

Technical Disclosure Commons

Defensive Publications Series

September 16, 2019

USING SINGLE HOTKEY TO CONTROL BRIGHTNESS ON NOTEBOOK

HP INC

Follow this and additional works at: https://www.tdcommons.org/dpubs_series

Recommended Citation

INC, HP, "USING SINGLE HOTKEY TO CONTROL BRIGHTNESS ON NOTEBOOK", Technical Disclosure Commons, (September 16, 2019)
https://www.tdcommons.org/dpubs_series/2482



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

Using Single Hotkey to Control Brightness on Notebook

Abstract:

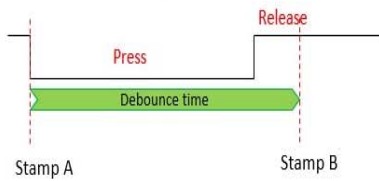
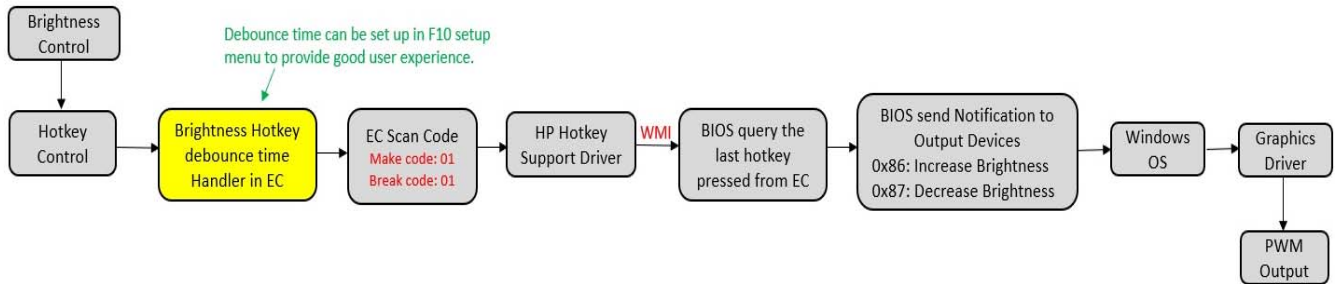
- Limited Hotkey function support due to there are no enough function keys between F1 and F12 on keyboard.
- Platform designer can re-design keyboard layout to provide more hotkey space, but it causes cost up.
- Embedded controller (EC) has capability to identify the behavior when brightness hotkey is pressed or hold down within a debounce time.
- When brightness hotkey is pressed and then release within a debounce time, this hotkey event is set as brightness up.
- When brightness hotkey is kept press within a debounce time, this hotkey event is set as brightness down.
- Depend on the brightness hotkey pressed behavior that identified by EC, EC can issue scan code, SMI or ACPI Query event to BIOS to issue brightness event to ACPI OS.
- Note: This brightness hotkey debounce time can be set up in BIOS setup menu.

Design Construction:

- HW: The printing of Brightness Hotkey on Keyboard needs to re-design.
- SW: No SW need
- BIOS/EC: EC checks the brightness hotkey pressed within a debounce time and informs BIOS to notify Brightness Up/Down event to ACPI OS.

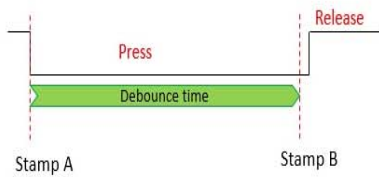
< Block Flow Diagram >

Feature Model



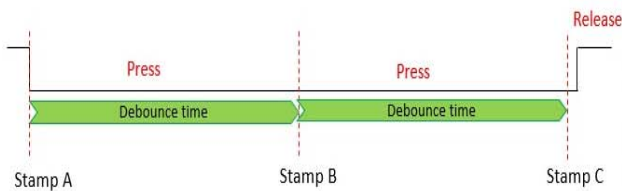
Case 1: Brightness Up - one time press

- a. EC read state of brightness hotkey at stamp A and the state is "Press".
- b. After the debounce time, EC read state of brightness hotkey at stamp B and state is "Release".
- c. The last hotkey pressed state is "Brightness Up" and send 0x86 notification.



Case 2: Brightness Down - one time press

- a. EC read state of brightness hotkey at stamp A and the state is "Press".
- b. After the debounce time, EC read state of brightness hotkey at stamp B and state is "Press".
- c. The last hotkey pressed state is "Brightness Down" and send 0x87 notification.



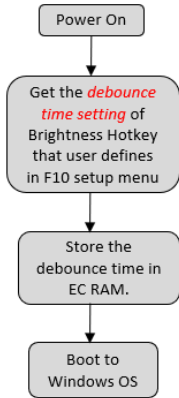
Case 3: Brightness Down - 2 times press

- a. EC read state of brightness hotkey at stamp A and the state is "Press".
- b. After the debounce time, EC read state of brightness hotkey at stamp B and state is "Press".
- c. The first hotkey pressed state is "Brightness Down" and send 0x87 notification.
- d. After the next debounce time, EC read state of brightness hotkey at stamp C and state keeps "Press".
- e. The last hotkey pressed state is "Brightness Down" and send 0x87 notification.
- f. Similarly, if the state of brightness hotkey still keeps "Press" in next debounce time, BIOS send 0x87 notification Continuously.

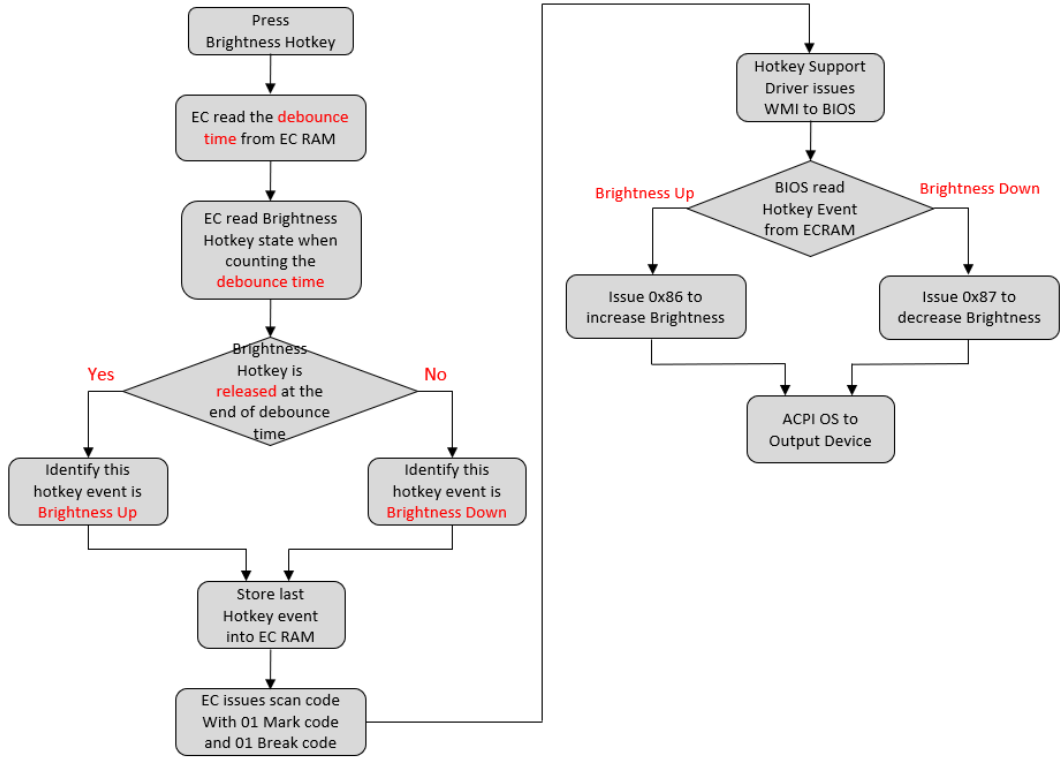
< Flow Chart >

Boot Flow

Pre-boot Environment



ACPI OS Environment



- **Business Strategy/Advantages**

1. Combine brightness up and brightness down 2 hotkeys into 1 hotkey without re-design keyboard layout.
2. Firmware solution to use single hotkey to support brightness up/down function.
3. Platform can support one more hotkey function without causing cost up.

Disclosed by **Chia-Cheng Lin, Harry Chang, Matt Lin, Nung-Kai Chen, HP Inc.**