

E- Ink Segmented Display Drivers

General Description

Dialog Semiconductor's DA85xx family of devices is a range of fully optimized segment driver ICs designed to meet the requirements of segmented electronic paper displays (EPDs).

The family includes a range of devices offering 24, 64, 96, and 192 segments, each in a single integrated package solution to a wide range of applications.

The 64, 96 and 192 segment devices can be operated in cascade mode to further expand system capabilities.

The DA85xx devices integrate all of the important functions required for successful functioning of an electronic paper segmented display, and only require two external components to create a full system solution.

Data is clocked into the device using a SPI serial interface before the integrated charge pumps generate the high voltages required to drive the display.

Once the display has been updated, the driver can be switched into standby or power down mode while still retaining the image on the display.

Using advanced packaging techniques, the DA85xx series integrates a high level of functionality into a single package, enabling a high density, low footprint design with minimal external components. The 64, 96 and 192 segment devices are also available in bare-die formats for smart cards, memory cards and other applications with restricted physical space.

Features

- Fully integrated segmented electronic paper display driver IC
- 24, 64, 96, Product Line up
- Low system component count requiring only two external capacitors
- Power down mode
- Extended battery life
- 64, and 192 segment devices with cascade capability to expand drive capabilities
- Ultra-thin LGA packages
- Bumped die package for chip-on-board or chip-on-flex
- Evaluation kits available for fast system development
- Connects directly to the battery, includes multimode battery charger(Single cell Lithium)



Functions

- Fully regulated high voltage outputs
- Any segment drive can be used as display common
- Easy to use SPI interface
- Single 1.8V-3.3V supply
- Ultra low power standby mode

Applications

- Smart cards
- Mobile phone
- Capacity meters (e.g. memory cards)
- Electronic shelf labels
- Watches and clocks

Product Line up				
Part No	Seg	Package	Output Drive	I/O Interface
DA8541	96	Bare die (Pad Pitch 100)	Tri or Dual	I2C and SPI
DA8527	24	36 Pin 4x4mm LGA	Dual	SPI
DA8521	64	80 Pin 5x5mm LGA	Dual	SPI
DA8523	192	208 Pin 7x12mm LGA	Dual	SPI
DA8531	64	80 Pin 5x5mm LGA	Dual	SPI

Over View

A range of evaluation kits have been developed to support the design of these segment display drivers. The evaluation kit offers a full hardware and software development environment to allow for fast system design and device evaluation



Hardware development

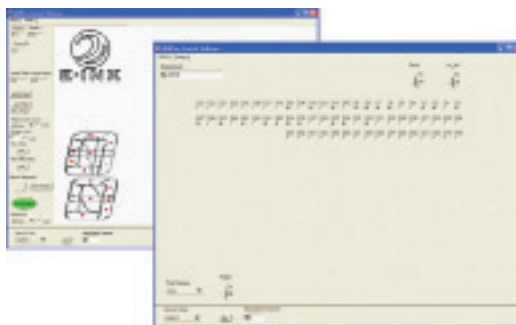
The evaluation kit can be controlled via a USB interface connected to a PC or directly to a microcontroller as part of a larger development environment.

A range of interfaces are also available to allow connection to different displays using both packaged and bare-die format solutions

Software development Kit

Also provided is a comprehensive Windows based evaluation and development software environment.

This allows a designer to import a bitmap display image to enable rapid development using a full graphical user interface. Segment drive capabilities can be defined for the display under development along with the sequencing required to fully develop and evaluate the final system. Control of various timing parameters can be accessed to optimize the design for specific applications in different working environments.



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