



IST7750

(128 x 128-dot Graphics LCD Controller/Driver with Four-grayscale Functions)

Description

The IST7750, dot-matrix graphics LCD controller and driver LSI, displays 128-by-128-dot graphics for four monochrome grayscales. Since the IST7750 incorporates bit-operation functions and a 16-bit high-speed bus interface, it enables efficient data transfer and high-speed rewriting of data in the graphics RAM. The following functions allow the user to easily see a variety of information: a smooth scroll display function that fixed-displays a part of the graphics icons and perform vertical smooth scrolling of the remaining bit-map areas, a double-height display function, and a hardware-supported window cursor display function.

The IST7750 has various functions to reduce the power consumption of an LCD system such as low-voltage operation of 1.8 V min., a booster to generate maximum seven-times LCD drive voltage from the supplied voltage, and voltage-followers to decrease the direct current flow in the LCD drive bleeder-resistors. Combining these hardware functions with software functions, such as a partial display with low-duty drive and standby and sleep modes, allows precise power control. The IST7750 is suitable for any mid-sized or small portable battery-driven product requiring long-term driving capabilities, such as digital cellular phones supporting a WWW browser, bi-directional pagers, and small PDAs.

Features

- 128 × 128-dot graphics display LCD controller/driver for four monochrome grayscales
- Fixed display of graphics icons (pictograms)
- 16-/8-bit high-speed bus interface capability
- Clock synchronized serial interface capability
- Bit-operation functions for graphics processing incorporated:
 - Write-data mask function in bit units
 - Bit rotation function
 - Bit logic-operation function
- Low-power operation support:
 - $V_{CC} = 1.8$ to 3.6 V (low voltage)
 - $V_{LCD} = 5$ to 15.5 V (liquid crystal drive voltage)
 - Two-, five-, six-, or seven-times internal booster for liquid crystal drive voltage (programmable)