
Application Note

KudosPro 'Still Mode'



The KudosPro 'Still Mode' feature is only applicable to models offering Motion Compensating conversion (MC500, MC1000 and MC2000).

There are four controls that affect the performance of the output and the function of these controls, in some cases, depends on the conversion mode that the Mach HD is performing. The four controls are: 'Motion Process', 'Enhanced Motion Process', 'Still Process' & 'Enhanced Still Process':

Motion Process

This simply turns on and off the Motion Compensation processing. This control should increase the sharpness and smoothness of moving objects within a sequence whilst frame rate converting. Most moving sequences should show an improvement when this is set.

When disabled, the conversion reverts back to a 20-point Linear Aperture conversion process. The normal setting of this control would be set to 'Enabled'. The function of disabling it is included primarily for demonstration purposes. It allows the Motion Estimation performance to be compared to a Linear conversion.

We may also wish to disable Motion Compensation should difficult content be encountered that introduces undesirable artifacts.

Enhanced Motion Process

This control sharpens up moving objects that have been detected by the Motion Compensation algorithm. If a sequence is processed that has a moving sharp area (e.g. some horizontal scrolling captions) and the 'Enhanced Motion Process' is toggled 'on' and 'off', a visible improvement in sharpness should be observed. On an occasional sequence where the motion compensation algorithm is struggling it can, however, cause a slight increase in perceived motion judder and hence the need to be able to disable the feature is included.

Still Process

This control turns on the adaption mode for 'stills' which may produce sharper results for these still areas. To observe this features function, a completely still, high detail picture is required. This control will work in all conversion modes.

This control would normally be used at the discretion of the Operator and the decision to enable would depend on the particular picture content.

Example:

Original picture:



This High definition screen grab lends itself to well to the purpose of demonstrating the Stills mode. The effect of the Stills mode is quite subtle, but magnifying into this picture we can see the sharpening of the finer detail



Still mode 'Disabled'

Note the spring just to the left of the cigarette packet. Also, the paper-clips and stamps.



Still mode 'Enabled'

Note that the spring is now better defined, as are the stamps and paper-clips. The effect is quite subtle but we can see the benefit of the Stills-Mode on this sharp, still image.

Enhanced Still Process

This button has multiple functions depending on the units operating modes:

- a) In all conversion modes it enhances the still detection routines to trap out specific types of motion that can confuse the 'still' detector. The effect of this feature, in this mode, is incredibly hard to spot! Its result is to remove the ghost image between moving repetitive structures, such as maybe seen on 'ticker-tape' content.
- b) In frame rate conversion modes, when motion compensation is enabled, it allows the 'Still' detector to bias the results of the motion compensation to give an improved distinction between 'still' and 'moving' picture content. When this aspect of the control was first introduced to the MachHD product, it had a significant performance improvement. However, recent work on the motion compensation algorithm means it is now less significant. Areas where you may see improvements are in sharp edged static objects. For the vast majority of conversion processes, this feature would be 'Enabled'. However, it is theoretically possible, that in areas of motion, the performance may be very slightly improved by disabling the Enhanced Stills Mode. For this reason the ability to 'Disable' this feature is included.