

# Samsung defends Android Galaxy S3 PenTile display

14 May 2012, by Nancy Owano



(Phys.org) -- So what's a hot new Galaxy S3 smartphone doing with a PenTile AMOLED display like this? That is a question that surprised developers and smartphone blog sites earlier this month when Samsung announced in London its new Galaxy S3 with a 4.8-inch 720p resolution display that uses a PenTile subpixel layout. Expectations were that the Galaxy S3 would carry another type of upgraded display. The PenTile design had drawn disappointed reviews when it had earlier appeared on the Galaxy Nexus phone. This week, however, a Samsung spokesperson stepped forward to explain why PenTile was still chosen: Samsung wants the S3 phone displays to last longer.

Samsung's Philip Berne, a marketing manager, discussed the PenTile instead of RGB matrix decision. (RGB stands for "red green blue," referring to the subpixel matrix used in displays. The PenTile pixel system uses sub-pixels in a different formation than do RGB displays.)

Berne told *MobileBurn* that the choice came down to durability and longevity. Samsung, he said,

determined that PenTile AMOLED displays have proven to be more reliable than those with RGB layouts.

Displays that use AMOLED technology have a tendency to deteriorate over time. Blue subpixels on AMOLED displays degrade the fastest, quicker than the red or green subpixels. With a PenTile layout, the subpixels are arranged RGBG (red, green, blue, green), so they feature more green subpixels and fewer red or blue subpixels than an RGB format.

As a result, AMOLED displays with a PenTile layout have a longer lifespan than those with RGB layouts.

Those who have panned the PenTile arrangement in the past complained that the screen does not look as crisp as an RGB [display](#) and that, with the PenTile display, images may appear fuzzy around the edges. Berne, however, pointed out in *MobileBurn* that improvements were made. He said that, in comparison with the 4.65-inch 720p Super AMOLED screen on the Google Galaxy [Nexus](#), the Samsung 4.8-inch display on the Galaxy S3 features smaller gaps in its subpixel matrix, to minimize fringing effects in a PenTile layout.

Still, it seems that the PenTile decision this week has generated mixed reactions, if not emotions, from [smartphone](#) bloggers and developers. "No plus here," was one reaction to the news that the panel is featuring a PenTile RBGB pixel arrangement. Another comment was "Nice [processor](#), shame about the PenTile."

Longevity may be a bigger plus, however, for average Samsung consumers than for a more demanding, pixel-sensitive, user base. What's more, favorable reactions among [Samsung](#) Galaxy S3 reviewers were also forthcoming. They said they found no problem created by the display design.

"We really could not see any issues with the [screen](#)," wrote Dan Seifert in *MobileBurn*. Elsewhere, several Android forum contributors said that PenTile effects can only be seen if you are really looking for them.

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