Deinterlace

Use the Deinterlace filter to convert video from interlaced to de-interlaced (progressive) form. As explained in Video Scan, a television NTSC/PAL video frame is constructed of two interlaced interlacing fields as a pair, displayed serially, one after the other.

Computers, mobile phones, and other devices use progressive scan, showing a whole frame at once. Accordingly, interlaced video should be de-interlaced to be displayed on these devices.

Settings

Field Order

Select the option to determine which field is dominant.

- **Top** indicates that the input should be processed as top-field dominant.
- **Bottom** indicates that the input should be processed as bottom-field dominant.
- **Automatic Detection** analyzes the correct field order (recommended).

**NOTE:** If the Field Order filter is activated, the values set in that filter are used and this setting is ignored.
Creating New Fields by

Create each de-interlaced frame from two fields.

- **Duplication** - Duplicates the dominant field – quicker with less lower visual quality.
- **Interpolation** - Creates new pixels by linear interpolation of the nearest pixels in the dominant field only; the non-dominant field is discarded. This method provides better results than *Duplication*, but requires more processing time.
- **Blending** - Averages both fields to smoother motion; less sharpness than *Interpolation*.
- **Smooth Blending** - Averages both fields, then applies the lowpass filter to the frame. This method provides a smoother image, but is slightly slower than blending.
- **Edge Detecting Interpolation** - Interpolates pixels (only vertically). *Edge Detecting Interpolation* attempts to find similar elements in the frame and detect edges before interpolating. This method provides more distinct diagonal edges in the output.
- **Edge Detecting Interpolation Heavy** - Interpolates in the same manner as edge detecting interpolation, but with a more detailed algorithm. This method slows encoding, but provides better results.
- **Motion Compensation** - Analyzes the motion of objects in the video to obtain more information on how to best create new frames. This method provides sharper output than blending, while preserving smooth motion. *Motion Compensation* usually provides the best results, but may result in artifacts in scenes where motion is difficult to estimate. This method is computationally intense, and therefore the slowest. **NOTE**: Motion Compensation *requires deinterlacing of all frames, therefore the Deinterlace Type setting is ignored when using this method.*

This table displays an original image, and images processed by various methods in the Deinterlace filter, to illustrate how these methods change the visual result.

<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Unprocessed interlaced frame" /></td>
<td>Unprocessed interlaced frame</td>
</tr>
<tr>
<td><img src="image2.png" alt="Duplication" /></td>
<td>Duplication</td>
</tr>
<tr>
<td>Deinterlace Type</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Select the type of deinterlacing from the dropdown menu:</td>
<td></td>
</tr>
<tr>
<td>• <strong>Complete Deinterlace</strong> - Deinterlaces the entire frame.</td>
<td></td>
</tr>
<tr>
<td>• <strong>Deinterlace Interlaced Frames (Automatic)</strong> - Completely deinterlaces source frames that are determined to be interlaced. This option is suitable for material with both interlaced and progressive frames, such as telecine material.</td>
<td></td>
</tr>
<tr>
<td>• <strong>Deinterlace Interlaced Frames (Manual)</strong> - Completely deinterlaces source frames that are determined to be interlaced based on the value in the <em>Threshold</em> field. This option is suitable for material with both interlaced and progressive frames, such as telecine material.</td>
<td></td>
</tr>
<tr>
<td>• <strong>Deinterlace Moving Areas (Automatic)</strong> - Deinterlaces the moving parts of each video frame. This option is not suitable for material with progressive frames, such as telecine material.</td>
<td></td>
</tr>
</tbody>
</table>
• **Deinterlace Moving Areas (Manual)** - Deinterlaces the moving parts of each video frame.

Deinterlacing is performed on those macroblocks where the average luminance difference between the two frames exceeds the value in the *Threshold* field. This option is not suitable for material with progressive frames, such as telecine material.

---

**Double Frame Rate**

Separate interlaced frames into two consecutive frames. This doubles the frame rate, so it is necessary to apply the *Frame Rate* filter to keep the original speed. One application of this function is converting from high-definition interlaced material to standard-definition progressive material.

---

**Threshold**

Set the threshold for when deinterlacing should occur. The entered value determines how large the difference can be between the pixels of the two fields before deinterlacing. If the value is set to zero the whole frame is de-interlaced.

---

**Deinterlace Chroma**

Check to indicate that the chroma channel is interlaced in the source material and has to be de-interlaced as well. It is not always easy to know if the chroma channels are interlaced or not. One way to find out is to open the clip in the *Preview Window* and step through it frame by frame.

---

<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="Image" /></td>
<td>Only luma de-interlaced</td>
</tr>
</tbody>
</table>
Both luma and chroma de-interlaced

**NOTE:** Only apply Deinterlace to interlaced content. If applied to noninterlaced content, undesirable artifacts are created. If you are using the Field Order filter, make sure your source material has not been de-interlaced prior to use of this feature.