

GTH ELECTRONICS

Tips on how to use the ACE Converter and get the best results

First a note about the use of the “standards” buttons. If PAL and NTSC are Both Out then the ACE Converter works in what we call the Direct Mode. In this mode the ACE will accept any video standard and give out the same standard automatically. There is no timebase correction but all of the Aspect Ratio Conversion options are available. If either or both of the PAL and NTSC buttons are pressed IN then the output standard will be as selected by the 4 standards buttons, there will be timebase correction but you will not be able to use most of the Aspect Ratio Conversion functions. You can always use all the other video and colour adjustments.

Standards Conversion

To use as a simple converter see the User Manual page 4. Basically the ACE has Automatic Input Standard detection so accepts anything. All you need to do is to select the required Output Standard using the 4 “standards” buttons as described on page 4 or in more detail on page 8. If you don't want to make any video adjustments then press the BYPASS button IN. The ACE Converter then becomes a simple standards converter and no other controls work. The BYPASS button does not cancel conversion settings.

Timebase Correction

This is enabled whenever either or both of the PAL and NTSC buttons are pressed IN. For capturing or copying older VHS, S-VHS, 8mm or Hi-8 tapes this is essential. You must then select the correct output video standard, typically matching your input video standard. If your VCR also has a Timebase Correction function then we suggest you use this as well unless you feel it reduces quality as VCR TBCs operate differently and usually complement the ACE TBC.

Aspect Ratio Conversion

To use the full range of Aspect Ratio Conversion facilities you must use the ACE Converter in Direct Mode with Both the PAL and NTSC buttons Out. This does mean that you cannot do standards conversion at the same time. Please see page 10 of the User Manual for details of how to select the various modes. It is important to understand that there are 4 modes of operation:

With no buttons held in when the power is turned On there is no Aspect Ratio Conversion and the Digitise knob operates as described in the manual, giving an increasing paint effect. To see what is happening when you set up one of the other modes first make sure that Bypass is Out and that the Digitise knob is turned fully anti-clockwise. To use the Zooming or Aspect Ratio Conversion you must press in and hold the “Output Type” button when you turn on the power:

If you release the Output Type button immediately after the power has been turned On then the Digitise knob becomes a Zoom control. If you continue to hold the Output Type button in for at least 2.5 seconds you will see the picture height fall to 3/4. This is the letterboxing mode, used to convert full height anamorphic video to letterbox for a 4:3 screen. If you continue to hold the button In then after another 2.5 seconds the height will go back up to normal and the width will drop to 3/4. This is the Pillarboxing mode used to convert 4:3 video into full height anamorphic form for correct display on a widescreen TV as part of a widescreen production with black bars at the sides. Mode is locked once the Output Type button is released so hold it In long enough!

In all of these modes the Digitise knob will work as a zoom control. Used with letterboxing this can create the BBC's 14:9 format with reduced bars at top and bottom but some small amount of cropping at the sides. Used with Pillarboxing it will reduce side bars but with some cropping at top and bottom. With Option X you can use panning to select the part of the image which will be visible but for normal use the automatic centering of the standard ACE Converter is fine.

NOTE1: If either the PAL or NTSC buttons are IN then you can still use horizontal expansion if you select Zoom or Letterboxing modes. This will allow full height anamorphic video to be converted to full height 4:3 with cropping at both sides while still doing standards conversion.

NOTE2: If you need to do both Standards Conversion and Aspect Ratio Conversion then these can be done separately with intermediate storage on a loss-less PC or DV system. The optimum order for Letterboxing is to do the Standards Conversion First. With Letterbox to Anamorphic or Pillarbox conversion with Zoom the optimum order is to do the Standards Conversion Last.

Video Correction/Enhancement

If Bypass is Out then you can use all these controls to correct and/or enhance your video:

Contrast, Brightness and Colour Saturation can be used to make the same type of corrections you can make on a TV but of course they will be permanent changes on your copy. Naturally you cannot replace what is not on the original so some defects such as loss of detail on highlights which are too bright will not be corrected although the overall appearance can often be improved by careful use of the adjustments. We suggest you “calibrate” your TV using the colour bars test pattern to reduce the risk of compensating for an incorrectly set monitor!

The Red, Green and Blue White Balance controls should be set for a neutral white on an area known to be white or otherwise used to get the overall colouring looking natural. Don't forget to use the **Colour Balance** control as well. This acts quite independently and with whites correct should be used to get the correct the colours of the coloured areas with particular attention to skin colour for which this control is very well suited.

Horizontal and Vertical Colour Shift. These help to correct some of the defects on analogue tape recordings due to the separate recording of the colour and the black and white parts of the image. Colour TV has always taken advantage of the human eye's ability to see more detail in brightness changes than in colour changes within an image by transmitting or recording less detail in the colour. The eye then takes its sharpness cue from the black and white image and imagines the colour to be sharper than it really is. However this only works if the black and white part and colour part are correctly aligned. Any alignment error causes this fooling of the eye to fail. Unfortunately some VCRs do not maintain this alignment adequately and with multiple copy generations this fault can be compounded. Re-alignment is the only answer and the ACE offers both directions of colour shift.

The corrections detailed below (and in the user manual) can be made to correct just the source, in which case all you need to do is monitor the source video and adjust the controls for the best overall effect. However it is also possible to pre-correct for a recording VCR as well. In this case we suggest you make a short test copy with all controls neutral (or Bypass pressed In). Then play this copy through the ACE and make suitable correction settings for the best effect. Finally use these settings for the full proper copy (power must not be turned off or the vertical settings will reset to normal!).

The Horizontal Colour Shift control moves the colour left and right relative to the underlying black and white image. For example if a footballer has red socks and the red is not on the sock but to one side then the image looks messy and not sharp. If you move the red colour onto the sock then the image looks much clearer and cleaner. To get the feel of this control we suggest you move the control fairly quickly over its full range and look carefully at any small coloured areas or at the edges of larger coloured areas (looking at both left and right edges in this case).

The Vertical Colour Shift button moves the colour upwards relative to the underlying black and white image each time you press the button with a maximum of three vertical moves, after which the colour will drop down to its original position and the cycle starts again. For example if there is a blue sky over a green hill you will often find the top of the hill is blue from the sky. This is because the colour on many modern VCRs drops down one line, no doubt as part of the processing which is designed to optimise some other part of the overall recording performance. This control can be used to push the colour back up to its correct position. To get the feel of this control we suggest you push the button in repeatedly fairly quickly and look carefully at horizontal edges between large blocks of colour. The colour will jump up three times and then drop back down again. It should then become clear where the best setting will be but remember you will have to go around the full cycle until you reach the correct point again!