



Importers and Wholesalers of DVB Digital Terrestrial and Satellite Products

## How to get the best out of your Topfield Satellite Receiver with HD Up-Scaling

*NOTE: This document makes no attempt to explain every aspect involved in de-interlacing and up-scaling a 576i picture. It is simply designed to give the end users a very basic overview of what they can expect from the Topfield up-scaling satellite receivers and how to get the best results. A more detailed explanation of the science of video up-scaling can be found at the following location.*

<ftp://ftp.diku.dk/diku/image/publications/keller.071204.pdf>

Freeview Satellite is a TV service available to all New Zealanders with the correct equipment. Freeview|HD is a digital terrestrial service on UHF aerial which launched more recently and contains High Definition footage from New Zealand's major broadcasters, but is only available to an estimated 75% of the population. And only in nine main city areas.

So what can you do if you want fantastic HD quality pictures but do not live in any of the areas covered by Freeview|HD? Topfield has the answer.

Using one of the Topfield up-scaling satellite receivers (**TF5050CI** or **TF6000PVR ES**) you can still get a High Definition output even from the standard definition signal coming via Freeview Satellite.



The signal received from the satellite is a resolution of 576i. What does that mean? 576 refers to the vertical resolution of 576 lines (an analogue picture has 625 for other purposes but this document will deal in digital signal only) and the *i* identifies it as an interlaced picture which is a technique that uses 2 fields to create a single frame, originating from the days of CRT (non LCD or Plasma) display devices. A basic explanation of interlacing is the first field contains the data of every odd line, and the second field contains that data for every even line of the picture. These two fields are mixed together to create the final frame.

Because the two fields are not exactly the same due to being recorded one after the other, the mixing can cause what appears to the end user as jagged edges to parts of the picture when displayed on a progressive display such as an LCD screen. The problem is at its worst with movement such as scrolling text.

In addition to that your LCD screen is most likely capable of much larger resolutions than 576. Most screens will accept signals of 720 or 1080 resolution.



So in order to deal with these limitations, the Topfield receivers mentioned above can de-interlace the picture and increase the resolution to the setting you require. The options are **576i** (which is untouched), **576p** (which is no resolution increase simply de-interlaced), **720p** (which is both de-interlaced and resolution increase) or **1080i** (which is still interlaced but increased in resolution).

## Which one is best for you?

Well there are a number of factors to consider. The results will vary with the make and model of your LCD TV as different TV's have different aspects that can affect the result. The **standard** TV ratio for a widescreen TV is 16:9 which works out to be a pixel resolution of 1280x720 or if a larger screen 1920x1080. However with the introduction of more affordable LCD TV's, **newer** screen resolutions are often 1380x768 or something similar. The Topfield units output at the original **standard** aspect ratio of 16:9, meaning that if your TV has the latter **newer** resolution, the picture will need to be processed again by the TV to fit the screen.

As with any digital picture, double processing will usually decrease the quality of the picture especially if it is enlarged then enlarged again. If your TV has a resolution of 1380x768 or similar, the best results are usually seen by setting the Topfield receiver to 1080i as the second processing is reducing, rather than enlarging the picture producing a better result.

If your TV resolution is a standard 16:9 aspect ratio then simply choose the option that best matches your resolution.

For more information or assistance in choosing an HDMI receiver please call us on 07 825 5254