Silicon Motion®, Inc.

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SMI Control Panel
User Manual

1 Overview & Scope

This Document is mainly describing the SMI windows Control Panel's functions and limitations, as well as operations and how-to tips.

SMI Control Panel is designed as a handy tool to change display topology, set display mode, read monitor EDID and show driver & Video-BIOS information for SM718 and SM750.

Requirements:
1. Microsoft Windows XP and later.
2. Silicon Motion display adapter SM750 and/or SM718.
3. Silicon Motion display drivers installed.

Installation:
There is two ways to setup SMI Control Panel:
1. Copy SMI to target machine, and run it directly.
2. Run setup.exe from SMI Windows installation package to install SMI graphics software set. After installation finishes and restart the computer, SMI Control Panel will automatically run after log into desktop.

Note:
SMI Control Panel will minimize to Notification Area at the rightmost of the system Taskbar. You need to click on to the icon to call it out.

2 Glossary

Term	Definition
Single	One view on one monitor
Clone	One view on all active monitors
Dual	Two views enabled on the same display adapter, also called Extended View
Topology	Information that specifies which source is shown on which target for an adapter
EDID	Extended Display Identification Data (EDID): A string of data provided by display monitors to describe its capabilities to a video source (display adapter)
Display Mode	Combination of display resolution (width and height in pixels), color depth (in bits per pixel), and refresh rate (in Hertz) for one view

3 How-To-Use

3.1 Change display topology

With this feature, user can switch to different display types (Single, Clone, and Dual). Each display type has its corresponding display device list. For example, when "Single" selected, its corresponding display devices are "LCD1" and "CRT2". As shown in Figure 1.
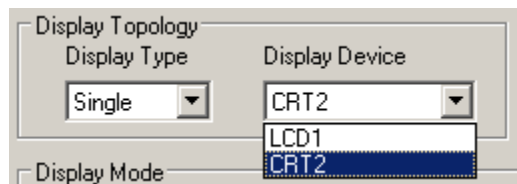
Figure 1, Display Topology

Note:
The possible display type and display devices are queried from driver and shown to user dynamically. So when work with different driver/VBIOS/adapter, the device list may not the same.

3.2   Change display mode

For the display type and display device(s) selected, in the "Display Mode" group, all the available modes (resolution, color depth, refresh rate, and rotation degree) and current mode(s) are displayed. If "Single" or "Clone" display type is selected, only one view's mode information is active; if "Dual" display type is selected, two views' mode information is active, as shown in Figure 2 & Figure 3.
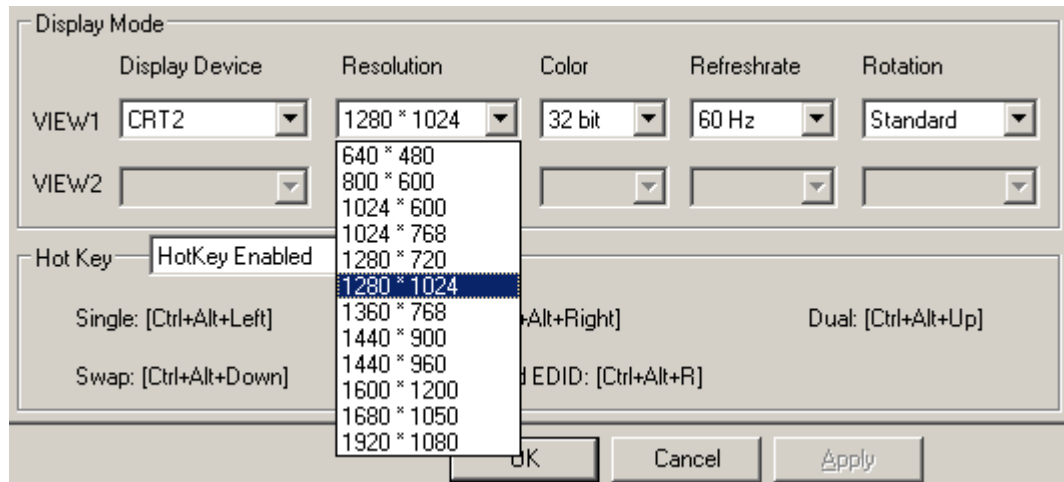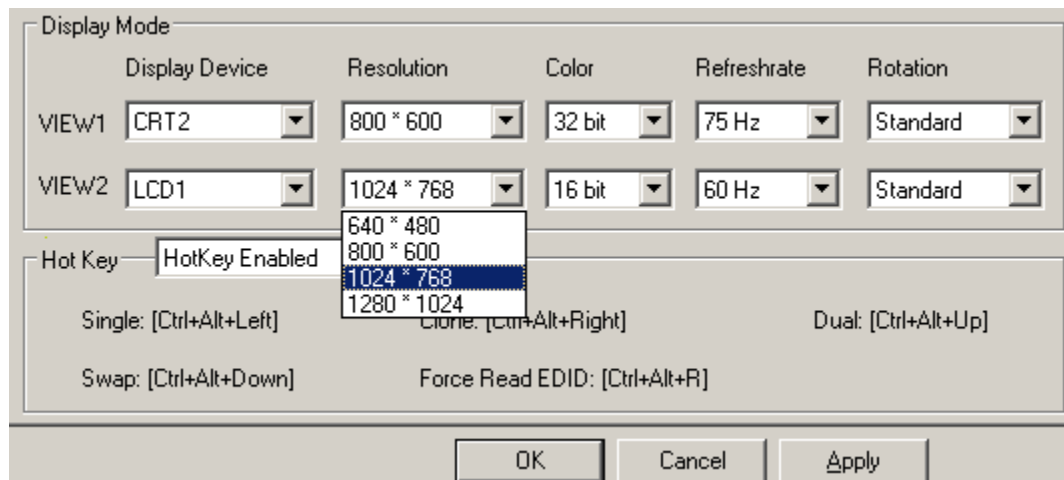

Figure 2, View1 mode information

Figure 3, View1 and View2 mode information

If you want to set to another mode configuration, you can change the mode items in each combo box.

Note:
Other mode items may be adjusted automatically or not during you change mode items. This is because SMI Control Panel monitors each mode item change and calculates the bandwidth and video memory requirements for the new mode configuration. If the display hardware can't meet the requirements, other mode items will be adjusted automatically to meet the requirement. This behavior is similar to what OS Display Property does when you try to select to a mode unsupported by the hardware: For example, if current mode is 1920*1080 with 16-bit color, when you select 32-bit color, the mode resolution will be adjusted to a lower one if the hardware doesn't support 1920*1080 with 32-bit color.

After you change any mode item(s) and click "Apply" button to apply new mode configuration into hardware, screen may black out to switch to the new mode. If the new mode can't be accepted by the target monitor(s) (in case that no EDID is reported by the monitor thus the new mode may not be supported by the monitor, see section 3.4), you can wait about 15 seconds with the black screen and then it will automatically revert back to the previous mode configuration. If the new mode configuration is accepted by the monitor(s), you can regain the display after the brief back out. On the regained display, there's a dialog box prompted to ask you whether to save the mode change or not, as shown in Figure 4. If neither "OK" nor "Cancel" button is clicked, then it will revert back to previous mode configuration after 15 seconds.
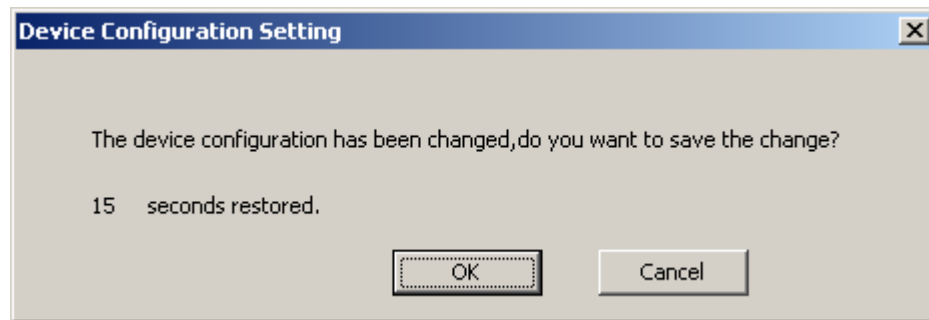

Figure 4, Reverting dialog

Note:
When new display type or display device(s) is selected before apply, the mode list(s) will not be updated for the new display type or display device(s). This is not a bug. It is current SMI CP design's limitation. SMI Control Panel always queries OS to retrieves the mode list(s), which thus would not be updated until new display type or display device(s) is applied.

3.3 Swap Primary

Primary device is the device which displays the primary view in Dual mode. If user wants to set the primary view onto the other display device(s) other than the current device(s), "Swap" button can be clicked to achieve the purpose, as shown in Figure 5.
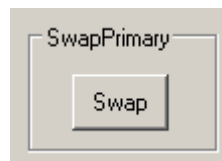

Figure 5, Swap Primary

Note:
"Swap" button is active only during dual mode.

3.4 Force Read EDID

EDID is used for monitor to report capabilities including mode caps to display adapters. Mode lists displayed in SMI Control Panel are filtered according to EDID if it's available. So if you changed any monitors on the fly, you'd better to click "Force Read EDID" to update the EDID for the new monitor, as shown in Figure 6.
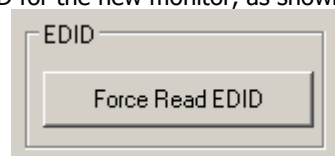

Figure 6, Force Read EDID

Note:

1. If user changed display configuration, but didn't click "OK" or "Apply" to apply them to HW and then click "Force Read EDID", the new configuration will not be applied. After user clicks "Force Read EDID", SMI control panel will firstly forces OS to read EDID of all attached monitor, secondly queries from driver the current display configuration and update them onto the SMI Control Panel.
2. After user changes the display device to a another one, and if current mode is not supported by the new monitor's mode list, SMI Control Panel will force to re-set another supported mode to the new monitor.

3.5   Hot Key

SMI Control Panel supports hotkeys for main functions, such as switch display type to "Single", "Clone", and "Dual", Swap Primary, and Force Read EDID. When move cursor onto the corresponding area, it will pop up tool-tip information. User can click pull-down menu to enable/disable hotkey function, as shown in Figure 7.
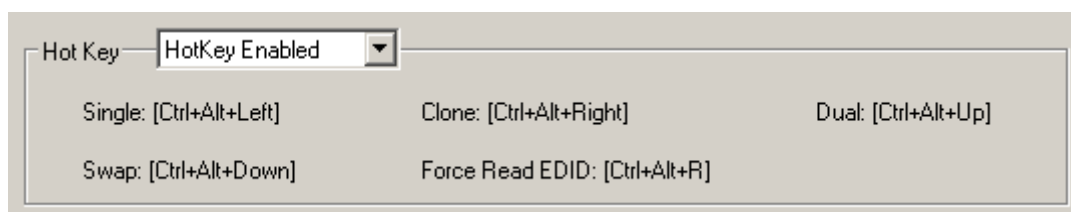

Figure 7, Hot Key

Hotkey (Ctl+Alt+Left) will loop all the possible single display devices.
Hotkey (Ctl+Alt+Right) will loop all the possible Clone configuration(s).
Hotkey (Ctl+Alt+UP) will loop all the possible Dual configuration(s).
Hotkey (Ctl+Alt+Down) acts with the same function as clicking button "Swap".
Hotkey (Ctl+Alt+R) acts with the same function as clicking button "Force Read EDID".

Note:

Hotkey is not re-enterable, that is, after one hotkey is triggered, any other hotkey will not work until the triggered hotkey event process is completed.

3.6   Driver information

Click the second page of the tool, user can get the driver information, including device type, driver version, memory size, SMI Control Panel version, VBIOS version, VBIOS display type, VBIOS panel size. As shown in Figure 8.
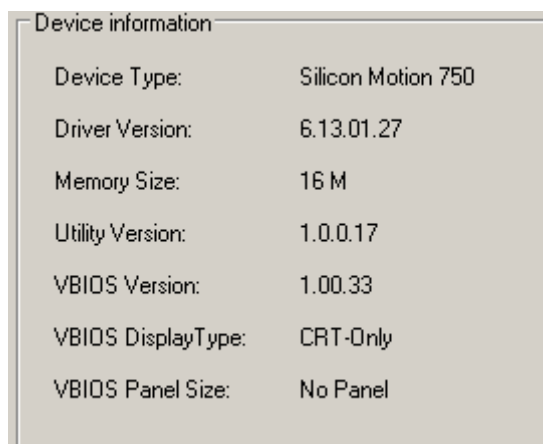

Figure 8, Driver information

4 History

Date	Changes made	Changed by
6/30/2010	Created	Bruce
8/10/2010	Update for latest SMI Control Panel version v1.0.0.14.	Ramon Wang
9/17/2010	Update for latest SMI Control Panel version v1.0.0.17.	Xiuchao Sun
9/19/2010	Refine.	Xiuchao Sun