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Introduction

HyperCam captures the action from your Windows 95 or NT screen and saves it to AVI (Audio-Video Interleaved) movie file. Your machine must run in any color mode. Sound from your system microphone is also recorded.

For best performance please set your machine in 8 bit color mode (256 colors). We found out that in this configuration HyperCam can capture up to 10 frames per second of 640x480 pictures on Pentium 133 machine. You may capture more if your capture area is smaller, or you have a faster machine. In 16 bit color mode it can do about 5 fps of 320x240 frames on the same machine. For 4 bit graphics MS Video does not provide a suitable compressor, so the frames are written uncompressed. This is also slow and produces large AVI files.

Select the area you want to capture, then select Start Rec. button or press a hot key. You may press the same hot key to finish. There is also a "Pause/Resume" hot key and button. You may pan (move the recorded area) by holding e.g. Shift key and moving the mouse. Please click on each tab in the HyperCam dialog and try to figure out what to do, or read the detailed instructions in this help file.

For newer versions of HyperCam please check Hyperionics WEB at:

<http://www.hyperionics.com/>

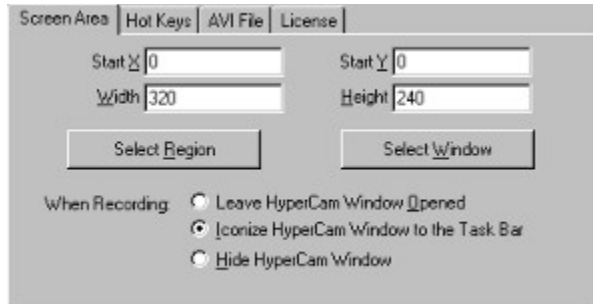
or email the author, Greg Kochaniak, at gregko@hyperionics.com

Thank you for using HyperCam! Please **do email me any comments and suggestions for improvement** you may have!

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Select Screen Area

You may select the initial screen area to record into AVI file on the first tab of HyperCam dialog. The upper right corner coordinates (in screen pixel units) may be entered here under *Start X* and *Start Y* labels, and the size of the area under *Width* and *Height* labels.



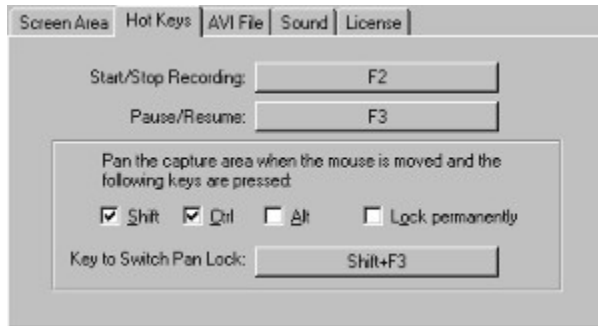
The area may be also selected graphically from the screen. Click on *Select Region* button to outline the rectangle on the screen, or click on *Select Window* to quickly mark the region that corresponds to a particular window area.

In *Select Region* mode you may also use arrow keys on the keyboard to control the precision of area selection with pixel accuracy. In *Select Window* mode move your mouse pointer around the screen and observe the different screen objects (windows, buttons etc.) being highlighted. Click the left mouse button to accept the highlighted area, or the right button to abort the selection.

The radio buttons under *When Recording* header determine what happens with the HyperCam window when you start recording the AVI file. It may be left in place, iconized to the task bar or completely hidden. Please note that you should know the hot key to stop AVI recording if you use *iconize* or *hide*, otherwise you may be in trouble. Click on Hot Keys tab in HyperCam to find out (and change if necessary) what the hot keys are.

Defining and Using Hot Keys

HyperCam uses three system-wide hot keys: one to start and stop AVI file recording (default is F2), another one to pause the recording temporarily and resume it again after a while (default is F3) and finally one to switch between "Pan Lock" mode (in this mode the area that is recorded to AVI is moved around the screen together with mouse pointer). Click on the corresponding buttons to redefine the hot keys.



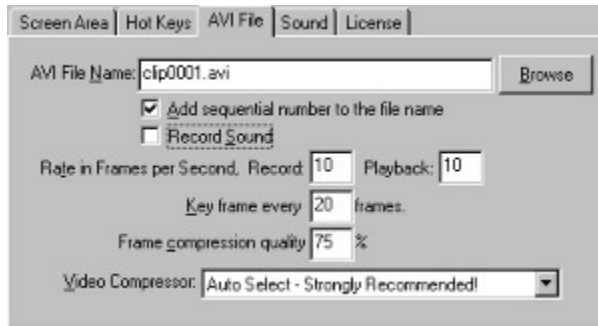
The area that is recorded to AVI may be also moved without using the Pan Lock hot key. You may select any combination of the modifier keys (Shift, Ctrl and Alt) which, when hold together, will cause the record frame to follow your cursor movements. If you check the *Lock permanently* box on, the area will be moved without holding any modifier keys, this state may be also turned on and off with the *Switch Pan Lock* hot key during recording.

Selecting a Hot Key

Please make sure that the blinking I-beam cursor is inside the white space of the edit field, then press the key combination you want to start selected function. If, for example, you want this key combination to be Shift+F9, please hold down the Shift key, then press the function key F9.

AVI File Parameters

You may change several parameters of the AVI file that you record on the *AVI File* tab of HyperCam:



First, you may want to change the name of the file you will record. The file name may be preceded by a drive and directory (folder) name, e.g. c:\MyVideos\clip.avi. If you know that one of your hard disks is faster than the others, please use that disk for your AVI file destination while recording. Please also make sure that you have a lot of free disk space on that drive. You may also click on the *Browse* button to select the folder and file name.

If you leave the *Add sequential number...* check box on, a number will be added to the file name each time you press Start Record button or hot key, so a sequence of files will be recorded, e.g. clip0001.avi, clip0002.avi, clip0003.avi etc. If you check the box off, the file (if exists) will be overwritten with the new contents, and the old contents lost.

The *Record Sound* box may be checked off if you don't want to record your voice or other sounds with your system microphone (or if you don't have a microphone). Please note: on most systems, if you turn on sound recording, you will not hear the sounds normally produced by your computer and the running programs. This is so since most of the sound cards and their drivers are working in "half duplex" mode - this means that they can either record or play sounds, but can't do both at the same time.

The rate is frames per second fields lets you specify how many movie frames per second will be recorded. If you request too many of them, and your computer is not fast enough to capture and compress them, HyperCam will drop some frames, or stop completely and tell you about the error. Please see [Performance Tips](#) for some advice on what to do in such situations. You may also specify a different playback rate, e.g. you could record at 5 frames per second, but have the movie be played at 10 fps. If you do this, the Record Sound check box is turned off and disabled, because any sound that you would record would be played at twice the normal speed.

The *Key frame every ___ frames* value decides on how often the full frames are written to the AVI file. The frames between them may have only the difference between the current and proceeding frame written. Higher values may let you help to achieve a little better frame rates, but also may make it difficult later editing of your AVI files in video editors. You may also set playback frame rate to be different from the recording rate (e.g. you could record at 5 frames per second, and play the clip at 10 fps). However, if you do set the playback rate different from recording rate, you can not record sound.

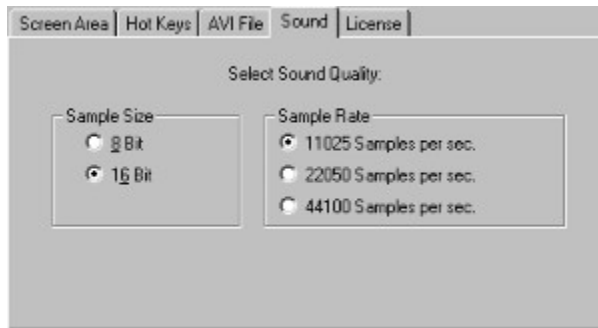
The *Frame compression quality ___%* value is used by some video compressors to make compromise decisions between the speed of compression and size of the picture in the file versus the quality of the picture. You may try to lower this value to achieve faster frame rates, particularly in 16, 24 and 32 bit color modes, but please review what you recorded frequently to verify that you are still satisfied with the picture quality.

The *Video Compressor* select box allows you to select the so called "CODEC" - the program that will

compress your pictures to make AVI files smaller, and let them play faster. The Auto Select setting, that is recommended, will select MS RLE compressor for 8 bit color mode, MS Video 1 compressor for all higher color modes, and no compression for 4 bit color. Please note that if you want to record AVI files in True Color mode (24 or 32 bit), the default MS Video 1 compressor will still write them as 16 color bitmaps, losing some of the color resolution. You may try the "Full Frames (Uncompressed)" selection to really record 24 bit bitmaps, or experiment with some other video compressors that are installed on your system.

Sound Parameters

The Sound tab of HyperCam allows you to specify the quality of the sound recorded with AVI movies.



For best performance - if you need to capture a lot of large frames per second, select 8 bit samples and low sample rate. For better sound quality select higher values. A reasonable compromise between performance and quality seems to be 16 bit sound at 11025 sampling rate.

Performance Tips

If your machine is not fast enough to record as many frames per second, as you requested, HyperCam will try to drop some frames and keep up with as many as possible. However, if it finds out that more than 50% of the frames must be dropped, it will stop with an error message. What can you do to increase the fps rate?

First, try to put the AVI file that you record on the fastest hard disk that you have. Then the next thing is to consider the video mode that you are using. Today most computers work in so called "High Color Mode", which uses 16 bits per every pixel and can represent accurately up to 65536 colors, or "True Color" modes, which use 24 or 32 bits per every pixel and can represent millions of colors. Pictures in High and True colors modes contain a lot of information to capture from the screen memory, compress and write to AVI file, and this takes a lot of time and disk space.

In many cases the programs that you want to capture will look almost as good in 8 bit color mode, where only 256 colors can be represented accurately. The programs optimize monitor's color map to make the best use of them, so you really do not lose that much quality. In 8 bit color mode the amount of information to capture and compress is 2, 3 or even 4 times smaller than in the other modes. These pictures can be also compressed fastest, and produce the smallest AVI files. Please consider switching your monitor into 8 bit color mode (or 256 colors mode) for AVI recording.

Sometimes also making the "Key frame" value on the AVI tab higher, or the "Frame compression quality" factor lower can help a little in improving the fps rate.

You may also consider recording a smaller picture to achieve higher frame rate for your movies. You could make a good use of HyperCam's panning capability to make up for the lower size of your picture.

Lastly, if you really need high fps rate and picture size, please consider going to a faster machine. Dual (or even more) processor machines running under Windows NT will give you advantage too, as HyperCam is using three program threads when recording. Windows NT will schedule the threads among all available processors to give you better performance.

Recording and Playing AVI Files

After setting all the parameters for your AVI file, selecting the screen area that you want to record, and noting all the available hot keys, you are ready to start recording your AVI file. You may start the recording immediately, by clicking on the *Start Rec.* button or pressing the start hot key (by default F2). You may also start in "paused" mode, where you will see the blinking frame marking the area to be recorded, and be able to pan this area, but nothing is recorded yet. To start in "paused" mode, click on *Start Paused* button or press the appropriate hot key (F3 by default). Then "unpause" when ready by pressing the "pause" hot key (F3 if you did not change it) again.

Once you start recording, you will see a blinking rectangle on your monitor. Everything within this rectangle, including your mouse cursor movements, will be recorded. You may also speak to your microphone to record the sound. You may move the blinking rectangle by holding the Shift key (or other modifier keys, if you have changed them on the *Hot Keys* tab) and moving the mouse. You may temporarily pause the recording, and then prepare the recorded program or move the rectangle, by pressing the "Pause" hot key (F3 by default), then when ready to resume the recording, press the same "Pause" key again. Finally you may stop the recording by pressing on the start/stop hot key (F2 by default) again. If you did not icons or hide HyperCam dialog for recording, you may also use HyperCam buttons to start/stop and pause/unpause the recording.



After you recorded a movie, you may play it by pressing on the *Play* button. HyperCam is not playing your movies. Instead it's asking your Windows 95 or NT to play them for you, using the default AVI player installed on your system.

The *Defaults* button may be use to reset all the options (record area, hot keys, AVI File parameters etc.) to the "factory" default values. HyperCam will remember all the parameters that you set, even if you exit it and restart later.

Advanced: Command Line Options

HyperCam may be started from a batch file, command prompt window or another application with a number of command line options (switches) that override default settings saved in the system registry, and also may cause it to start recording immediately. A summary of command line switches follows:

- rec HyperCam starts recording immediately on startup. HyperCam dialog window is iconized to the task-bar.
- recx Same as -rec, but also on stop recording (e.g. the user presses the hot key to stop recording) HyperCam will terminate.
- hwNN Selects the recording area to be the same as the area of a window (including frames and title-bar) with handle NN, where NN is a number in decimal notation. This option is useful mainly when calling HyperCam from other applications.
- xNN -yNN -wNN -hNN Select the recording area (x - left, y - top, w - width, h - height) in pixel coordinates. Upper left corner of the screen is (0, 0). If any value is omitted from the command line, the default value saved in the registry is used.
- fNN Select the frame rate (in frames per second). NN is a number, decimal fractions are accepted.
- a This option is for specifying the output AVI file name. The next argument should be the file name itself, e.g. HyperCam -a test.avi. Use double quotes to surround the file name, if it contains any spaces.
- i+ or -i- Turn on (+) or off (-) the adding of incremental number to the file name.
- s+ or -s- Turns on (+) or off (-) the sound recording.
- kNN Sets the key frame value for compressed AVI files. NN is an integer number.

Example:

```
HyperCam -rec -x100 -y100 -w300 -h200 -i- -a test.avi
```

will start HyperCam in recording mode. The recorded area will start at (100,100), the width will be 300 pixels, and the height 200. The AVI file name is "test.avi", and no numbers will be appended to the file name.

Registration and Support

Register your copy of **HyperCam** by clicking on the "License" tab in HyperCam, and then selecting "Purchase License..." button. This program is a 'try before you buy' shareware program that relies on your support for continued development, and single user registration is only \$30.00. When you register **HyperCam** you will receive a code that removes the "Unregistered HyperCam" mark from the AVI movies that you make, and become eligible for priority support. You will also be able to obtain free updates of the program through our Web page (address below) with which you can use your registration code, until the next major release.

You may also mail your check or money order written in US currency and drawn on a US bank, directly to the address below, payable to Greg Kochaniak.

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e-mail: gregko@hyperionics.com
<http://www.hyperionics.com>

License cost:

Single licenses: \$30 each

Site license: \$950

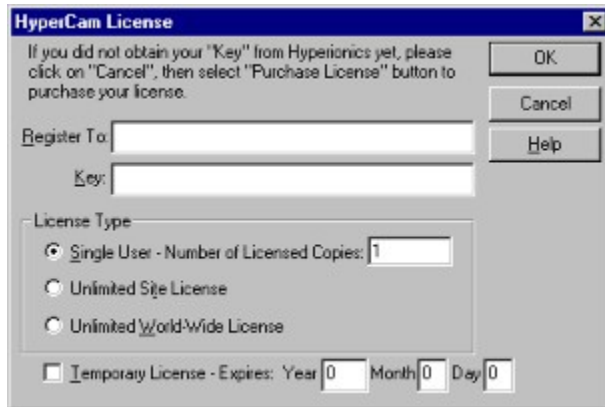
(Site licenses cover a single organization for an area of up to one hundred miles (160 km) in radius.)

World-wide license: \$2900

HyperCam may be also registered using CompuServe SWREG forum (GO SWREG), search for HYPERCAM name there. The price for single user license over CompuServe is \$34 due to the 15% charge they impose.

Entering HyperCam License

You should enter this dialog only after you have received an email or letter from Hyperionics, listing your license. If you do not have it yet, please click on **Cancel** button.



Your license letter will list your or your company name, the "Key" value, the type of the license and the number of licensed copies. Please enter all the data to the appropriate fields on the "HyperCam License" dialog. Please note also that your "key" string contains only capital letters from the English alphabet - there are no digits or other characters in it, except maybe for dashes or spaces to make the key entry easier. Whenever in doubt if O shape is "zero" digit, or the capital "O" letter, always enter a letter.

Please enter all strings (Register To: name and the key) exactly as spelled in your license letter from Hyperionics. Then click below in the "License Type" frame on the radio-button that marks the type of the license you have purchased. Most often it will be one or more "Single User" licenses. If this is the case, you must also enter the correct "Number of Licensed Copies", that will be stated in your license letter.

After entering the above in most cases you may just click on OK button at the top right corner. If all was entered correctly, the "HyperCam License" dialog will just disappear and you'll be back in HyperCam "License" tab. Your name and the license type should be listed there. If you see a message saying "The license key you entered is invalid...", please click on OK button and verify once again if all the data was entered correctly. Make the appropriate correction and try again. If it still does not work, please contact Hyperionics for the correct license key.

Occasionally you may receive a temporary license from Hyperionics - e.g. for evaluation purposes, or to let you work on an urgent project while your payment is in the mail or being processed. If you have a temporary license, you must click on the "Temporary License" check-box at the bottom of "HyperCam License" dialog, and then enter the exact expiry date in the Year, Month and Day fields. If you neglect to do so, or enter a date that differs from the expiry date stated in your license message from Hyperionics, the license will not work.

