

## TECHNICAL BRIEF

BY: AZD ENGINEERING

### LCD Going Color

There is a tendency among companies using monochrome displays to upgrade their products to using inexpensive passive color (CSTN) LCDs. Physical and Electrical compatibility of LCDs is often desired in such cases. It should be noted that for those customers used to gray-scale monochrome displays, the transition to color LCDs might be easier than normally though on the programming side. In fact, since their operational principle is similar, gray-scale based and color displays sometimes use the same LCD controller IC

### Monochrome vs. Passive Color

Monochrome and color displays share many of the same chemical properties however are different in their own unique ways. In monochrome displays, they utilize two sheets of polarizing material with liquid crystal solution between them. An electric current passing through the liquid causes crystals to align so that light cannot pass through them. Each crystal, therefore, is like a shutter, either allowing light to pass through or blocking the light. For CSTN (Colour Super-Twist Neumatic) is a different kind of Liquid Crystal based Display technology that produces full-color images. In CSTN LCDs, color filters are applied to the inside of the front glass sheet. Three colors red, blue, green combined with a black matrix are used to produce quality colors. Therefore the main structural difference between monochrome and color displays is a color filter.



### New Releases

AZ Displays introduces two new LCD displays, our AGM3224C and AGM3224S series. Both displays contain the same CCFL backlights, mounting hole dimensions and almost exactly the same outline mechanical dimensions. Respectively these displays were designed-in together with the underlying difference that AGM3224C-NC-FTH is a black/white monochrome type and AGM3224S-NC-FBD is a passive color (CSTN) version. Customer can physically "drop-in" the color AGM3224S in place of the monochrome AGM3224C