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SUPPORT MULTIPLE LOGO IMAGES DISPLAY IN DIFFERENT COORDINATE ON DISPLAY SCREEN

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Support Multiple Logo Images Display in different coordinate on display screen

Abstract:

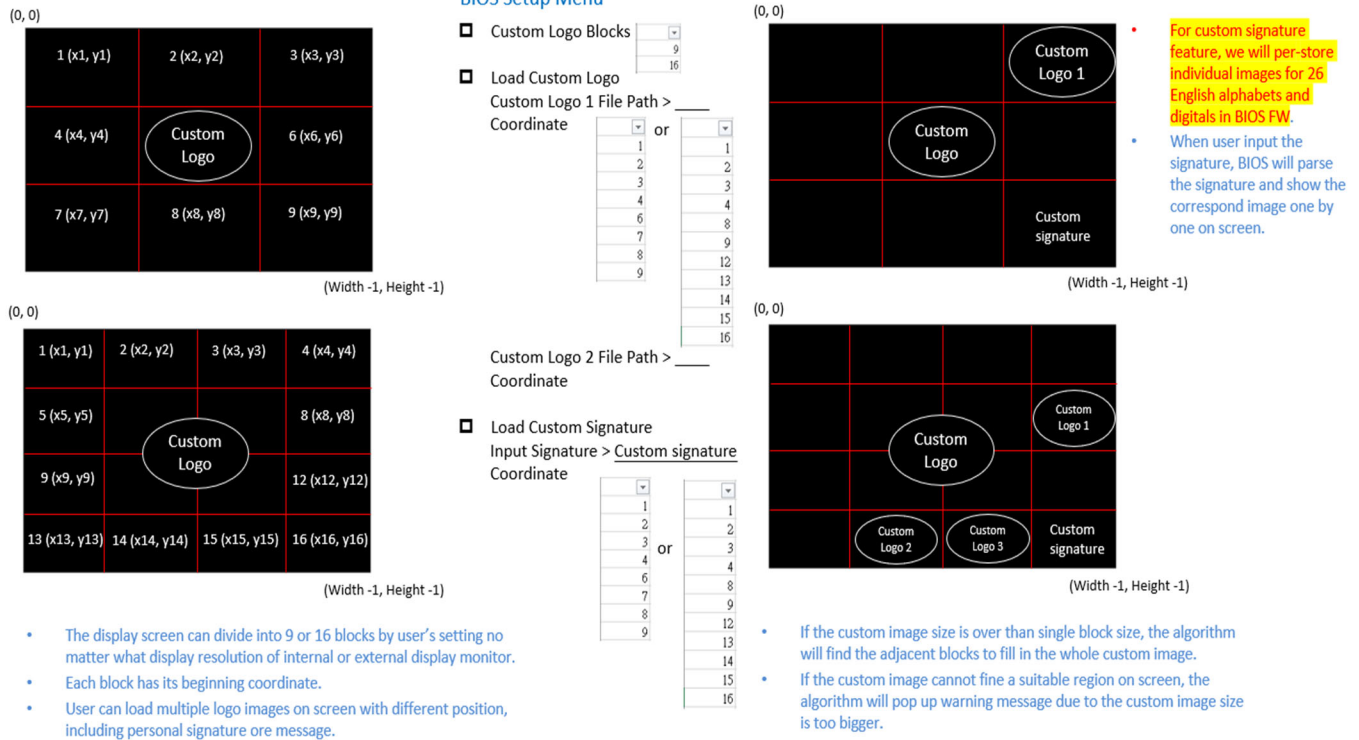
- Based on existing design, the custom Logo image does not coexist with product brand logo image at the same time during BIOS post.
- The position of product brand logo or custom logo is fixed on display screen, the position cannot be customized.
- The goal is to provide a mechanism to support multiple custom logo images that show on different position of present display screen. The supported logo image amount can be defined in BIOS setup, it could be 9 or 16 images.
- Refer to supported logo image amount, the present display screen will be divided into 9 or 16 blocks. Each of block has unique number, the position of upper left corner and the resolution (width/height).
- Multiple custom logo images can be shown on different block at the same time. This can be defined in BIOS setup.
- User's signature can be defined in BIOS setup and show on the predefined position of display screen.
- Not just product brand logo, custom logo image can be also set into ACPI BGRT table for seamless boot display used.

Design Construction:

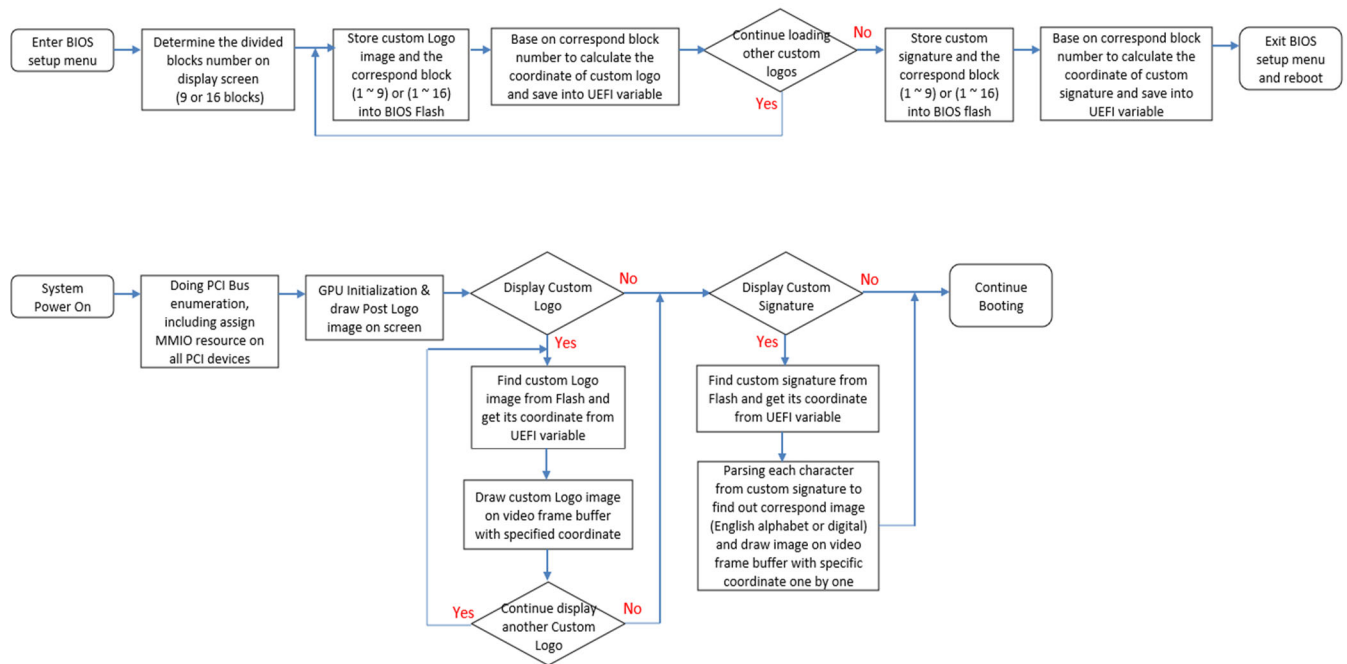
- HW: No HW need.
- SW: No SW need.
- BIOS: Query UEFI GOP (Graphics Output Protocol) driver to get the native resolution of present display screen and get the custom logo blocks amount that is predefined by BIOS setup. BIOS calculate the position of upper left corner and its resolution (width/height) on each of custom logo block. Loading custom logo images into BIOS flash and store its selected position of custom logo block into BIOS

variable. During BIOS post, BIOS send request to GOP driver to draw custom logos image on predefined logo block position on screen. Then BIOS read the physical address pointing to the firmware's in memory copy of the custom image bitmap and store into ACPI BGRT (Boot Graphics Resource Table) for seamless boot display.

< Block Flow Diagram >



< Flow Chart >



- **Business Strategy/Advantages**

1. Custom Logos can coexist with product brand Logo at the same time.
2. The display screen can be divided into 9 or 16 blocks by settings. Each of block can support custom logo image.
3. Not limited to internal panel, but also support on external display monitor.
4. The position of each of custom logo can be pre-defined by user.
5. User can determine custom logo position arbitrarily that show on display screen.
6. Not just custom logo, but also allow to display signature that is predefined in BIOS setup by user.
7. According to Boot Graphics Resource Table (BGRT) definition in ACPI 6.1 spec, the boot graphics image will be included in BGRT table and show during ACPI OS seamless boot. In general, the primary BIOS post logo image will be included in BGRT table. But this invention allow user to select which custom logo will be treated as boot graphics image that is included in BGRT table.

Disclosed by Chia-Cheng Lin, Emily Chen, Beryl Wang, HP Inc.