

Product Brief

TC358763 Serializer Display Bridge

Highlights

- Serializer display bridge for connectivity of MIPI® DSI panels to the Baseband or Application Processor using legacy parallel LCD interfaces.
- Solutions are based on the latest versions of industry standard MIPI DSI 1.01 interface to ensure high speed data rates of up to 500 Mbps per lane.
- Legacy interfaces such as MIPI DPI and MIPI DBI are supported as Host interfaces.
- Applicable to a range of mobile product platforms such as smartphones, netbooks, smartbooks, MID's and PND's.

Description

The Toshiba TC358763XBG serializer display bridge is optimized for mobile handsets using a high-resolution display panel with MIPI® Display Serial Interface (DSI) connectivity. As mobile handsets are integrating higher resolutions, wider color depth, and larger sized displays, panels with high-speed serial interface protocols are becoming a more suitable solution.

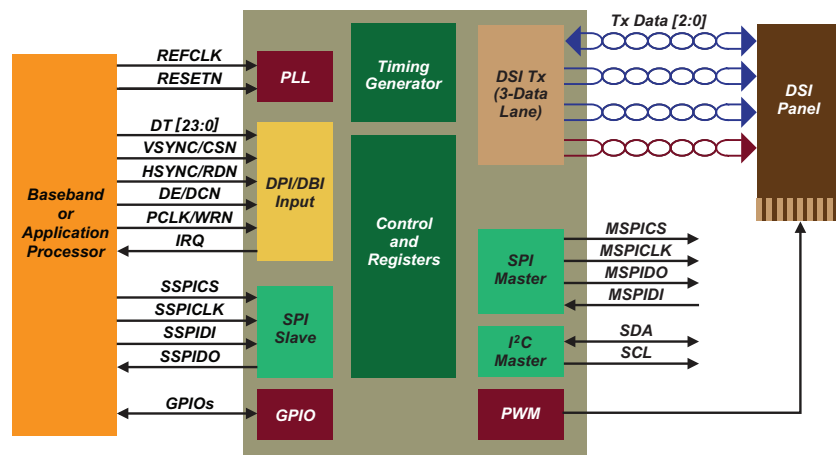
The TC358763XBG bridge supports legacy display interface protocols such as MIPI Display Pixel Interface (DPI) and MIPI Display Bus Interface (DBI) as Host interfaces; and serializes the data to enable connectivity to panel with MIPI DSI protocol. The bridge supports MIPI DSI connectivity on the panel side with up to 500 Mbps per data lane times three data lanes.

The TC358763XBG is a 72-pin device in a small 4.5 mm x 4.5 mm body, 1.0 mm height package with 0.4 mm ball pitch suitable for mobile applications.

Features

- LCD module interface
 - MIPI DSI-TX Data 3-lane, CLK 1-lane with data rates up to 500 Mbps/lane
 - Support for XGA size LCD panel when MIPI DPI is selected as Host interface
 - Output format: RGB888, RGB666 and RGB565
- Host interface
 - MIPI DPI 24-bit bus interface
 - MIPI DBI Type-B 16-bit bus interface
 - 18-bit bus RGB 666 format supported. When this format is selected, the valid command and data bus width is 16-bit

System Block Diagram of TC358763XBG



The TC358763XBG supports data transfer from input port (Host interface) to output port (Display Interface) as shown in the following use case scenarios:

- Use Case 1: MIPI DPI to MIPI DSI
 Use Case 2: MIPI DBI to MIPI DSI

Product Brief

Regional Sales Offices

NORTHWEST

San Jose, CA

TEL: (408) 526-2400

FAX: (408) 526-2410

SOUTHWEST

Irvine, CA

TEL: (949) 623-2900

FAX: (949) 474-1330

El Paso, TX

TEL: 915-771-8156

FAX: 915-771-8178

MIDWEST

Wixom, MI

TEL: (248) 347-2607

FAX: (248) 347-2602

Buffalo Grove, IL

TEL: (847) 484-2400

FAX: (847) 541-7287

NORTHEAST

Marlboro, MA

TEL: (508) 481-0034

FAX: (508) 481-8828

Parsippany, NJ

TEL: (973) 541-4715

FAX: (973) 541-4716

SOUTHEAST

Duluth, GA

TEL: (770) 931-3363

FAX: (770) 931-7602

- Serial input interface
 - 3 or 4-wire 8-bit SPI synchronous transfer
 - 3-wire 9-bit SSI synchronous transfer
- Peripheral control ports
 - SPI or SSI serial I/F ports
 - Single I²C serial I/F port
 - Up to 13 General Purpose I/O ports
 - One PWM signal for LED intensity control
- PLL: external reference clock needed to generate internal clock
- Power supply
 - Core : 1.2V $\pm$ 0.1V
 - DSI I/O : 1.2 $\pm$ 0.1V
 - I/O : 1.8 $\pm$ 0.1V to 3.0 $\pm$ 0.3V
- Package
 - P-VFBGA 72-pin 4.5mm x 4.5mm, 1.0mm height, 0.4mm ball pitch

Toshiba Mobile Initiative

This chipset is a member of the Toshiba mobile initiative product family. The Toshiba Mobile Strategic Initiative is a comprehensive program designed to offer its U.S.-based mobile handset/mobile consumer device customers a product portfolio that aims to provide faster time-to-market and helps them stay competitive.

As part of this initiative, Toshiba provides local application and design-in support and access to a host of analog peripheral ICs, including the Toshiba CMOS image sensor family, display controllers/drivers, I/O expander, bridge ICs, memory products and LCD modules.

The expanded portfolio also includes support tools, reference designs and evaluation boards.

www.Toshiba.com/taec

- The information contained herein is subject to change without notice.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of TOSHIBA or others.
- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situation in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc.
- The Toshiba products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These Toshiba products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc. Unintended usage of Toshiba products listed in this document shall be made at the customer's own risk.
- The products described in this document may include products subject to foreign exchange and foreign trade laws.
- The products contained herein may also be controlled under the U.S. Export Administration Regulations and/or subject to the approval of the U.S. Department of Commerce or U.S. Department of State prior to export. Any export or re-export, directly or indirectly in contravention of any of the applicable export laws and regulations, is hereby prohibited.

MIPI is a licensed trademark of MIPI Alliance, Inc. in the U.S. and other jurisdictions

TOSHIBA
Leading Innovation >>>

TC358763 Serializer Display Bridge

All trademarks are of their respective manufacturer and may be registered in certain jurisdictions.

© Copyright 5/2010 TAEC