Innovative, Cost-effective and Energy Efficient Solutions for Smart Display Applications

Bistable display is a non-traditional display technology. It is a display device illuminated by reflecting ambient light. The image is retained on the display even after the panel power supply has been removed. Bistable display offers paper-like readability, with features such as high contrast, a wide viewing angle, reflectiveness, and readability under sunlight. It is ultra thin and lightweight. Some bistable displays can even be twisted out of shape. Moreover, system power can be saved by the bistability characteristics, since the image remains on display even without power supply.

Solomon Systech develops the specialized **Bistable Display Driver Controllers** to make this novel display technology a reality. These highly integrated drivers consist of MCU interface for command and image data input, display RAM to buffer image data and high voltage driving outputs. To minimize system cost and space, the drivers have built-in DC/DC converter to supply high voltage to drive bistable display. These drivers can be applied to different bistable display technologies, such as Cholesteric LCD (ChLCD), Electrophoretic displays (EPD) and more.

In order to allow customers to verify the functions and customize for his own interest, we can support various development platforms for easy testing and development, and the display driver with MCU board and USB interface can drive and simulate customers' own design by PC programming.

Applications

Electronic Shelf Labels (ESL), IoT Devices, Health Care Devices, Smart Cards, Smart Watches/Meters, Electronic Signages for POP/POS, Mobile Displays, Indicators, etc.

Solomon Systech Limited welcomes enquiries on the development of custom IC using our advanced display technologies.

*All the images are for reference only.

SOLOMON SYSTECH

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Application Diagram
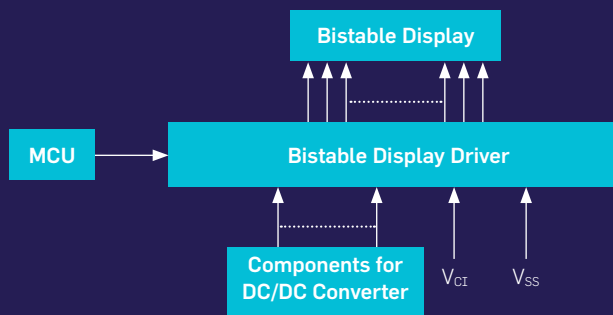
Selection Guide

Dot-Matrix Bistable Display

	SSD1633	SSD1681	SSD1675B	SSD1680/80A	SSD1619A	SSD1683	SPD1656	SSD1677	SSD1603
Panel Type	Active Matrix EPD	Active Matrix EPD	Active Matrix EPD	Active Matrix EPD	Active Matrix EPD	Active Matrix EPD	Active Matrix EPD	Active Matrix EPD	Dot Matrix ChLCD
Resolution (S x G)	160 x 160	200 x 200	160 x 296	176 x 296	400 x 300	400 x 300	640 x 480	960 x 680	132 x 64
Display Color	Mono black/white	Mono black/white, Mono 3-color	Mono black/white, Mono 3-color	Mono black/white, Mono 3-color	Mono black/white, Mono 3-color	Mono black/white, Mono 3-color	3-bit black/white/color	Mono black/white, Mono 3-color	Mono
Cascade	No	No	No	No	Yes	Yes	Yes	No	No
Supply Voltage	2.4 to 3.3V	2.2 to 3.7V	2.2 to 3.7V	2.2 to 3.7V	2.2 to 3.7V	2.2 to 3.7V	2.3 to 3.6V	2.2 to 3.3V	2.4V to 3.5V
Output Driving Waveform	Programmable	Programmable	Programmable	Programmable	Programmable	Programmable	Programmable	Programmable	Predefined
Waveform Storage	Internal OTP	Internal OTP	Internal OTP	Internal OTP	Internal OTP	Internal OTP	External Flash	Internal OTP	–
Built-in DC/DC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Display RAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
On-chip Oscillator	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Temperature Sensor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–
MCU Interface	SPI	SPI	SPI	SPI	SPI	SPI	SPI	SPI	SPI, I²C
IC Package	COG	COG	COG	COG	COG	COG	COG	COG	COG

Segment Bistable Display

	SSD1629	SSD1623	SSD1628	SSD1627
Resolution	32 segments	96 Segments	116 segments	132 segments
Display Color	Mono	Mono	Mono, Support red/yellow EPD	Mono, Support red/yellow EPD
Cascade	Yes	Yes	No	Yes
Supply Voltage	2.4V to 3.6V	2.4V to 3.6V	2.4V to 3.6V/3.6-5.5V	2.4V to 3.6V/3.6-5.5V
Output Driving Waveform	Programmable	Programmable	Programmable	Programmable
Built-in DC/DC	Yes	Yes	Yes*	Yes*
Display RAM	Yes	Yes	Yes	Yes
On-chip Oscillator	Yes	Yes	Yes	Yes
MCU Interface	SPI	SPI	SPI/I²C	SPI/I²C
IC Package	Bare Die/QFN	Bare Die/LGA	COG	Bare Die/COG/COF/ 64 segments LGA 132 segments LGA

* 15V Cap-lite charge pump: New Design charge pump for 15V driving with 2 external capacitors only in the application circuit.