Toshiba Regza 46RV53OU 46″ 1080p LCD HDTV - JULY 4, 2008

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HDTV

Introduction
Toshiba, who once at the very peak of HDTV technology has, in the last few years, not done a great job at keeping up. A multitude of reasons caused this, including the vast amounts of wasted resources spent into the now extinct HD DVD technology, and the failed joint venture with Canon for the SED display technology market.

The Regza name is derived from the German word “Regsam”, meaning color and dynamic vitality. The 46RV53OU is a full HD display which used to have the same model number as one of the Sony models. While the Sony naming structure has not changed, Toshiba has changed theirs and now has multiple lines with some variations in the naming. Sharing a name with a model from another manufacturer is clearly not the brightest marketing decision for a company looking to distinguish itself from the rest of the pack. The version of this HDTV sold in Europe (the one I reviewed) is 46X3500. It differs from the USA version in price and that it (European version) has only two HDMI inputs.

Specifications

- Design: LCD Flat Panel Display, 46″ Diagonal
- Dynamic Backlight Control
- 14 Bit Internal Processing
- Inputs: 4 HDMI, 2 Component, 2 S-Video, 2 Composite
- Dimensions: 29.4″ H x 43.7″ W x 12.1″ D
- Weight: 63.8 Pounds
- MSRP: $1,799 USA

- Toshiba

The Design
The unit itself has a typical Toshiba look and comes with a crescent shaped stand. The display is not outstanding in its appearance and seems quite plain. Of course, when the room lights are dim and you are watching TV, all that really matters is the image on the screen.

One side of the display contains buttons that let you control it, as well as connect an SD camcorder (the omission of an HDMI input is blaringly obvious). The back holds two sets of composite and component inputs, as well as two HDMI inputs and an RF input as well. I had an early version for review, and the latest iteration of this model has four HDMI inputs.
The TV came in a massive box that reminded me of how flat panel displays were packed three or four years ago. Cardboard boxes have been dramatically shrinking for cost savings, better “packability” factor, and to show how companies are producing less waste. When the unit is taken out, it becomes a bit clearer why the box was so large. The massive half moon base of the unit is built in, instead of coming in two separate boxes and having to deal with during installation.

The typical two side speaker solution has been replaced with a thin bar at the bottom of the screen, containing the speakers. The screen chassis itself serves as a larger chamber to allow the unit to produce deeper bass. The volume of the unit is more than sufficient for most of your “talking heads” newscasts and simple content. I would not dare use these speakers for proper audio or movie watching.

The remote on this unit looks very Toshiba style and has virtually the same design and look and feel as with their HD DVD players. It is comfortable but feels like cheap plastic and a step down from the display itself.

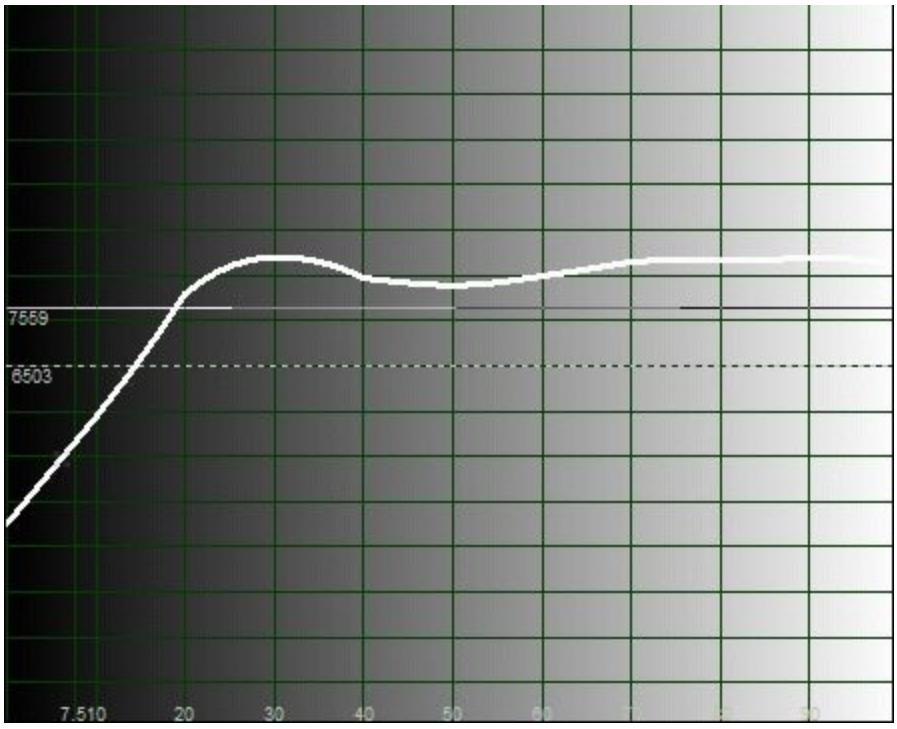
On the one hand, there are no discrete buttons (access to the HDMI inputs, separate on/off buttons), but most of the buttons on the remote are dedicated for useless analog RF functions, and many simply don’t do anything at all (maybe I need to be in a special mode to make use of them, or maybe this remote is shared by other models).

The Performance
The screen itself has a matte finish so it does not produce reflections from ambient room light.

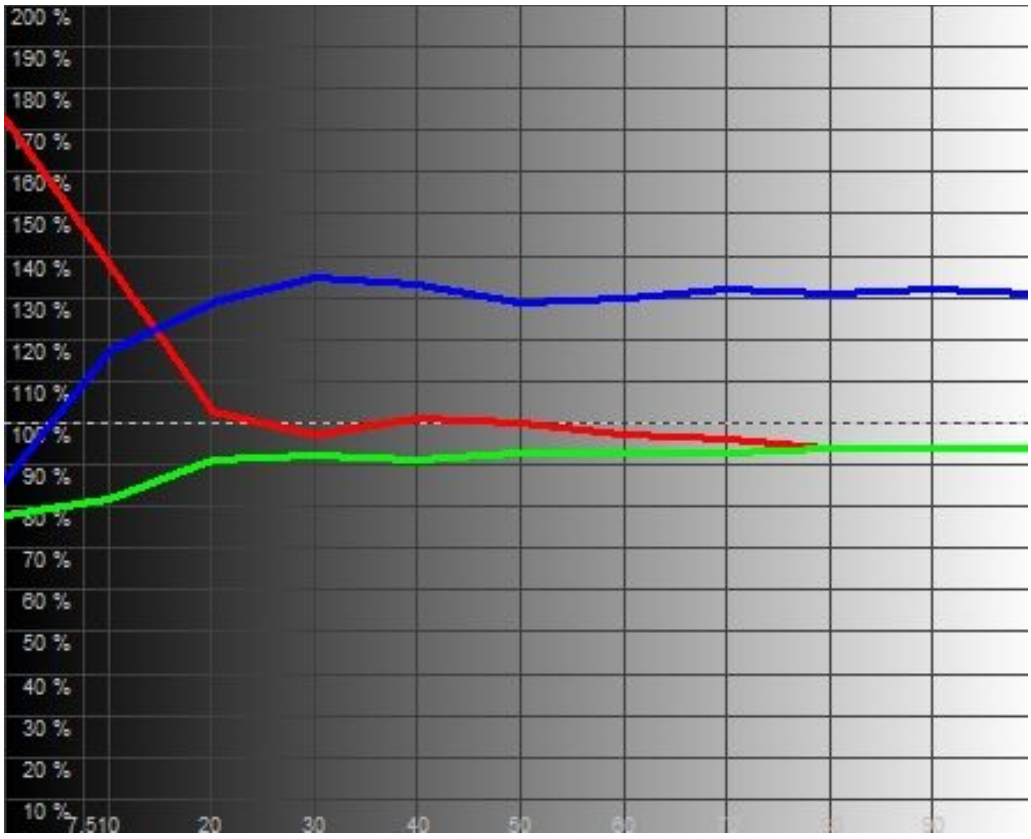
The blacks on this unit are deeper than I could have hoped for. Dynamic backlight usually rates at around 3:1 or 4:1 between the light it produces when full on to full off. This display measures at roughly 10:1, which means that the dynamic backlight is way more aggressive than any other LCD I've tested so far. This has both good aspects to it (it can go really dark) and bad (you can see the backlight shifting during many scenes).

This display produces a distinctly bluish picture (Japanese prefer a high color temperature). The WARM setting produces 8300 degrees Kelvin (almost 30% too high!) The display does have some controls for color adjustment and calibration, but I think that this was done intentionally, and that's simply too bad.

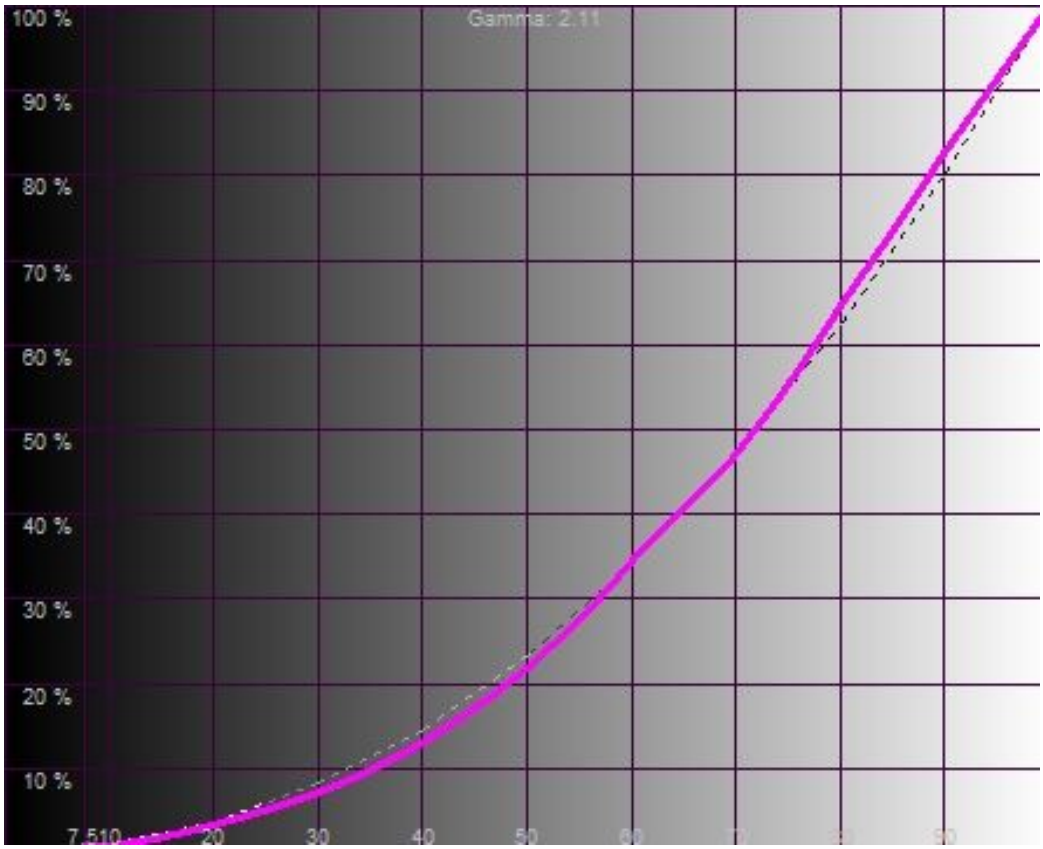
Primaries do not seem too out of control, and the typical lack of blues is shown here too. Testing temperature stability shows somewhat problematic results. Not only is the blue turned up way too high, the reds suffer from some stability issues throughout the range. The resulting data were less than stellar. Here is the color temperature graph.



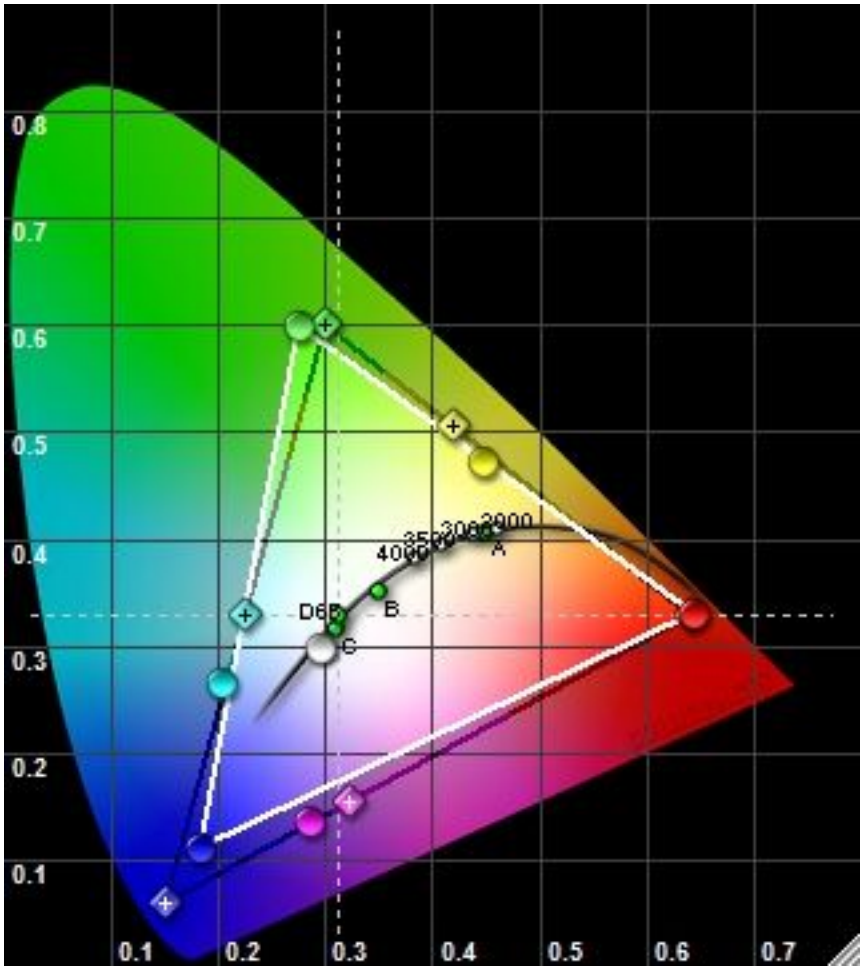
The RGB levels. Remember that I said it looked too blue? Here is the proof. Note that this does not conflict with the CIE chart shown below where it indicates that the blue is undersaturated with respect to the HDTV standard. The blue can be turned up too high without being “saturated” enough.



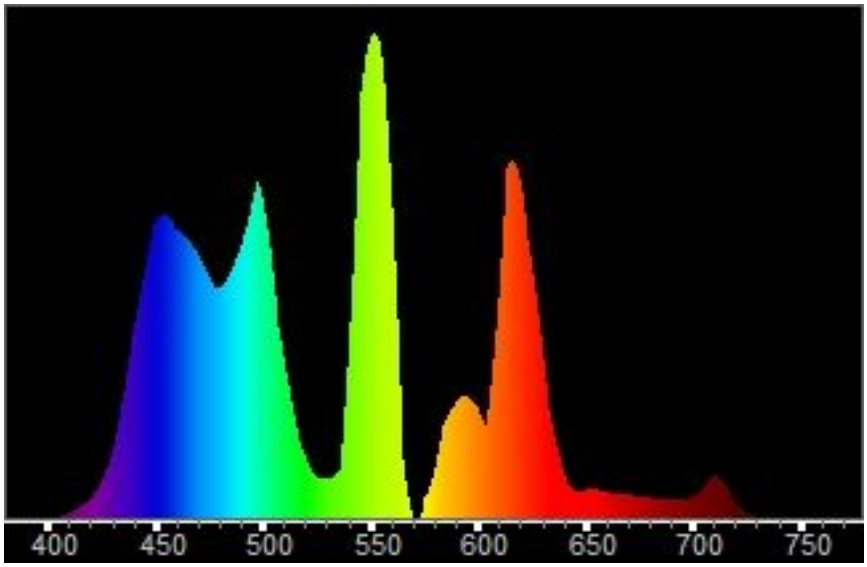
Gamma was determined to be 2.11, which is satisfactory.



Here is the CIE chart.



And a spectral scan.



The screen was one of the brightest I have tested, measuring at over 620 cd/m2 – producing a 26,000:1 Full On/Off Contrast Ratio! Measuring ANSI contrast, I got the amazing results of nearly 4000:1!

I tested SDTV content through S-Video and component. Hooking up an SDTV STB to the S-Video connection produced problematic results. The image was oversaturated and skin tones were superficial, having a plastic look to them. Turning on black stretch helped reduce this effect, although this feature is supposedly irrelevant to color and should only affect black level detail. The reason for this issue became clearer after playing with various test patterns. The display's aggressive contrast

ratios come at a price: color accuracy. This is particularly bothersome on the darker APL ranges where skin tones noticeably become less and less realistic.

The screen comes with two non linear stretch modes called LIVE, intended to be used to convert 4:3 content into widescreen format. I don't often encounter such bad performance from this type of option. The algorithm is so aggressive, one can easily become sea sick. I felt a migraine coming on after trying to watch more than 15 minutes using the LIVE aspect ratio modes.

SDTV content seemed to look better coming from S-Video than it did using the HDMI inputs. De-interlacing was not phenomenal, but it gave adequate results, whereas the screen's scaling algorithm is really subpar. SDTV content was staircasing and edges were constantly shimmering. The screen lacks any parameters or settings that can improve this situation.

Watching some HDTV woke me up a bit from the slump of these results. I watched an old high def recording of a Wimbledon tournament, and you can actually see the expression on each and every viewer behind the players. The screen does suffer from exaggerating some of the MPEG artifacts, but overall the image was quite good.

Hiro's first trip to times square was very well detailed but very noticeably too blue to be realistic.

Low light scenes in *The Fifth Element* required me to turn the black stretch feature back on. Not doing so caused both banding and reddish grain and turning Lilu's face into a dithered red mess. It was quite a bit better with black stretch on, but still not nearly as nice as some of the other displays I have tested using that very same scene. The black guard uniforms were virtually undetailed, as all the black detail was simply clipped by the contrast enhancement that this display offered.

The display does offer native rate support when it senses 1080i or 1080p on one of its HDMI inputs. The EXACT SCAN aspect ratio can then be selected and used – quite nice for turning off the internal scaler and switching to 1:1 for Blu-ray or HD STB content.

Bright scenes were both vital and colorful. I really enjoyed watching the animal gladiator scenes in *Attack of the Clones*.

The importer gave me a Toshiba E1 HD DVD player to play with. These unit now sell for cents on the dollar as upscaling DVDs, but given that I had a few HD DVD titles, I tried them out. Not much difference in quality when comparing with their Blu-ray counterparts (the DTS HD MASTER demo disk really helps in comparing the two).

The 46RV53OU has some simple primary color adjustments. Trouble is, they only affect analog inputs by changing factors on the A/D converters. Toshiba failed to add proper controls to the display, which definitely doesn't help the image any.

Lack of HDMI 1.3 support includes failure to support 24 fps, CEC, and wide gamut XVYCC color. The real kicker for me was the lack of 120 Hz support. I would not dare buy an LCD display these days without 120 Hz support. Even with repeated frames, this option can dramatically reduce the amount of compression (MPEG) artifacts, dithering and other issues by significantly improving the gray-to-gray response time. This display uses an 8ms response time (black to white) which tends to smear content but also exaggerates compression artifacts. 120 Hz would have really worked wonders here. This particular model is the least expensive in the 46″ LCD line, and the other two models have 120 Hz support.

Not everyone likes to keep 120 Hz on. I know several videophiles who suffer greatly from this algorithm. The image seems way too realistic and gritty. The camera bounces up and down even when it is supposedly stabile. People move too fast and too fluid on the screen. Some content can suffer from this algorithm, because the 120 Hz algorithm mistakes artifacts for real content, often leaving trails of blur and mosquitos during fast motion bit-starved scenes.

I only noticed the aggressive backlight a few times during testing, particularly during fast switches from dark to bright scenes or vice versa. Overall the process is quite harmless and transparent to most users. Sensitive users will definitely notice it though (as they would with most displays, but this one is more aggressive than the rest).

Conclusions

If an HDTV like this had been available three years ago, it would have been spectacular. However, this is mid-2008, and there are lots of excellent 1080p units out there. In short, although the contrast ratio on the Toshiba 46RV53OU was exceptional, the overall performance was disappointing.