



Genesys Logic, Inc.

GL127

**High Speed USB 2.0
2-in-1 Scanner Controller**

Product Overview



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GENERAL DESCRIPTION

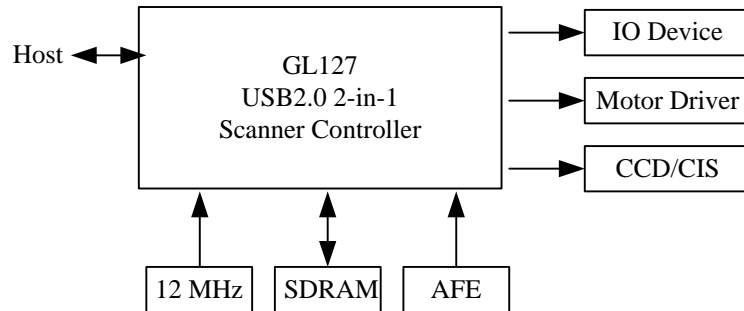
Genesys Logic's single-chip GL127 (GeneScan™ series) is a high speed, high performance, low cost and rich scalability controller for sheet-fed and flatbed scanner. It successfully integrates scanner function ASIC and USB 2.0 interface controller into one single-chip. With its high performance design architecture, GL127 is not only ready for supporting CIS or CCD image sensors (600, 1200, 2400, 3200, 3600, 4800 and 9600dpi resolution) that are used in flatbed, transparency or sheet-fed scanners, but is able to co-work with unipolar or bipolar stepping motors. Advanced features of GL127 include five motor acceleration/ deceleration curve tables for high speed motor moving.

FEATURES

- Highly integrated scanner controller chip (2-in-1; Scanner Controller and USB 2.0 Interface)
- USB 2.0 High Speed (480Mbit) compliant
- Designed for flatbed , transparency or sheet-fed scanners
- Supports fast ADF document scanner
- Embedded RISC CPU for USB protocol
- 12MHz low frequency clock input for better EMI
- Adjustable working clock of scanner controller for different usage (24M, 30M, 40M, 48M, 60M and 80MHz)
- Available sensor types: 600, 1200, 2400, 3200, 3600, 4800 and 9600 dpi color CIS or CCD
- Supports two scanning types: pixel-by-pixel (pixel rate), line-by-line (line rate)
- Support 24-bit color, 8-bit gray, 48-bit color, 16-bit gray and 1-bit line-art
- 16 bits white/dark shading and 16 bits Gamma correction
- Fine CDS sampling adjustment to avoid the digital noise influence (8.33ns adjustment)
- Digital average and hardware deletion for various resolutions
- Hardware deletion for various resolutions (from 9600~1dpi with 1dpi decrement)
- Supports 1M*16, 4M*16, 8M*16, 16M*16 and 32M*16 SDRAM
- Supports up to 1 G bits size SDRAM (implements two SDRAM)
- Supports 5 acceleration/deceleration motor tables for high speed motor moving and wall hitting protection
- Supports controllable bipolar motor in full, half, quarter and eighth steps moving
- Supports automatic V-reference control for motor driver ICs
- Programmable dummy lines to resolve start/stop (discontinuous) problem
- Watchdog protection for motor and ASIC
- Supports 32 GPIO pins and 7 GPO pins for I/O controls
- Supports LED blinking
- Supports back-scanning
- Supports multi-film scanning
- Support R, G and B LED controls for CIS scanning
- Support any motor driver IC through a phase table programmed by software
- PWM control during motor stopping to reduce power consumption when scanner Start/Stop occurs
- Supports 8-bit of Wolfson and ADI AFE interface
- Supports white LED with PWM control for light source
- Supports 1-ch and 3-ch CIS sensors
- Supports two CIS sensors for duplex scanning
- Supports external MCU with SPI interface
- Supports two-chips solution for fast duplex scanning

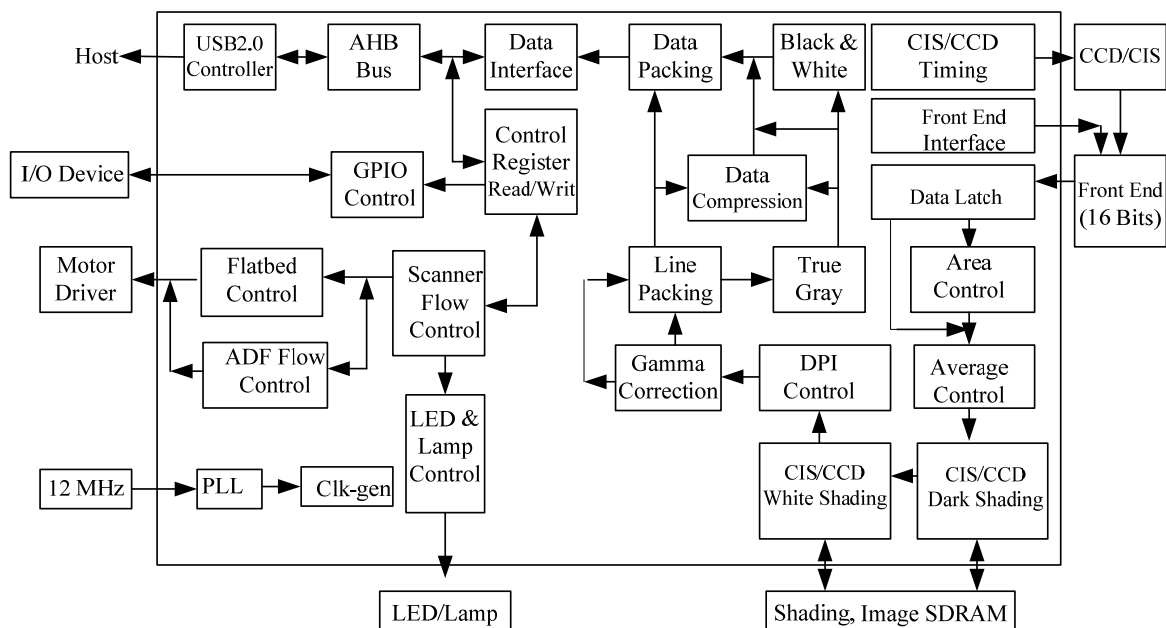
BLOCK DIAGRAM

USB 2.0 System Block Diagram



USB 2.0 System Block Diagram

Function Block Diagram



Function Block Diagram