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 I^{2}C 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 operating system (OS), providing a handy user interface to exercise the features of the DS28CM00.

Order the DS28CM00EVKIT for the complete EV system to evaluate the DS28CM00 using a PC. Evaluation software for the EV system is also available on our website at: **www.maximintegrated.com/EVkitsoftware**.

Features

♦ **Proven PCB Layout**

♦ **Complete Evaluation System**

♦ **Convenient On-Board Test Points**

♦ **Fully Assembled and Tested**

♦ **Downloadable Evaluation Software**

Ordering Information

PART	TYPE
DS28CM00EVKIT	EV Kit

Contents List

QTY	DESCRIPTION
1	DS28CM00 EV Board: Daughtercard containing Maxim DS28CM00
1	CMAXQUSB: Command module with USB cable

Component List

DESIGNATION	QTY	DESCRIPTION
J1	1	100-mil centers, 20-pin female right-angle header
U1	1	I^{2}C/SMBus silicon serial number (5 SOT23) Maxim DS28CM00R-A00+T
—	1	PCB: DS28CM00 EVAL BOARD

+Denotes a lead(Pb)-free/RoHS-compliant package.
T = Tape and reel.

SMBus is a trademark of Intel Corp.

Windows XP and Windows are registered trademarks of Microsoft Corp.

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim's website at www.maximintegrated.com.

DS28CM00 Evaluation System
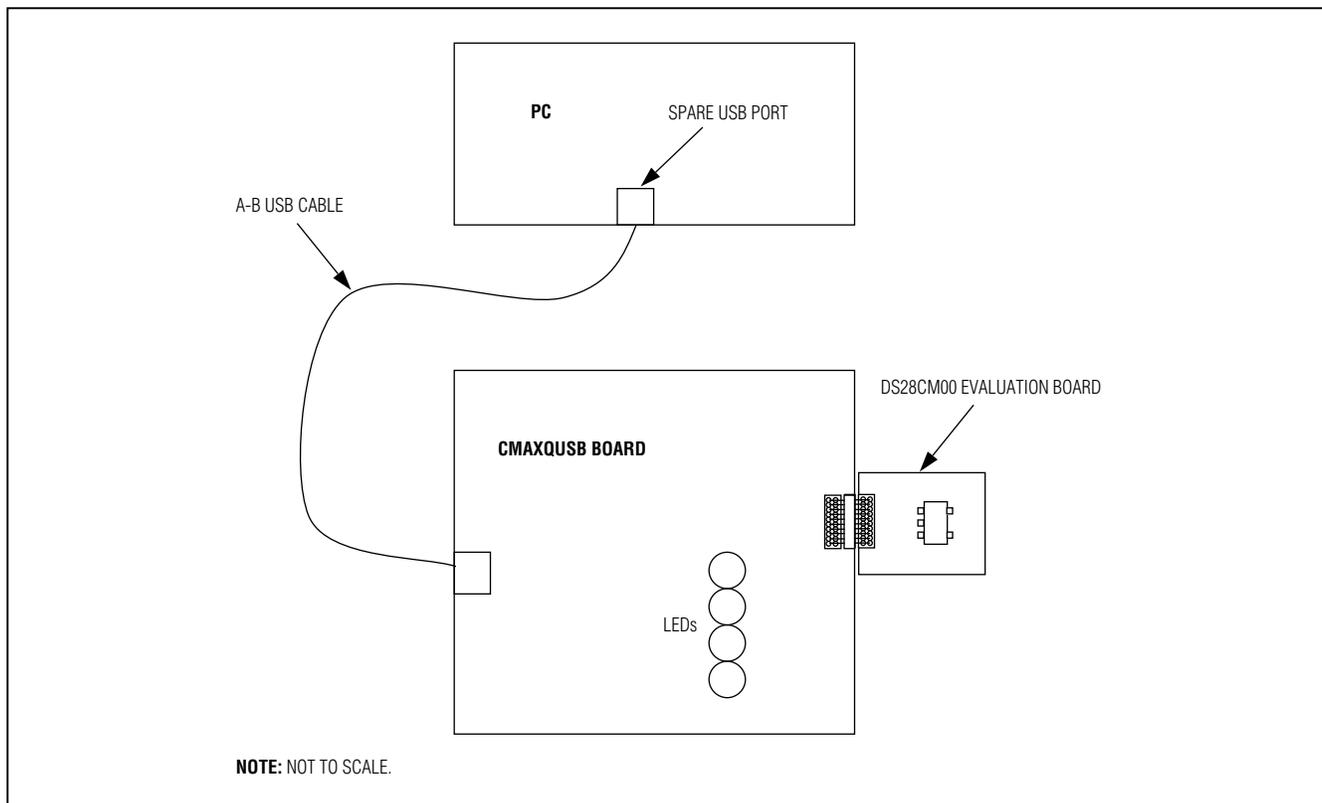
Evaluates: DS28CM00

Figure 1. Typical Setup

Quick Start

Note: In the following sections, software-related items are identified by bolding. Text in **bold** refers to items directly from the EV kit software. Text in **bold and underlined** refers to items from the Windows operating system.

Required Equipment

- PC running Windows XP or 2000 OS with Microsoft .NET Framework Version 1.1 installed

- Spare USB port on the PC

Evaluation Board

The DS28CM00 EV board provides a proven PCB 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 leftmost side of the board. This female 20-pin connector plugs into the CMAXQUSB command module and connects the power (VC), ground return (GN), data (SD), and

clock (SC) pins of the DS28CM00. See the *DS28CM00 Evaluation Board Schematic*.

Evaluation System

The DS28CM00 EV system is defined to be the DS28CM00 EV board coupled with the CMAXQUSB command module and the evaluation software. The DS28CM00 EV board connects to the appropriately labeled pins on the CMAXQUSB command module. See location P3 labeled "MAX SMBus COMPATIBLE INTERFACE" in Figure 2. The evaluation software runs under the Windows XP/2000 OS, interfacing to the EV board through the computer's USB port. See the *Quick-Start Sequence* section for setup and operating instructions.

Quick-Start Sequence

1) Before beginning, make sure the following equipment is available:

- DS28CM00 EV system (contains DS28CM00 EV board and CMAXQUSB module)
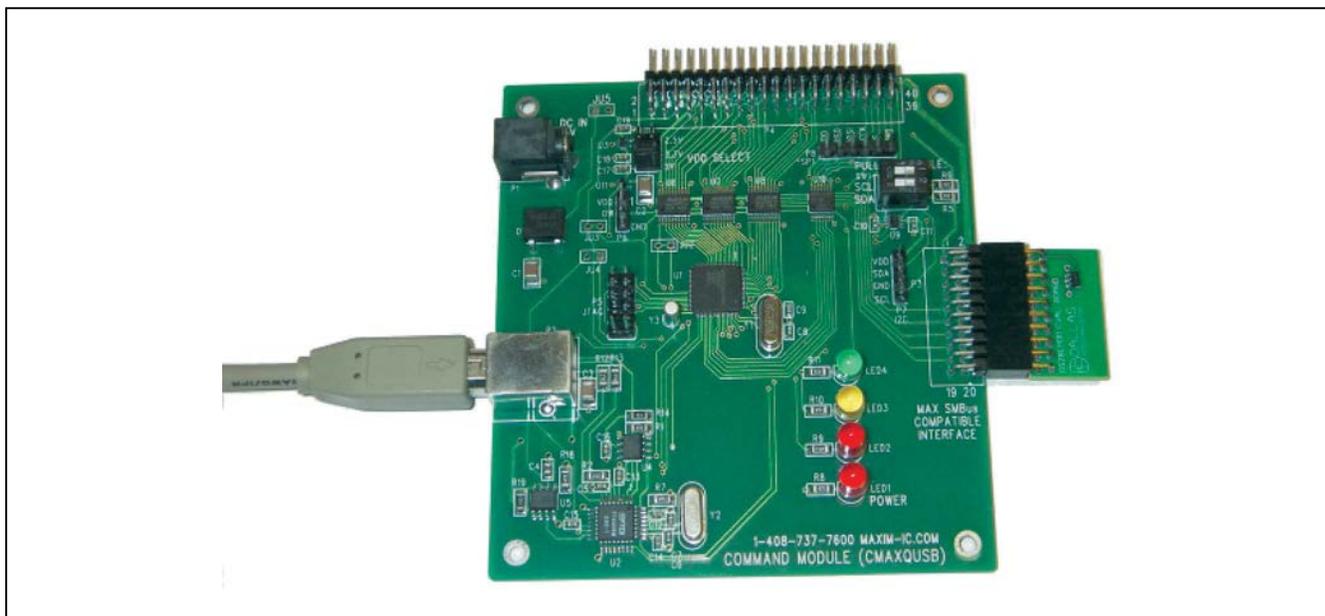
- PC running Windows XP/2000 OS with a spare USB port

Figure 2. CMAXQUSB with DS28CM00 Evaluation Board

2) Do the following before connecting to the PC:

   a. Select +5V logic by setting the CMAXQUSB VDD SELECT jumper.

   b. Connect the EV board to the CMAXQUSB board with the 20-pin connector at location P3 (the I2C/ SMBus pins).

3) Download the evaluation software from Maxim's EV kit software page or from the EV system's QuickView: **www.maximintegrated.com/DS28CM00EVKIT**. The evaluation software is 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 is the directory where the evaluation software files were unzipped.

5) During device driver installation, Windows displays a warning message indicating that the device driver 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, refer to the following website for download and installation instructions: http://msdn.microsoft.com/netframework/downloads/framework1_1/.

7) Start the EV system software by double-clicking **DS28CM00_Evaluation_Program.exe** in the file folder containing the unzipped evaluation 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.

Detailed Description of Software

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, the customer can connect to the CMAXQUSB EV board by clicking on the **Connect** button. A status bar message at the bottom of the screen gives the connection status. If connected, the status bar text displays an appropriate message, along with the firmware version string read from the CMAXQUSB board.

DS28CM00 Evaluation System

Evaluates: DS28CM00

To disconnect from the board, choose the **Disconnect** button. An appropriate disconnect message then appears in the status bar text. If the program is not connected to the CMAXQUSB board, all the **read** and **write** buttons on the software window, when clicked, respond with a message indicating that the board should first be connected before attempting to read or write to the DS28CM00.

2) The part's silicon serial number is shown under the **DS28CM00 Read Silicon Serial Number** section. This includes the family code of the part, the serial number, the CRC-8 (for error checking), and the control register (which determines whether the part provides SMBus timeouts or keeps from timing out according to I^{2}C specifications). Clicking the **Read Device** button initiates a simple read of the DS28CM00's silicon serial number. The program returns the silicon serial number broken down by family code, serial number, CRC-8, and the control register. Note that the device cannot be read without first connecting to the CMAXQUSB board (see step 1).

3) In the **DS28CM00 Control Register** section, the customer can 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 I^{2}C 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 step 1).

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.

_____Online Resources

DS28CM00 IC Data Sheet: **www.maximintegrated.com/ DS28CM00**

CMAXQUSB User's Guide: **www.maximintegrated.com/ CMAXQUSB**
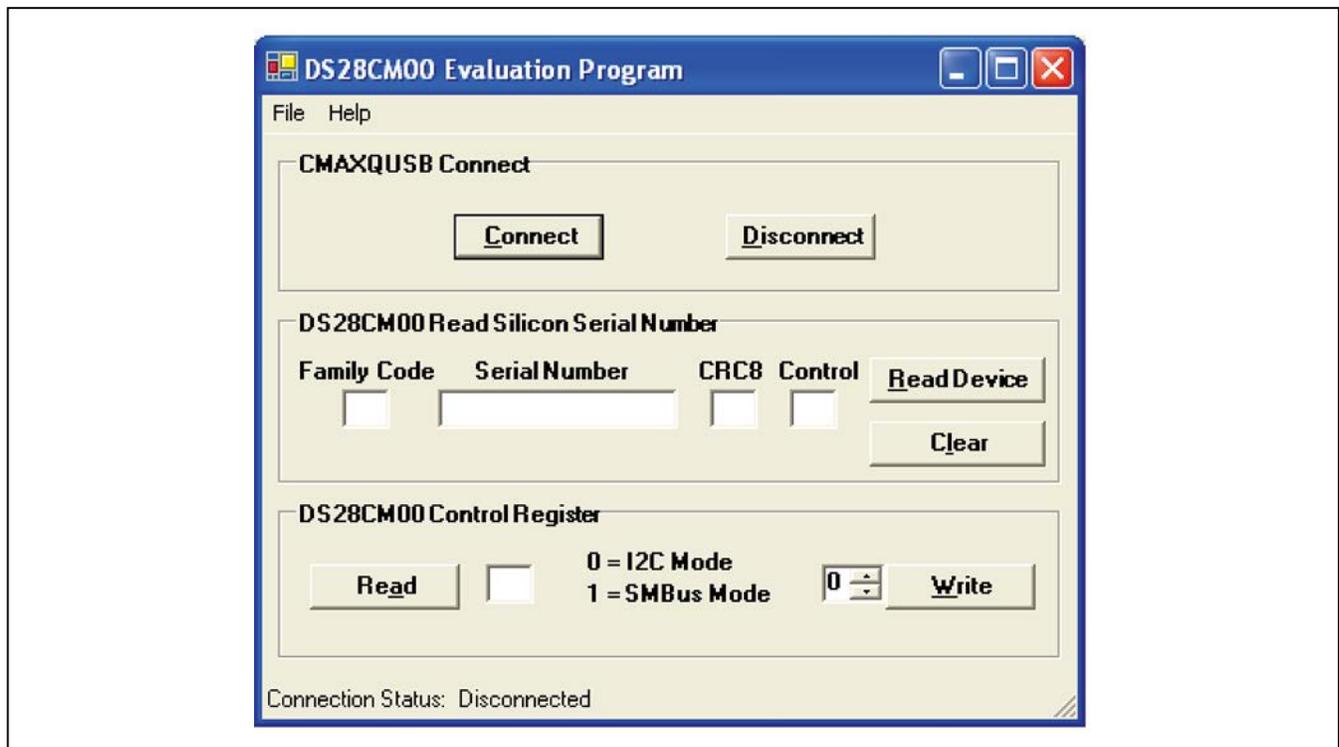
Figure 3. Main Software Window

DS28CM00 Evaluation Board Layout

TOP LAYER (SIDE A, COMPONENT SIDE)

BOTTOM LAYER (SIDE B)

SILKSCREEN

COMPOSITE (TOP, BOTTOM, SILKSCREEN)

DS28CM00 Evaluation Board Schematic

RIGHT-ANGLE CONNECTOR
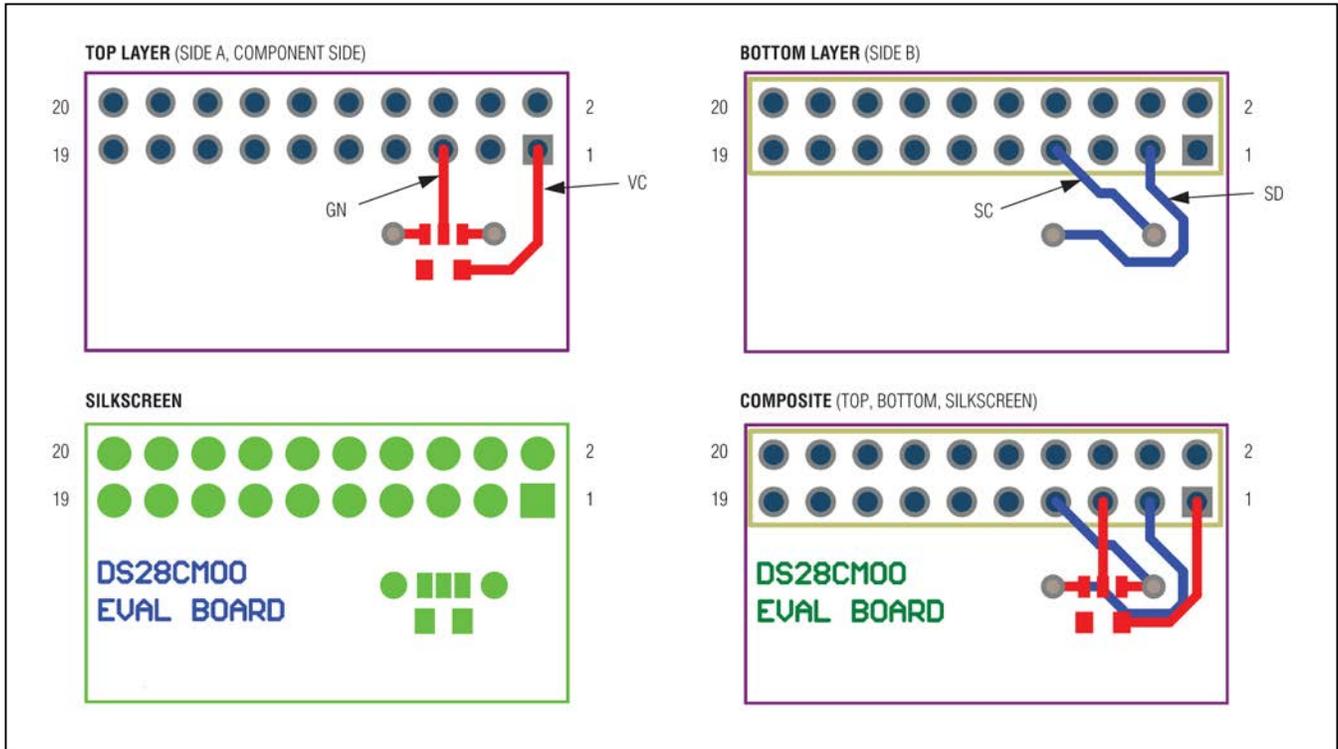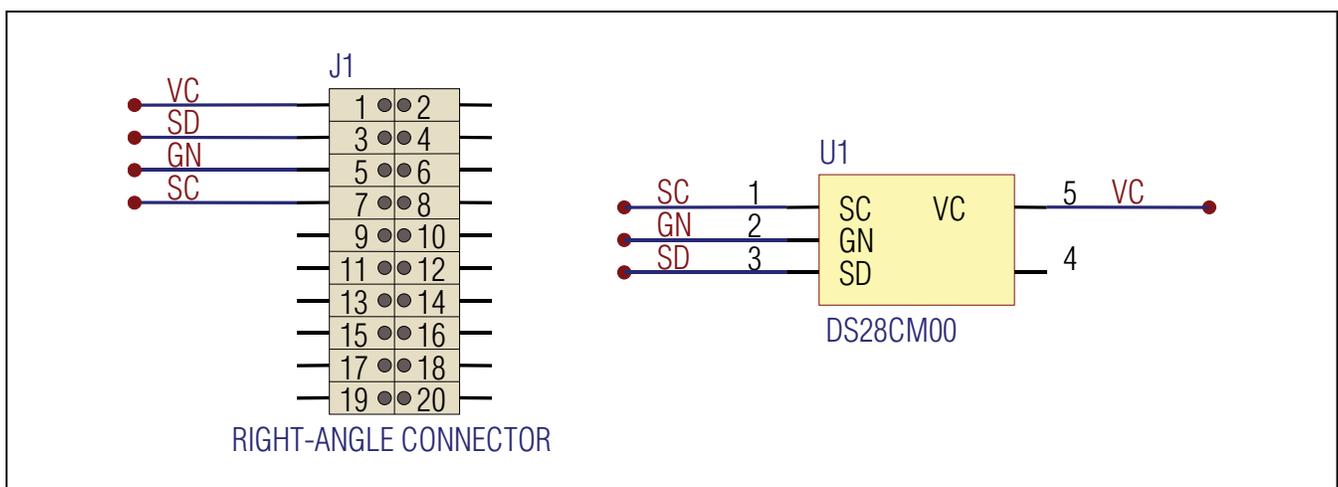
DS28CM00

DS28CM00 Evaluation System

Evaluates: DS28CM00

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
1	10/09	Created newer template-style data sheet.	All

Maxim Integrated 160 Rio Robles, San Jose, CA 95134 USA 1-408-601-1000