Radio Days – 2013-06-01

Discussion – Adjusting Your Monitor

If you are a photographer who wants good photographs to come out of your printer (or the printer at the photo print shop) then you will want to ensure that your monitor gives you the best results that it can give.

The website given at the end of this article will help you adjust your monitor for best results in your photography. There are 15 steps in the process, from ***Introduction*** to ***Conclusion***. Before you start you will need to find out where on your monitor you can change its settings. On some monitors there are wheels underneath the screen, on others a single button which has a number of functions, and other monitors have a range of setting knobs, buttons, etc in various places.

If you are in the market for a new monitor you can download these web pages in .zip format (this is a format which Windows can read easily) and place them on a USB stick so that you can test a monitor in the store.

When in doubt RTFM (Read The Flaming Manual).

Introduction

This page tells you all about what is going to happen to your monitor. It is well written and worth reading. It gives you some alternatives, like the chance to download the tests so that you can run them later or on another monitor.

Contrast

This screen shows you nine coloured bars going from almost black to almost full colour. Your task is to adjust the contrast, and perhaps the brightness, so that you can see all colours in all nine bars with distinct variations, especially in the darkest few segments and in the brightest few segments. There are reference images so that you know what you are aiming for: these images are at the bottom of the page so you will have to scroll down to see them.

Display Settings

In this section the web page displays the settings for your monitor: resolution, description of the resolution and the colour depth (number of bits per pixel). As the page states, it cannot check that your monitor is running at its native resolution: it is up to you to find your monitor's native resolution and set your video card to display at that native resolution.

These setting will be found on your monitor's and your video card's instruction booklets. That is, if you can find them!

Clock and Phase

This detailed image of alternating black and white pixels whose size is set to the resolution of your monitor. It is best shown at full screen so that you can see the red line on the left- and right-hand side of your monitor.

Using Opera you press F11 to enter full screen mode and press Esc to leave full screen mode.

Sharpness

The sharpness screen allows you to set your screen controls so that you can adjust the edges between light and dark areas. Please make sure that you set your monitor correctly for this test (if you can) so that gamma calibration (the next test) works correctly.

Gamma Calibration

This allows you to set your monitor to match your digital camera's display. Modern monitors (ie since about 2007) should have a gamma of about 2.2 depending on the brightness.

Black Level

This test shows you how well your monitor can display blacks. For photographers, there are 256 levels of each of the three primary RGB (Ref, Green, Blue) colours. Thus your photos can have 16 million colours (256 * 256 * 256 = 16,777,216) for the standard JPEG images from your camera. Each colour is given a three-part number, one for each of the three primary colours, in red, green ,blue order. This means that pure black is (0,0,0), pure white is (255,255,255), pure red is (255,0,0), pure green is (0,255,0) and pure blue is (0,0,255).

This test shows the first fifteen blacks plus white: your monitor should be able to display all of these colours.

White Saturation

This test checks that your monitor can display light grey colours on a white background. The greys are colours from (244,244,244) to (254,254,254) and you should be able to see all of them on the white background (255,255,255).

Gradient (Banding)

This test shows two broad bands: the top one goes from pure black to pure white and you should see no bands, lines or colours. The bottom band goes from pure white to pure black and, again, you should see no bans, lines or colours.

Inversion (Pixel Walk)

This test shows some squares which may or may not flicker. This is designed to show how your monitor handles large amounts of plain colours in a photograph. If you see flickering here on your monitor you may want to take it to be adjusted at a competent workshop.

Response Time

This test is an interesting one: it shows how quickly your monitor can change from one colour to another. If your monitor is too slow then you will see ghosting or different colours: which you see depends on exactly what is changing to what.

For best results scroll down the web page to see the various tests which are available and just how good or bad your monitor really is!

Viewing Angle

Run this test in full screen mode to see how good your screen is when viewed from various angles. The colours will not vary if you have an outstanding screen, and depending on your screen you may find that, at wide angles, your screen may give very bad results. Scroll down to see all the colours which are displayed on the web page.

Again, this test is best performed which your browser window at full screen.

Contrast Ratio

The contrast ratio has different meanings in different circumstances. For viewing movies in a dark room some monitors will compensate by changing the brightness of the backlight. For most monitors, after all these tests, you will know that you can see both full black and full white so the contrast ratio is mostly academic.

Sub-Pixel Layout

Sub-pixel layout helps you work out which is the best method of enhancing the text on your screen. There are four types of sub-pixel layout (and these are explained on the web page) and there are instructions for improving the display of text for various operating systems.

Conclusion

The conclusion on the web page explains about gamut, which the web site cannot test. Gamut is the saturation of the colours displayed by a monitor, and is expressed as a percentage of the NTSC gamut.

NTSC has two meanings: *Never The Same Colour* and *North American Television Standards Committee*. I prefer the first one because NTSC television displays appalling reds, as anyone who has seen American television can attest!

Further Information

Adjusting your monitor	www.lagom.nl
Opera Browser	www.opera.com