DS28CM00EVKIT
Evaluation Board/Evaluation System

www.maxim-ic.com

GENERAL DESCRIPTION

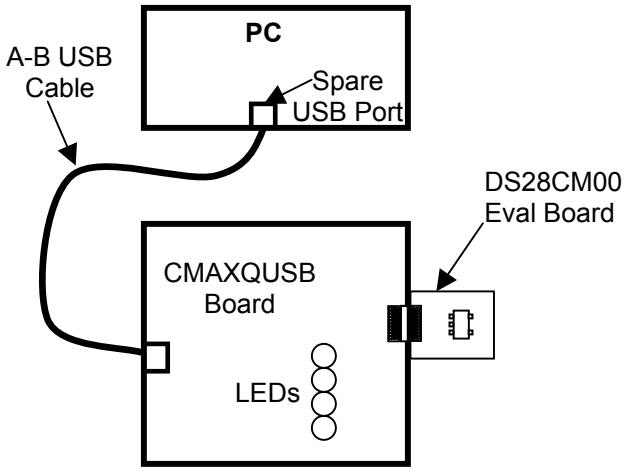
The DS28CM00 evaluation system (EV system) consists of a DS28CM00 evaluation board (EV board) and a Maxim CMAXQUSB command module. The DS28CM00 is a low-cost, electronic registration number providing an absolutely unique identity that can be determined with the industry standard I²C* and SMBus™ interface. The registration number is a factory-lasered, 64-bit ROM that includes a unique 48-bit serial number, an 8-bit CRC, and an 8-bit family code. The evaluation software runs under Windows® XP or Windows 2000, providing a handy user interface to exercise the features of the DS28CM00.

DS28CM00EVKIT is the order number for a complete EV system for comprehensive evaluation of the DS28CM00 using a PC. Evaluation software is also available for the kit and can be downloaded from the following web page: http://www.maxim-ic.com/tools/evkit/.

EQUIPMENT NEEDED

1. Windows PC running XP or 2000 with Microsoft .NET Framework Version 1.1 installed.
2. Spare USB port on the PC.

TYPICAL SETUP (NOT TO SCALE)



FEATURES

- Proven PC Board Layout
- Complete Evaluation System
- Convenient On-Board Test Points
- Fully Assembled and Tested
- Downloadable Evaluation Software

ORDERING INFORMATION

The DS28CM00 EV software is designed for use with the complete EV system DS28CM00EVKIT (includes CMAXQUSB module together with DS28CM00 eval board).

PART	TEMP RANGE	INTERFACE TYPE
DS28CM00EVKIT	0 to +70°C	Windows software, USB

PARTS LIST

PART	QTY	DESCRIPTION
DS28CM00 EV board	1	Daughtercard containing DS28CM00 chip to evaluate
CMAXQUSB	1	Command module with USB cable

ON-LINE RESOURCES

1. DS28CM00 datasheet: http://www.maxim-ic.com/DS28CM00
2. CMAXQUSB User's Guide: http://www.maxim-ic.com/quick_view2.cfm/qv_pk/5034

SMBus is a trademark of Intel Corp.
Windows is a registered trademark of Microsoft Corp.

I^2C is a trademark of Philips Corp. Purchase of I^2C components from Maxim Integrated Products, Inc., or one of its sublicensed Associated Companies, conveys a license under the Philips I^2C Patent Rights to use these components in an I^2C system, provided that the system conforms to the I^2C Standard Specification as defined by Philips.

Note: *Some revisions of this device may incorporate deviations from published specifications known as errata. Multiple revisions of any device may be simultaneously available through various sales channels. For information about device errata, click here: www.maxim-ic.com/errata.*

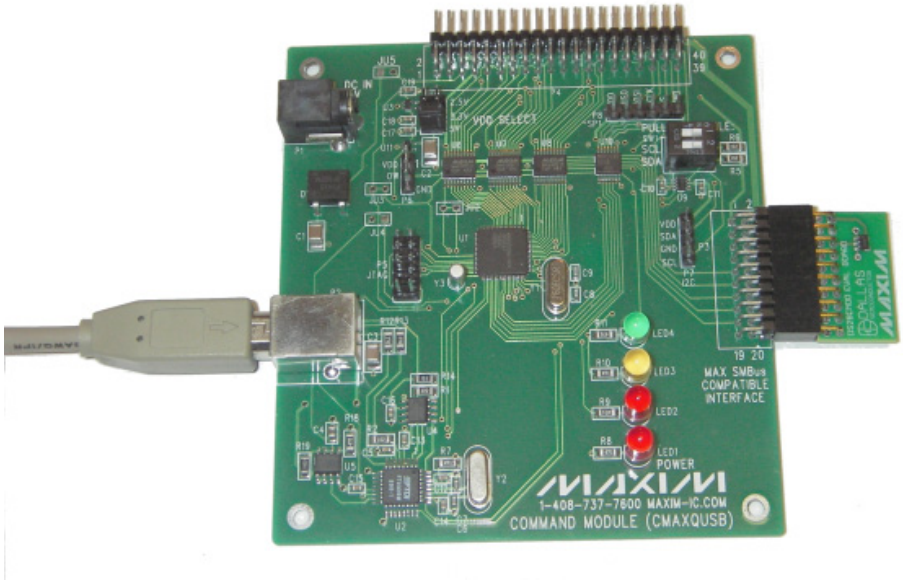
DS28CM00 EV BOARD

The DS28CM00 EV board provides a proven PC board layout to facilitate evaluation of the DS28CM00. It must be interfaced to appropriate timing signals for proper operation. The DS28CM00 EV board is a simple circuit with the DS28CM00 located on top of the board and a right-angle 20-pin female connector located on the left-most side of the board. This female 20-pin connector plugs into the CMAXQUSB command module and connects power (VC), ground return (GN), data (SD), and clock (SC) pins of the DS28CM00. See the evaluation board schematic below.

DS28CM00 EV SYSTEM

The DS28CM00 evaluation system is defined to be the DS28CM00 EV board coupled with the CMAXQUSB command module and the evaluation software. The DS28CM00 EV system board connects to the appropriately labeled pins on the CMAXQUSB command module (see location P3 labeled "MAX SMBus COMPATIBLE INTERFACE"). See Figure 1. The evaluation software runs under Windows XP/2000, interfacing to the EV system board through the computer's USB port. See the Quick Start section for setup and operating instructions.

Figure 1. CMAXQUSB with DS28CM00 EV board

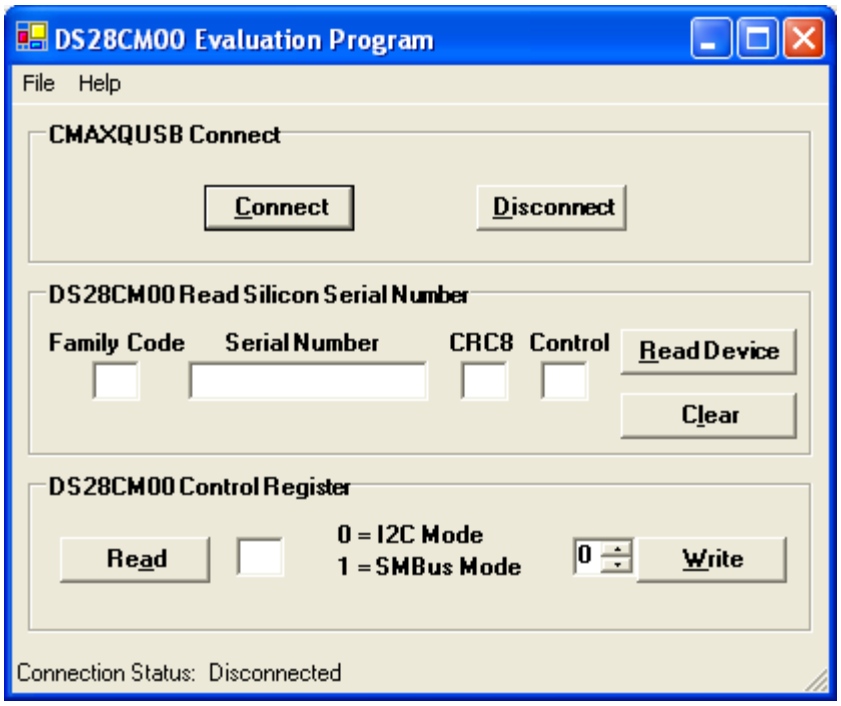


QUICK START

1. Before beginning, make sure the following equipment is available:
   - DS28CM00EVKIT (contains DS28CM00 EV board and CMAXQUSB module)
   - Windows XP/2000 computer with a spare USB port
2. Do the following before connecting to the PC:
   - Select 5V logic by setting the CMAXQUSB VDD SELECT jumper.
   - Connect the eval board to the CMAXQUSB board with the 20-pin connector at location P3 (the I^2C/SMBus pins).
3. Download the evaluation software from Maxim's eval kit software page mentioned above or from the eval kit's quickview: http://www.maxim-ic.com/DS28CM00EVKIT). The evaluation software will be provided as a *.zip archive file. Unzip the archive's contents into an empty or newly-created directory.
4. Connect the USB cable between the CMAXQUSB and the computer. When you plug in the CMAXQUSB board for the first time, the windows plug-and-play system detects the new hardware and automatically runs the Add New Hardware Wizard. Be sure to specify the search location for the device driver, which will be the directory where the evaluation software files were unzipped.
5. During device driver installation, Windows displays a warning message indicating that the device driver Dallas Semiconductor Maxim uses does not contain a digital signature. This is not an error condition. It is safe to proceed with the installation.
6. The Microsoft .NET Framework Version 1.1 is required for the program to run. If it is not installed, please see the following website for download and installation instructions: http://msdn.microsoft.com/netframework/downloads/framework1_1/
7. Start the EV Kit software by double-clicking the file, *DS28CM00_Evaluation_Program.exe,* in the file folder containing the unzipped eval software files.
8. If any problems occur during device driver installation, refer to *Application Note 3601: Troubleshooting Windows Plug-and-Play and USB for Maxim Evaluation Kits* for more details. It is located here: http://www.maxim-ic.com/appnotes.cfm/appnote_number/3601.

DETAILED DESCRIPTION OF SOFTWARE

Main Software Window



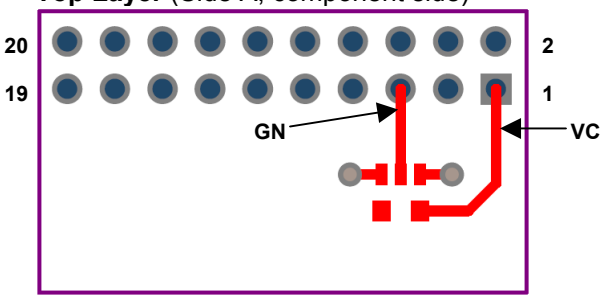
The software window is a single screen with three different sections enabling the customer to perform three different activities.

1. In the “CMAXQUSB Connect” section of the program, the customer has the ability to connect to the CMAXQUSB evaluation board by clicking on the “Connect” button. A statusbar message at the bottom of the screen gives the connection status. If connected, the statusbar text displays an appropriate message, along with the firmware version string read from the CMAXQUSB board. To disconnect from the board, the customer clicks the button labeled “Disconnect”. An appropriate disconnect message then appears in the statusbar text. If the program is not connected to the CMAXQUSB board, all of the read and write buttons on the software window, when clicked, will respond with a message indicating that the board should first be connected before attempting to read or write to the DS28CM00.
2. Under the “DS28CM00 Read Silicon Serial Number” section, the customer has the ability to read the part’s silicon serial number. This includes the family code of the part, the serial number, the CRC8 (for error checking), and the control register (which determines whether the part provides SMBus timeouts or keeps from timing out according to I^2C specifications). By clicking on the “Read Device” button the customer initiates a simple read of the DS28CM00’s silicon serial number. The program will return the silicon serial number broken down by family code, serial number, CRC8, and the control register. Please note that the customer will NOT be able to read the device without first connecting to the CMAXQUSB board (see number 1 above).
3. The “DS28CM00 Control Register” section provides the ability to write to or read the control register (which can be either “0” or “1”). When the control register is set to 1 (power-on default), the device is in SMBus mode, which enables the bus timeout function. Setting the control register to 0 puts the device in I²C mode, where the timeout function is disabled. Again, note that the device cannot be written to nor read without first connecting to the CMAXQUSB board (see number 1 above).

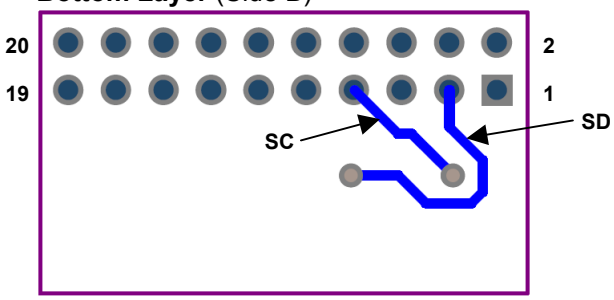
The application also has “File” and “Help” menu options. The “File” option only allows a user to exit the program, and the “Help” option only allows a user to bring up the “About box” containing versioning data for the program.

EVALUATION BOARD LAYOUT

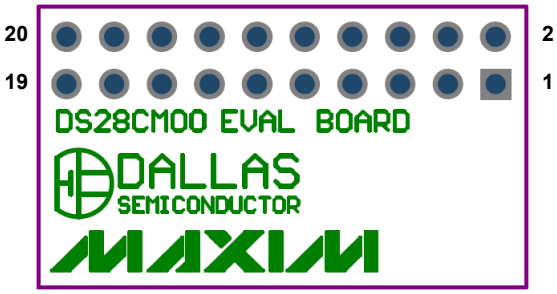
Top Layer (Side A, component side)



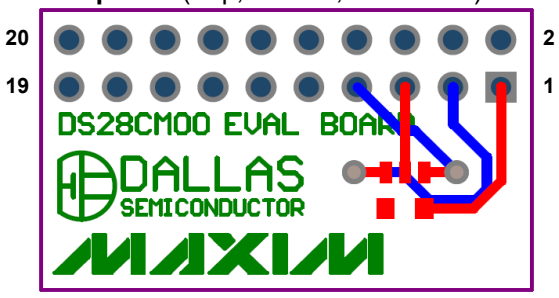
Bottom Layer (Side B)



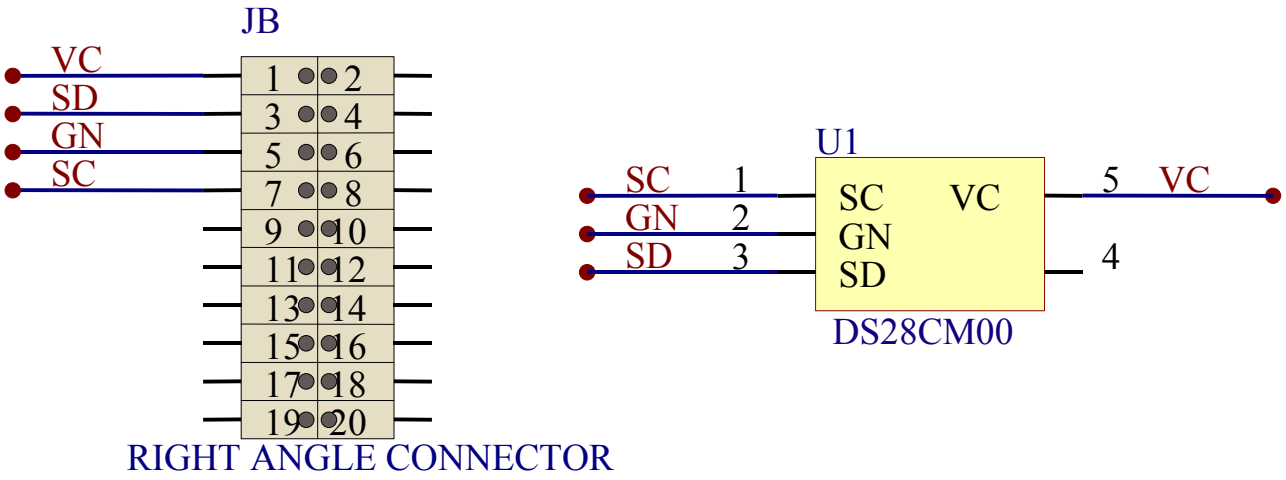
Silkscreen



Composite (Top, Bottom, Silkscreen)



EVALUATION BOARD SCHEMATIC



REVISION HISTORY

- Revision A: Original evaluation kit titled “DS28CM00EVKIT Evaluation Board/Evaluation System”: 7/3/2008