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S1D13706 Embedded Memory LCD Controller

13706SHOW Demonstration Program

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13706SHOW

13706SHOW is designed to demonstrate and test some of the S1D13706 display capabilities. The program can cycle through all color depths and display a pattern showing all available colors or shades of gray. Alternately, the user can specify a color depth and display configuration. 13706SHOW supports SwivelView™ (90°, 180°, and 270° hardware rotation of the display image).

The 13706SHOW demonstration program must be configured and/or compiled to work with your hardware platform. The utility 13706CFG.EXE can be used to configure 13706SHOW. For further information on 13706CFG, refer to the *13706CFG Users Manual*, document number X31B-B-001-xx.

This software is designed to work in both embedded and personal computer (PC) environments. For the embedded environment, it is assumed that the system has a means of downloading software from the PC to the target platform. Typically this is done by serial communications, where the PC uses a terminal program to send control commands and information to the target processor. Alternatively, the PC can program an EPROM, which is then placed in the target platform. Some target platforms can also communicate with the PC via a parallel port connection, or an Ethernet connection.

S1D13706 Supported Evaluation Platforms

13706SHOW supports the following S1D13706 evaluation platforms:

- PC system with an Intel 80x86 processor running Windows® 9x/NT.
- M68EC000IDP (Integrated Development Platform) board, revision 3.0, with a Motorola M68EC000 processor.
- MC68030IDP (Integrated Development Platform) board, revision 3.0, with a Motorola MC68030 processor.
- SH3-LCEVB board, revision B, with an Hitachi SH-3 HD6417780 processor.
- DSP56654ADS (Applications Development System) board, with a Motorola REDCAP2 processor.

Note

The 13706SHOW source code can be modified or recompiled to allow 13706SHOW to run on other evaluation platforms not listed above.

Installation

PC platform:

Copy the file **13706show.exe** to a directory specified in the path (e.g. PATH=C:\13706).

Embedded platform:

Download the program **13706show** to the system.

Usage

PC Platform

At the prompt, type:

13706SHOW [/a] [/bigmem] [b=n] [/g[=n]] [/noclkerr] [/noinit] [/r90 | /r180 | /r270] [/read] [/s] [/write] [/?]

Embedded platform

Execute **`13706show`** and type the command line argument at the prompt.

Where:

/a	Cycles through all video modes automatically.
b=n	Shows the LCD display at a user specified color depth (bpp) where n = (1, 2, 4, 8, 16).
/g=n	Shows the image overlaid with a 20 pixel wide grid where n = white(0) or black(1). If n is not specified, the grid defaults to white.
/noinit	Skips full register initialization. Only registers used for changing the color depth (bpp) are updated. Additionally, some registers are read to determine information such as display size.
/r90	Enables SwivelView 90° mode, counter-clockwise hardware rotation of LCD image by 90 degrees.
/r180	Enables SwivelView 180° mode, counter-clockwise hardware rotation of LCD image by 180 degrees.
/r270	Enables SwivelView 270° mode, counter-clockwise hardware rotation of LCD image by 270 degrees.
/s	Displays a vertical stripe pattern.

/?	Displays the help screen.

Test Only Switches
(The following switches were added for testing and validation. They are not supported at the customer level.)

/bigmem	Assumes memory size is 2M bytes instead of 80K bytes **(for testing purposes only)**.
/noclkerr	Allows invalid SwivelView clock settings **(for testing purposes only)**.
/read	After drawing the image, continually reads the entire display buffer in dword increments **(for testing purposes only)**.
/write	Continually writes to one word of offscreen memory **(for testing purposes only)**.

Note

Pressing the *Esc* key will exit the program.

13706SHOW Examples

13706SHOW is designed to demonstrate and test some of the features of the S1D13706. The following examples show how to use the program in both instances.

Using 13706SHOW For Demonstration

1. To show color patterns which must be manually stepped through, type the following:

   13706SHOW

   The program displays the default color depth as selected by 13706CFG. Press any key to go to the next screen. Once all screens are shown the program exits. To exit the program immediately press the *Esc* key.

2. To show color patterns which automatically step through, type the following:

   13706SHOW /a

   The program displays the default color depth as selected by 13706CFG. Each screen is shown for approximately 1 second before the next screen is automatically shown. The program exits after the last screen is shown. To exit the program immediately press *CTRL+BREAK*.

3. To show a color pattern for a specific color depth, type the following:

   13706SHOW b=[mode]

   where:
   mode = 1, 2, 4, 8, or 16

   The program displays the requested color depth and then exits.

Note
If a monochrome LCD panel is used, the image is formed using only the green component of the Look-Up Table for 1, 2, 4 and 8 bpp color depths. For 16 bpp color depths the green component of the pixel value is used.

4. To show the color patterns in SwivelView 90° mode, type the following:

   13706SHOW /r90

   The program displays the default color depth as selected by 13706CFG. Press any key to go to the next screen. To exit the program immediately press the *Esc* key.

   The “/r90”, “/r180”, and “/r270” switches can be used in combination with other command line switches.

5. To show solid vertical stripes, type the following:

   13706SHOW /s

   The program displays the default color depth as selected by 13706CFG. Press any key to go to the next screen. Once all screens are shown the program exits. To exit the program immediately press the *Esc* key.

   The “/s” switch can be used in combination with other command line switches.

Comments

- If 13706SHOW is started without specifying the color depth (b=), the program automatically cycles through the available color depths from highest to lowest. The first color depth shown is the default color depth value saved to 13706SHOW using 13706CFG. This approach avoids showing color depths not supported by a given hardware configuration.
- 13706SHOW cannot show a greater color depth than the display device allows.

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