



Crystalfontz America, Incorporated



Crystalfontz Model Number	CFA10006 Demonstration Board Kits
Hardware Version	Revision 1.1, August 2008
Firmware Version	Revision 1.0, August 2008
Data Sheet Version	Revision 1.0, August 2008
Product Pages	www.crystalfontz.com/product/CFA10006.html

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REVISION HISTORY

CFA10006 DEMONSTATION BOARD HARDWARE	
2008/08/02	Current demonstration board hardware version: v1.1 New demonstration board.

CFA10006 DEMONSTRATION BOARD FIRMWARE	
2008/08/02	Current firmware version (series): v1.0 Initial release.

CFA10006 DEMONSTRATION BOARD KITS USER GUIDE	
2008/08/02	Current Data Sheet version: v1.0 New Data Sheet.

The Fine Print

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QUICK START

The CFA10006 demonstration board is shipped with the display of your choice mounted and tested. Simply plug the power supply (included) into an AC outlet. The CFA10006 will initialize the display, turn on the backlight (if the module has a backlight), and run its demonstration program.

INTRODUCTION

The CFA10006 Demonstration Board Kits have everything you need to easily demonstrate and experiment with a CrystalFontz LCD module. The CFA10006 Demonstration Board is compatible with CrystalFontz graphic LCD modules that use a Samsung S6B0107 / S6B0108 controller (formerly KS0107 / KS0108). Samsung's S6B0107 64 CH Common Driver for Dot Matrix LCD and S6B0108 64 CH Common Driver for Dot Matrix LCD specifications are included in a zipped folder that can be downloaded here: www.crystalfontz.com/product/CFA10006.html.

The CFA10006 Demonstration Board can be ordered with the following modules:

CFA10006 DEMONSTRATION KIT	MOUNTED WITH THIS LCD MODULE
DMOG12864ATMI	CFAG12864ATMIVN
DMOG12864AYYHV	CFAG12864AYYHVN
DMOG12864ACFHT	CFAG12864ACFHTA
DMOG12864BTFH	CFAG12864BTFHV
DMOG12864BTMI	CFAG12864BTMIV
DMOG12864BWGHN	CFAG12864BWGHN
DMOG12864BWGH	CFAG12864BWGHV
DMOG12864BYYHN	CFAG12864BYYHN
DMOG12864BYYH	CFAG12864BYYHV
DMOG12864CTMI	CFAG12864CTMITN
DMOG12864CYYH	CFAG12864CYYHTN
DMOG12864EWGH	CFAG12864EWGHTN
DMOG12864ISTI	CFAG12864ISTITN
DMOG12864ITMI	CFAG12864ITMITN
DMOG12864IYYH	CFAG12864IYYHTN



CFA10006 DEMONSTRATION KIT	MOUNTED WITH THIS LCD MODULE
DMOG12864KSTI	CFAG12864KSTITN
DMOG12864KTMI	CFAG12864KTMITN
DMOG12864KYYH	CFAG12864KYYHTN
DMOG12864MTMI	CFAG12864MTMITN
DMOG12864MYXH	CFAG12864MYXHTN
DMOG19264ASTIT	CFAG19264ASTITZ
DMOG19264ATMIT	CFAG19264ATMITZ
DMOG19264AYXH	CFAG19264AYXHTZ
DMOG19264DTFH	CFAG19264DTFHVZ
DMOG19264DTMI	CFAG19264DTMIVZ
DMOG19264DYXH	CFAG19264DYXHVZ

The CFA10006 Demonstration Board Kit may also be used as a reference for your designs that use a CrystalFontz LCD module listed in the table above.

DEMONSTRATION BOARD KIT CONTENTS

- CFA10006 Demonstration Board
- Mounted LCD graphics module of your choice. (Selected at time of ordering. See list of choices in table above.)
- Power adapter (110 VAC).
- MicroSD memory card, loaded with BASIC demonstration program and bitmap images.
- USB reader for the microSD memory card.

In addition to the kit contents, a zipped folder of hardware design and program files is available at www.crystalfontz.com/product/CFA10006.html. (Free download.)

HOW TO MAKE A CUSTOM DEMONSTRATION

The CFA10006 is programmed with firmware that will read a BASIC program file from the microSD memory card. The BASIC program can read bitmap image files from the microSD memory card and display them on the LCD module. The BASIC program can also read the four buttons, change the backlight settings, and change the contrast settings. By using the USB reader, a text editor, and a graphic conversion utility (which we supply), you can customize the demonstration to include your own bitmap images. The large capacity of the microSD card allows you to create complex demonstrations.

For the most recent version of the graphic conversion utility, sample scripts, and sample images for customizing the

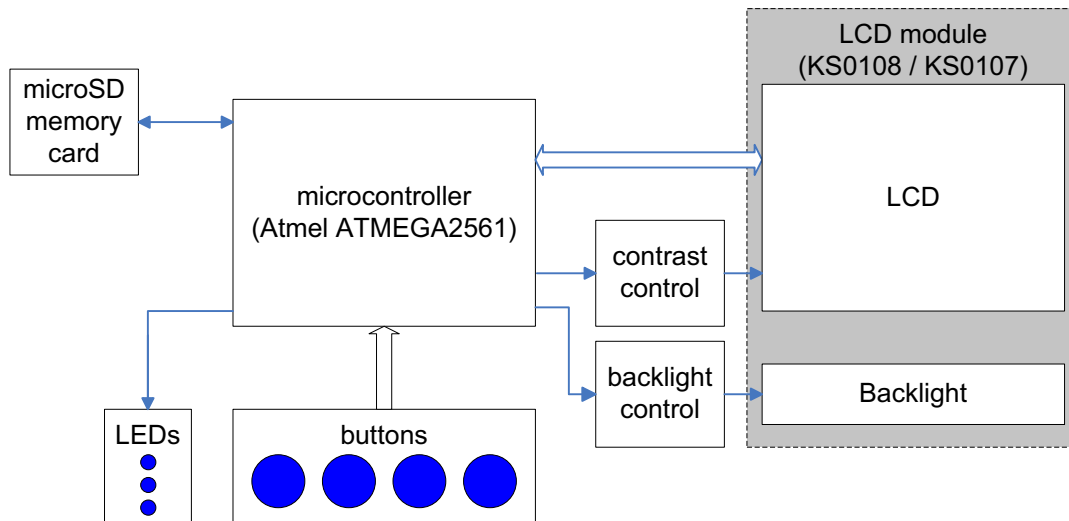


demonstration, download the zipped folder at www.crystalfontz.com/product/CFA10006.html.

Acknowledgement Note: The miniBASIC-AVR is a derivative of this (see www.ericengler.com/Minibasic.aspx), which is a derivative of this (see www.personal.leeds.ac.uk/~bgy1mm/Minibasic/MiniBasicHome.html). The miniBASIC-AVR also includes the EFSL embedded file systems library (see <http://efsl.be/>) and the Graphic Library for KS0108- (and compatible) based LCDs by Fabian Maximilian Thiele.

HARDWARE DESIGN INFORMATION

Here is a block diagram of the CFA10006 Demonstration Board:



The zipped folder at www.crystalfontz.com/product/CFA10006.html includes the complete hardware design of the CFA10006 Demonstration Board.

- Schematic.
- PCB layout.
- BOM (Bill Of Materials) as an XLS spreadsheet.
- “Super simple” LCD initialization code and bitmap display code.

The schematic and PCB layout were created with CadSoft EAGLE. EAGLE is a capable and low-cost electrical CAD system. You can download EAGLE from <http://www.cadsoft.de/> (at no cost for evaluation purposes) to view the schematic and layout files.



CARE AND HANDLING PRECAUTIONS

The kit is sold with a module mounted on it. If you attempt to modify the board to work with other modules, the warranty is void. For optimum operation of the module and demonstration board and to prolong their life, please follow the precautions below.

ESD (ELECTRO-STATIC DISCHARGE)

The circuitry is industry standard CMOS logic and susceptible to ESD damage. Please use industry standard antistatic precautions as you would for any other PCB such as expansion cards or motherboards.

AVOID SHOCK, IMPACT, TORQUE, AND TENSION

- Do not expose the module to strong mechanical shock, impact, torque, and tension.
- Do not drop, toss, bend, or twist the module.
- Do not place weight or pressure on the module.

LCD MODULE GLASS

- The exposed surface of the LCD "glass" is actually a polarizer laminated on top of the glass. To protect the soft plastic polarizer from damage, the module ships with a protective film over the polarizer. Please peel off the protective film slowly. Peeling off the protective film abruptly may generate static electricity.
- The polarizer is made out of soft plastic and is easily scratched or damaged. When handling the module, avoid touching the polarizer. Finger oils are difficult to remove.
- If the LCD panel breaks, be careful not to get the liquid crystal fluid in your mouth or eyes. If the liquid crystal fluid touches your skin, clothes, or work surface, wash it off immediately using soap and plenty of water.
- Be very careful when you clean the polarizer. Do not clean the polarizer with liquids. Do not wipe the polarizer with any type of cloth or swab (for example, Q-tips). Use the removable protective film to remove smudges (for example, fingerprints) and any foreign matter. If you no longer have the protective film, use standard transparent office tape (for example, Scotch® brand "CrystalClear Tape"). If the polarizer is dusty, you may carefully blow it off with clean, dry, oil-free compressed air.

OPERATION

- Use only the included AC adapter to power the board.
- Observe the operating temperature limitations: from -20°C minimum to +70°C maximum with minimal fluctuations. Operation outside of these limits may shorten the life and/or harm the display.
 - At lower temperatures of this range, response time is delayed.
 - At higher temperatures of this range, display becomes dark. (You may need to adjust the contrast.)
- Operate away from dust, moisture, and direct sunlight.

STORAGE AND RECYCLING



- Store in an ESD-approved container away from dust, moisture, and direct sunlight.
- Observe the storage temperature limitations: from -30°C minimum to +80°C maximum with minimal fluctuations. Rapid temperature changes can cause moisture to form, resulting in permanent damage.
- Do not allow weight to be placed on the modules while they are in storage.
- Please recycle your outdated Crystalfontz LCD modules at an approved facility.