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S1D13706 Embedded Memory LCD Controller

13706BMP Demonstration Program

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13706BMP

13706BMP is a demonstration utility used to show the S1D13706 display capabilities by rendering bitmap images on the display device. The program displays any bitmap stored in Windows BMP file format and then exits. 13706BMP supports SviwelView™ (90°, 180°, and 270° hardware rotation of the display image).

13706BMP is designed to operate on a personal computer (PC) within a 32-bit environment only (Windows® 9x/NT). Other embedded platforms are not supported due to the possible lack of system memory or structured file system.

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

S1D13706 Supported Evaluation Platforms

13706BMP supports the following S1D13706 evaluation platforms:

- PC with an Intel 80x86 processor running Windows 9x/NT.

Note
The 13706BMP source code may be modified by the OEM to support other evaluation platforms.

Installation

Copy the file **13706bmp.exe** to a directory in the path (e.g. PATH=C:\S1D13706).

Usage

At the prompt, type:

13706bmp bmpfile1 [bmpfile2] [ds=n | ds=?] [move=n] [/noinit] [/r90 | /r180 | /r270] [/v] [/?]

Where:

bmpfile1	Specifies filename of the windows format bmp image used for the main window (display surface 0).
bmpfile2	Specifies filename of the windows format bmp image used for the sub-window (display surface 1). If bmpfile2 is not specified, bmpfile1 is also used for the sub-window.
ds=n	Selects display surfaces (see Section , *"Display Surfaces"* on page 5).
ds=?	Shows available display surfaces (see Section , *"Display Surfaces"* on page 5).
move=n	Automatically moves the sub-window for n seconds. To move the sub-window indefinitely set n=-1.
/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 the LCD image by 90 degrees.
/r180	Enables SwivelView 180° mode, counter-clockwise hardware rotation of the LCD image by 180 degrees.
/r270	Enables SwivelView 270° mode, counter-clockwise hardware rotation of the LCD image by 270 degrees.
/v	Verbose mode (provides information about the displayed image).
/?	Displays the help message.

Note

13706BMP displays the bmpfile image(s) and returns to the prompt.

Display Surfaces

A display surface is a block of memory assigned to the main window and/or sub-window of the S1D13706. The sub-window is a feature of the S1D13706 “Picture-In-Picture Plus” feature. For further information on “Picture-In-Picture Plus”, see the *S1D13706 Hardware Functional Specification*, document number X31B-A-001-xx.

13706BMP includes three predefined display surfaces (0-2) which cover the possible combinations of these windows. Table 1: “Display Surfaces” lists the display surfaces that may be selected.

Table 1: Display Surfaces

Display Surface (ds=)	Window(s) using Memory Block 0	Window(s) using Memory Block 1
0	Main Window	—
1	Main & Sub-window	—
2	Main Window	Sub-window

When ds=0, bmpfile1.bmp is displayed in the main window. If ds=n is not specified on the command line, this setting is automatically used when bmpfile2.bmp is not provided. This should be chosen when a sub-window is not required.

When ds=1, bmpfile1.bmp is displayed in the main window and also in the sub-window. Note that only a portion of bmpfile1.bmp is displayed if the sub-window is smaller than the resolution of the bmpfile.

When ds=2, bmpfile1.bmp is displayed in the main window and bmpfile2.bmp is displayed in the sub-window. This is the most useful combination to demonstrate the “Picture-In-Picture Plus” feature.

13706BMP Examples

To display a bmp image in the main window on an LCD, type the following:
13706bmp bmpfile1.bmp ds=0

To display a bmp image in the main window with 90° SwivelView™ enabled, type the following:
13706bmp bmpfile1.bmp ds=0 /r90

To display the same bmp image in both the main window and the sub-window, type the following:
13706bmp bmpfile1.bmp ds=1

To display different bmp images independently in the main and sub-windows and have the sub-window move indefinitely within the main window, type the following:
13706 bmpfile1.bmp bmpfile2.bmp ds=2 move=-1

Comments

- 13706BMP displays only Windows BMP format images.
- A 24-bit true color bitmap is displayed at a color depth of 16 bit-per-pixel.
- Only the green component of the image is seen on a monochrome panel.