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EXTERNAL MONITOR TO HAVE RAPIDLY PRIVACY PROTECTION WHICH LINKS WITH NOTEBOOK PRIVACY (PANEL) MODE

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External Monitor to have rapidly privacy protection which links with notebook privacy (panel) mode.

Abstract:

As notebook application, usually has external monitor for higher resolution or larger screen, and multiple displays for several operations or applications. Based on current notebook privacy mode, it only effects internal monitor (notebook display), it can't control external monitor display behavior. Once end-user switch to privacy mode, only internal monitor entry privacy mode.

The invention concept of "External Monitor to have rapidly privacy concept" was to extend privacy solution to involve external monitor. It will have better privacy behavior which considers the external monitor behavior in privacy mode switch.

Problem Solved:

While privacy mode switch, turn-off external monitor rapidly by HW design circuity. Achieve both notebook internal panel/display and external monitor entry privacy mode. It also can have SW setup for several scenarios. For example, turn on/off external monitor while privacy mode in SW setup depends on end user setup.
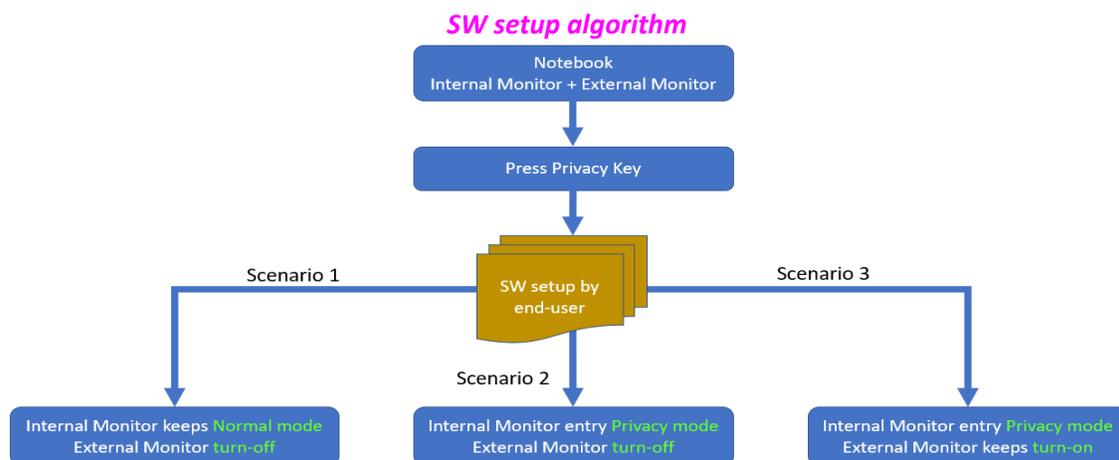
Prior Solutions:

In currently design, there is no specific solution to trigger external monitor behavior while notebook entry privacy mode.

Descriptions:

Use circuity to turn-off external monitor. There is one GPIO requirement and multiple ideas on this GPIO

➢ It can be same as our current Privacy Mode GPIO which is informing panel to entry privacy mode. GPIO is existence now.

➢ It can be additional GPIO so that we can have more SW or End-user control flexibility.

For additional GPIO design, we can consider below algorithm that provides option for end user. End user can select scenario of external monitor privacy event while system entry privacy mode.

SW setup algorithm

Notebook
Internal Monitor + External Monitor

Press Privacy Key

SW setup by end-user

Scenario 1

Scenario 2

Scenario 3

Internal Monitor keeps Normal mode
External Monitor turn-off

Internal Monitor entry Privacy mode
External Monitor turn-off

Internal Monitor entry Privacy mode
External Monitor keeps turn-on

Implementation

• Circuity #1. There is a MOSFET to cut-off external monitor power from notebook while enable privacy mode.

- Circuity #2. There is a MOSFET to cut-off HPD (hot-plug) signal to turn-off external monitor. HPD is a key signal to enable external monitor
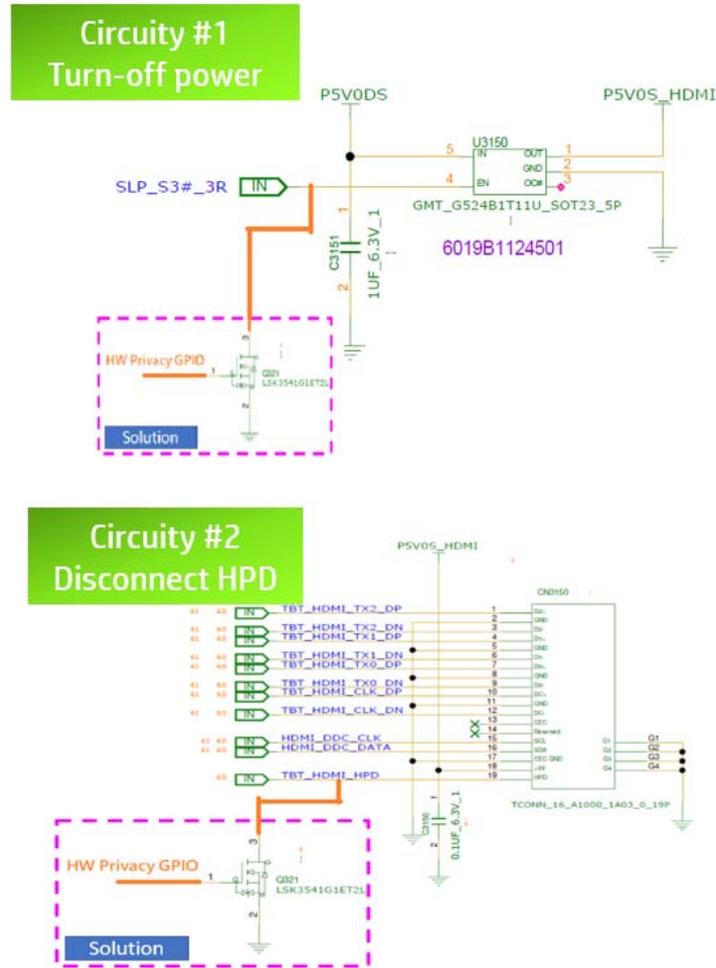
Advantages:

This concept can enhance privacy mode scenario for user behavior. To provide better privacy protection for end-user. Not just privacy panel, it could be privacy mode for both internal and external monitors.

Disclosed by Rick Chen, Isa Cheng, Enzo Liu and Rex Lin, HP Inc.