferred over local time. To remove ambiguity, the timestamp should include text indicating that the time is UT (UTC setting must be enabled, see below)</i>	%T%m (UT) %C %F %L
On	When enabled, UFO Capture superimposes frame details as specified by the Format parameter onto the image	Enabled
s	Text size: Small text	Enabled
m	Text size: Medium	Disabled
l	Text size: Large text	Disabled
y-pos	Defines the vertical position of the superimposed text line. (Zero is the bottom of the frame.)	5
+msec	Defines the offset to the super impose time (msec).	-33
UTC	If enabled UTC is used as the time in the superimpose string and clip names (instead of Local time).	Enabled
Change date (checkbox)	Assigned date and time is treated as the time of next start of detection	Disabled
Change date (value)	Assigned date and time	Not used

Parameter	Function	UKMON Recommended value
Area	Overlay the area mask pattern (grey)	Display only
Mask W	Overlay the scintillation mask pattern (white)	Display only
Mask S	Overlay the scintillation mask pattern (black)	Display only

B.2 OPERATION SETTINGS

These settings control the operating mode of UFO detect.

Parameter	Function	UKMON Recommended value
Single file mode	When enabled all event video clips are written to one single file rather than individual files.	Disabled
Start detect at activation	If enabled UFO Capture will automatically switch into detection mode as soon as it is started.	Enabled
Logging	When enabled, UFO Capture will maintain an xml file containing information for each event clip as well as recording the start and end time of each session to the file. "detlog.csv". <i>This option must be enabled if clips are to be processed using UFO Analyzer.</i>	Enabled
Do not use trash box	If enabled files will be deleted immediately by "DELETE ALL" or "DELETE A CLIP" buttons in the Operation sheet; clips are not recoverable from the recycle bin.	Enabled

Set Image Capture

Parameter	Function	UKMON Recommended value
Snapshot(*)	If enabled, one frame at the start of the event detection will be saved as a still image.	Disabled
Peak Hold (*)	If enabled, composite still image will be saved which contains the peak brightness of each pixel during the event recording.	Enabled
*bmp	If enabled the RGB24 format will be used for SnapShot or PeakHold files.	Disabled
*jpg	If enabled the jpeg format will be used for SnapShot or PeakHold files.	Enabled

Parameter	Function	UKMON Recommended value
Thumbnail (Checkbox)	If enabled a thumbnail jpeg image will be created for real time transfer.	Enabled
Thumbnail: X	Defines the size of thumbnail (horizontal) in pixels	200
Thumbnail: Y	Defines the size of thumbnail (vertical) in pixels	150
+mask		Enabled
Map bmp	If enable an *M.bmp file is created which contains information of the event embedded in the R, G and B layers of the image. <i>This option must be enabled if clips are to be processed using UFO Analyzer.</i>	Enabled
Leave image of long clip	If enabled UFO Capture will keep an image even if the event video clip is deleted as a result of it exceeding the time limit set by the "Max (sec)" parameter	Enabled

Detect schedule

These settings enable the user to create an automatic detection schedule.

Parameter	Description	UKMON Recommended value
Row Checkbox	If enabled the schedule row is active, if disabled the schedule row is deactivated.	UKMON makes no specific recommendations for these settings however the auto restart interval can be useful to overcome PC stability problems.
H:M (from)	Specifies the start time of the detection period	
H:M (to)	Specifies the end time of the detection period	
Settings	Specifies the UFO Capture profile to be used.	
Auto adjust to sun	If enabled the schedule is adjusted automatically to sunset and sunrise.	
Auto restart interval (H:M)	If enabled, detection will be stopped and restarted after the specified time interval	

HDD Free space check:

These settings are used to monitor free disk space and determine the action to take. Note that event video clips can occasionally exceed 100Mb

Parameter	Description	UKMON Recommended value
Minimum free space	Defines the free space threshold in Mb	100Mb
Stop	Stop detection if limit is reached	Enabled
Delete oldest in dir	If enabled, the oldest event video clip will be deleted to make space for the new clip.	Disabled

Action

Parameter	Description	UKMON Recommended value
Beep at capture start	If enabled, a sound is played at the start of every detected event (a beep or specified sound file)	Disabled
Action at capture end	If enabled a specified command file (.bat) or programme (.exe) is run at the end of every event detection. The clip name is passed as a parameter to the .exe or .bat file	Disabled

Mail Transfer

These settings enable images to be emailed.

Parameter	Description	UKMON Recommended value
Mail	If enabled an email will be sent at the end of each capture. The mail settings button opens a dialogue to set up the SMTP server and other email parameters.	UKMON makes no specific recommendations for these settings
S/Pjpeg	If enabled the SnapShot or PeakHold still image will be attached to the E-mail (jpeg only)	
Tpeg	If enabled the thumbnail image is attached to the email	

FTP Transfer

These settings enable images to be copied by FTP. Note that AVI files are generally too large and will not be transferred by FTP.

Parameter	Description	UKMON Recommended value
FTP	If enabled images will be uploaded to an FTP server the end of each capture. The FTP Settings button opens a dialogue to set up the FTP server and other email parameters.	UKMON makes no specific recommendations for these settings. <i>However, stations participating in UKMON live will use FTP to upload clips.</i>
Mail S/Pjpeg	If enabled the SnapShot or PeakHold still image will be attached to the E-mail (jpeg only)	
Tpeg	If enabled the thumbnail image is attached to the email	
Mwv	If enabled, a wmv movie clip will be transferred to the FTP server	
+no	Specifies the file serial number range (cyclic) appended to the name of the transferred files	

B.3 PROFILE

These settings define the station identification and location.

Parameter	Description	UKMON Recommended value
Serial ID	The serial ID used registering the UFO capture software.	N / A
Observer name	The observer name (max 20 alphanumeric characters)	User specified
Location ID	The name of the station (max 12 alphanumeric characters). <i>This name must be unique within the UKMON / EDMOND community. If in doubt please contact info@ukmeteornetwork.com</i>	User specified
Longitude (E+)	Longitude of UKMON station (179.9999 ..180.0000).	User specified <i>Accurate location data is essential to achieve high data quality in subsequent processing.</i>
Latitude (N+)	Latitude of UKMON station (-89.9999 ..89.9999)	
Altitude (m)	Altitude of UKMON station (0.0 .. 9999.0)	

Parameter	Description	UKMON Recommended value
Camera ID	Name of the camera (max 2 alphanumeric characters). Must be unique to your location.	User specified
Camera name	Type of camera (max 20 alphanumeric characters).	User specified
Lens Name	Type of lens (max 20 alphanumeric characters).	User specified
Capture eq name	Capture equipment name (max 20 alphanumeric characters).	User specified
Interlace	Enabled for interlaced video format.	Enabled
Bottom field first	Enabled for BFF video format.	Disabled
Comment	User comments / notes (max 80 alphanumeric characters).	User specified