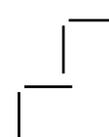


Result	Filename	Size	Status	Progress	Start Time	Poster Frame
●	ftp://192.168.200.10/content/movies/grand_hotel.ts	9.81MB	Complete	100%	2006-03-18 05:08:11.0	
●	ftp://192.168.200.10/content/movies/in_flight.ts	11.25MB	Complete	100%	2006-03-18 05:08:30.0	
●	ftp://192.168.200.10/content/movies/vegas_train.ts	20.24MB	Complete	100%	2006-03-18 05:08:31.0	



# How To Correctly Detect Aspect Ratio

Technical Brief



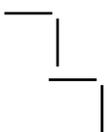


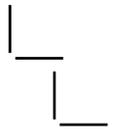
## Technical Brief

Accurately detecting the aspect ratio of the non-black areas of a picture is essential for correct playout through automation systems, format conversion or content repurposing with transcoders. This step is where the zoom, pan-and-scan or crop operations occur.

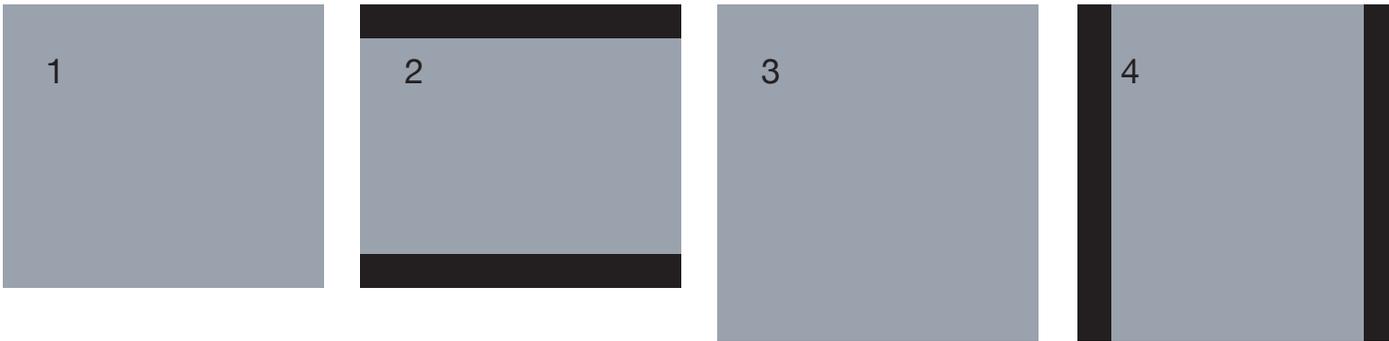
Only testing the flagged aspect ratio of the material to be transmitted may not be sufficient. For example, Standard Definition (SD) broadcast material will always have a 4:3 aspect ratio—the measurement of the physical picture size

in pixels—and will be notated 4:3 in the stream properties and metadata. To detect the non-black picture aspect (the region between black bars), Cerify's Letterbox and Pillarbox tests in the video templates are used. By setting the Letterbox test to a 16:9 ratio, Cerify will measure the position of the black bars on the uncompressed baseband picture. If the test reveals an incorrect size, missing, off center or not true black, an alert will be triggered. Files that pass the Letterbox test are guaranteed to have a 16:9 picture aspect ratio within a 4:3 SD asset.





## How To Correctly Detect Aspect Ratio

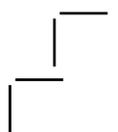


The test results can be used by automation systems to correctly set up conversion-to-zoom so unwanted black bars are removed. In the case of full-frame 4:3 aspect ratio material, pillarboxing is added to the High Definition (HD) up-conversion rather than losing the top and bottom of the picture. Conversely, HD material that is physically 16:9 in aspect size, but is pillarboxed, can use the tests to inform the automation system that an SD down-convert can safely strip away the black bars to either side of the picture.

To check if there is letterboxed picture information within SD 4:3 video, enable the "Letterbox" test in Cerify. Full-screen material filling the 4x3 screen should pass testing. Letterbox material would fail with this Cerify test, returning an alert that letterboxed material was found. The same test can be applied for pillarboxed HD content.

Determining the picture information aspect:

1. SD & no alert, then Aspect = 4:3
2. SD & letterbox alert, then Aspect = 16:9
3. HD & no alert, then Aspect = 16:9
4. HD & pillarbox alert, then Aspect = 4:3





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### For Further Information

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit [www.tektronix.com](http://www.tektronix.com)



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