

# SQ113A

Scanner Controller for USB2.0 Ver1.02

## SQ113A 48-Bit Scanner Processor

### 1. General Description

The SQ113A is a scanner processor of high scan speed & excellent image quality. The SQ113A is a complete document scanner system on SOC (Scanner Controller + USB2.0). The SQ113A provides all the functions (including CCD/CIS control, illumination control, pixel processing function, image data buffer, Motor PWM function, micro-stepping motor and USB2.0 interface) necessary to create a high performance color scanner. The SQ113A scans images in 48 bits color, and has output data formats for 48 bits and 24 bits.

### 2. Key Specifications

● Analog to Digital Converter Resolution	<b>16 Bit</b>
● Maximum Pixel Converter Rate	<b>11.25 MHz</b>
● 600 dpi minimum Scan Speed	<b>1.44 ms/line</b>
● 1200 dpi minimum Scan Speed	<b>2.88 ms/line</b>
● A4 Color preview time	<b>&lt; 5 seconds</b>
● A4 Color 150 dpi scan time	<b>&lt; 5 seconds</b>
● A4 Color 300 dpi scan time	<b>&lt; 7 seconds</b>
● A4 Color 600 dpi scan time	<b>&lt; 10 seconds</b>
● A4 Color 1200 dpi scan time	<b>&lt; 45 seconds</b>

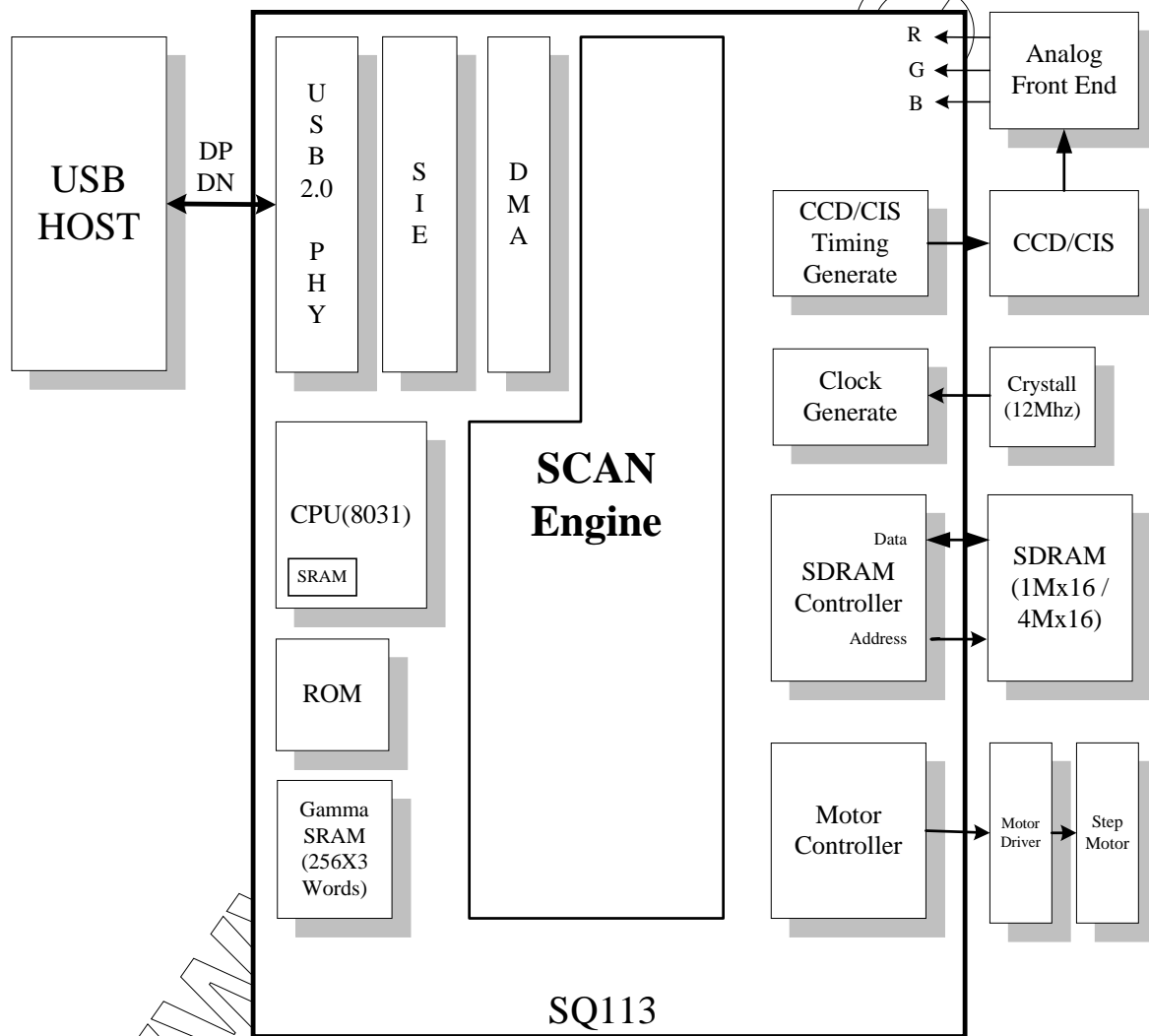
### 3. Features

- System on a chip. (Scanner Controller + USB2.0)
- Embedded USB2.0 interface.
- Support sheetbed, flatbed and transparency scanner.
- Internal 16 Bits Hardware white Shading, dark shading and 8/16 bits Gamma correction.
- 4800dpi, 2400dpi (NEC 8880, Toshiba 2950), 1200dpi (NEC 8872, Toshiba 2905) Support. (Horizontal & Vertical 1 DPI incremental resolution)
- Adjustable CCD exposure time. (1 ~ 1000 m sec)
- Adjustable CCD/CIS timing support. ( CCD: NEC, SONY & TOSHIBA; CIS: CANON, TOSHIBA, MITSUBISHI )
- Adjustable Chip working frequency.
- Two groups of motor driver and home sensor supported for flatbed and transparency scanner.
- Acceleration/Deceleration programming table for high speed Motor Moving
- Control two steps motors individually. (One or Two micro- stepping motor)
- Build-in motor PWM control
- Power on hardware Auto back supported.
- Support SDRAM timing. (1Mx16, 4Mx16 SDRAM)
- 12MHz operation frequency.
- Standby Mode Support. (Energy Save function) (USB suspend MODE)

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- Support 16 GPIO. (General Purpose I/O pin)
- Direct Hot Key I/O control for: SCAN, COPY, FAX & EMAIL etc.
- LED indicator with on/off or 1/4 Hz, 1/2 Hz flash mode provided.

**4. System Block Diagram**



SQ113 BLOCK DIAGRAM