Samsung Develops 7-inch WVGA, Single-Chip LCD for Mobile Devices

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Samsung Electronics announced today that it has developed the industry's first amorphous silicon (a-Si) seven-inch, single-chip TFT-LCD panel that reproduces colors in high resolution (WVGA-level, 800×480 pixels).

The seven-inch LCDs are mostly used in mobile devices including DMB (digital multimedia broadcasting), PMP (portable multimedia players) and CNS (car navigation systems), and normally require 4 to 7 drive ICs(integrated circuit). Also, on a conventional seven-inch LCD panel, the T-con (time controller that drives the screen), power platform and

other components typically are attached to a circuit board on the exterior of the LCD. The complexity of this integration point has been a major obstacle to slimming the package profile of mobile LCD devices.

The new single-chip design, with a contrast ratio of 400:1 and a brightness level of 450 nits, uses Samsung's unique ASG (amorphous silicon gate) technology. The ASG incorporates the Gate-driver IC function directly on the surface of the glass panel, while simultaneously integrating the T-con function within the Drive-IC. In the single-chip design, the surface area of the drive circuit and the number of components that it contains are each one-third less than that used in existing WVGA panel designs.

With the new single-chip LCD, Samsung can support the trend toward thinner and simpler mobile devices, while decreasing the overall circuit development and production burden for set builders by combining the functionality of multiple digital components.

Senior Vice President Hyung-Gul Kim, of the LCD Mobile Display Development Team says, “Samsung Electronics has successfully challenged the generally accepted idea that a high degree of circuit integration using amorphous silicon (a-Si) is prohibitively difficult. With our new seven-inch WVGA LCD prototype panel, dramatic improvements in LCD design are not only prudent, but also quite feasible using this highly reliable a-Si approach.”

The one-chip seven-inch WVGA panel will be first publicly displayed during the first week of June at the SID (Society for Information Display) Symposium, Seminar and Exhibition at the Moscone Convention Center in San Francisco.

Source: Samsung