



QuickTime Test Pattern Movies (Version 2)



Introduction

Comprised of several Quicktime files (.mov) that have been carefully created to produce known results when displayed on Apple devices and operating systems, the QuickTime Test Pattern Movies provide a convenient way for you to evaluate the color characteristics of your content creation workflows. The files can be used as reference targets when validating the color reproduction on reference monitors such as the Pro Display XDR.

Instructions

To install the QuickTime Test Pattern Movies, double-click the `QuickTime-Test-Pattern.zip` to decompress the archive. Inside the `QuickTime Test Pattern Movies` folder you will find several additional folders of test pattern files enabling you to test color primaries/secondaries and luminance. These files can be opened by QuickTime Player (version 10.5 or later) or other apps or workflow that properly support the QuickTime file format.

Test pattern measurements should be taken with a third-party spectroradiometer after aligning the instrument to the center of the display in a dark room to prevent stray light or glare from influencing the measurements. Each folder contains a `Reference Values.txt` file that details the expected chromaticity and luminance values that are expected from the measured result. Depending on your instrument and its calibration, there may be some variation in readings due to its tolerances.

To validate the color correctness of apps across your workflow, open the relevant test pattern movie files in your app, measure and compare the results per the above. If you encounter divergent results, check for an updated version of your app that takes advantage of the High-Dynamic Range and color management capabilities of Apple operating systems.

Note on Measuring Pro Display XDR

Pro Display XDR includes several built-in reference modes that change the color characteristics of the display to match media standards. It is important to match the reference mode to the test pattern you are using, for example use the *HDR Video (P3–ST 2084)* mode when using the HDR10-based patterns or the *HDTV Video (BT.709–BT.1886)* mode when testing BT.709 patterns.

Other Notes

The QuickTime Test Pattern Movies contain tagged High-Dynamic Range (HDR) content. They are intended for use on iOS 13, tvOS13 and macOS Catalina 10.15.2 and later.

Due to the wide color P3 primaries and brightness capabilities of many Apple displays, we recommend using a calibrated spectroradiometer for measurement to ensure best results.

Measurements should always be made in a dark room so that other light sources don't get into the measurement instrument's lens and skew the results.

To ensure accurate measurements, the display being evaluated should be powered on for 30 minutes to an hour in a temperature controlled environment before taking readings.

The built-in color management in macOS relies on color tagging to understand the authoring intent of images and video files. For detailed information on the tags required to properly signal HDR, see [High Dynamic Range Metadata for Apple Devices](#).

If you custom develop your own measurement solutions or apps, see the following developer support documents for [Implementing Tone Mapping on Reference Displays](#) and [Displaying HDR Content in a Metal Layer](#).

Change History

version 2.0.2 (June 02, 2020)

- Added test patterns for Digital Cinema (P3-DCI), Digital Cinema (P3-D65) and Internet & Web (sRGB) reference modes

version 2.0.1 (March 17, 2020)

- Updated luminance targets of color primaries and secondaries for SMPTE_C and EBU color test patterns in *Color Primaries and Secondaries/SDR_BT601_NTSC_SMPTE_C/Reference Values.txt* and *Color Primaries and Secondaries/SDR_BT601_PAL_EBU/Reference Values.txt*

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