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S1D13705 Embedded Memory LCD Controller

13705VIRT Display Utility

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13705VIRT

13705VIRT demonstrates the virtual display capability of the S1D13705. A virtual display is where the image to be displayed is larger than the physical display device. The display surface is used a viewing window. The entire image can be seen only by panning and scrolling.

The 13705VIRT display utility must be configured and/or compiled to work with your hardware platform. The program 13705CFG.EXE can be used to configure 13705VIRT. Consult the 13705CFG users guide, document number X27A-B-001-xx, for more information on configuring S1D13705 utilities.

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. 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.

S1D13705 Supported Evaluation Platforms

13705VIRT has been tested with the following S1D13705 supported evaluation platforms:

- PC system with an x86 processor.
- M68EC000IDP (Integrated Development Platform) board, revision 3.0, with a Motorola M68EC000 processor.
- SH3-LCEVB board, revision B, with an Hitachi SH-3 HD6417780 processor.

If the platform you are using is different from the above, please see the S1D13705 Programming Notes and Examples manual, document number X26A-G-002-xx.

Installation

PC Intel Platform

For 16-Bit Program Version: copy the file 13705VIRT.EXE to a directory that is in the DOS path on your hard drive.

For 32-Bit Program Version: install the 32-bit Windows device driver S1D13X0X.VXD as described in the S1D13X0X 32-Bit Windows Device Driver Installation Guide, document number X00A-E-003-xx. Copy the file 13705VIRT.EXE to a directory that is in the DOS path on your hard drive.

Embedded Platform

Download the program 13705VIRT to the system.

Usage

PC platform: at the prompt, type **`13705virt [/a] [/l] [/p] [/alt] [/w=???]`**.

Embedded platform: execute **`13705virt`** and at the prompt, type the command line argument.

Where:	`no argument`	panning and scrolling is performed manually (defaults to virtual width = = physical width x 2 and maximum virtual height)
	`/a`	panning and scrolling is performed automatically
	`/l`	Force landscape display mode to be set
	`/p`	Force portrait display mode to be set
	`/alt`	Enable alternate portrait mode. Selecting this option implies /p
	`/w=???`	specifies the virtual display width which includes both on-screen and off-screen size
		the maximum virtual width, not including display area, for each display mode is: 1 bpp – 4096 pixels 2 bpp – 2048 pixels 4 bpp – 1024 pixels 8 bpp – 512 pixels

The following keyboard commands are for navigation within the program.

Manual mode:	↑	scrolls up
	↓	scrolls down
	←	pans to the left
	→	pans to the right
	`HOME`	moves the display screen so that the upper right of the virtual screen shows in the upper right of the display
	`END`	moves the display screen so that the lower left of the virtual screen shows in the lower left of the display
Automatic mode:	`any key`	changes the direction of screen
Both modes:	`b`	changes the color depth (bits-per-pixel)
	`ESC`	exits 13705VIRT

13705VIRT Example

1. Type “13705virt /a” to automatically pan and scroll.
2. Press "b" to change the bits-per-pixel from 1 bit-per-pixel to 2 bits-per-pixel.
3. Repeat steps 1 and 2 for the remaining color depths (4 and 8 bit-per-pixel).
4. Press <ESC> to exit the program.

Program Messages

`ERROR: Did not find a 13705 device.`

The HAL was unable to read the revision code register on the S1D13705. Ensure that the S1D13705 hardware is installed and that the hardware platform has been configured correctly. Also check that the display memory address has been configured correctly.

`ERROR: Unable to locate/load S1D13XXX.VXD`

13705PLAY was unable to load a required driver. The file S1D13XXX.VXD should be located in x:\WINDOWS\SYSTEM or in x:\WINNT\SYSTEM. If the file is not there, install it as described in the S1D13XXX 32-Bit Windows Device Driver Installation Guide, document number X00A-E-003-xx.

`ERROR: An IOCTL error occurred`

This message indicates an error at the IO control layer occurred. The usual cause for this is an incorrect hardware configuration.

`ERROR: The HAL returned an unknown error`

This message should never be displayed, it indicates that 13705VIRT is unable to determine the cause of an error returned from the HAL.

Unable to use virtual mode at xx BPP

This message is displayed if there is insufficient display memory to show a complete virtual image. Specifically, the maximum number of lines for the image is calculated using the current virtual width. If the number of possible lines is less than the physical display size this message is displayed. Try restarting the program and manually specify a smaller virtual width.