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CUSTOMIZED INTERNAL GFX ADAPTER CARD COMMON BTB CONNECTOR FOR COMMON DESIGN

HP INC

Customized Internal GFX Adapter Card Common BTB Connector For Common Design

Abstract: A printed circuit card footprint, pin-out assignments, and a mating connector for the card allows interchange of cards in an electronic product having different price/performance points and number of pins.

This disclosure relates to the field of printed circuit cards.

A technique is disclosed to define a card footprint, pin-out assignments, and a mating connector that allow multiple cards of varying numbers of I/O pins to be interchanged.

In some systems currently, a printed circuit card connector, such as the connector of an internal graphics adapter card, is not standard among different systems. There can exist, for example, three different cards, each with a different number of pins (e.g., 80 pins, 100 pins, and 160 pins) to provide different types of processing, memory, and other capabilities. However, any particular system can be capable of using just one type of card.

For example, a newly-designed graphics card may provide higher performance at a higher price, but there is also a need for that card to be interchangeable with earlier, lower-performance graphics cards which are less expensive.

According to the present disclosure, and as understood with reference to Figure 1, the footprint and pinout of a family of cards, each with a differing number of pins, are designed to be common such that a lower-performance, less-expensive card with a smaller number of pins can be easily used in place of a higher-performance, more-expensive card that has a larger number of pins via a common connector that can receive any of the cards.

The technique specifies a common pinout for all cards regardless of the number of pins, and a connector that includes the largest number of pins. Pins that are common among cards are co-located on the cards. A product that includes a connector to receive a card with a higher number of pins can alternatively operate with a card having a fewer number of pins. The single connector also can accommodate the key locks of each type of card.

Referring to Figure 1, consider cards 10, 20, and 30. Card 10 has 80 pins; card 20 has 100 pins; and card 30 has 160 pins. Card 30 may be higher performance and have a higher cost than card 20, and card 20 may be higher performance and have a higher cost than card 10.

Card 10 has key lock holes A and B. Card 20 has key lock holes A and C. Card 30 has key lock holes A and D. The dimensions of each key lock hole A, B, C, and D are different.

Connector 40, for example, a connector on a main board that can receive the card, illustrates the co-layout configuration. Connector 40 mates with each key lock hole A, B, C, D. The positioning of the key lock holes on each card 10, 20, 30 relative to the pinout arrangement of each is chosen to co-locate the common pinouts on the connector. The variation in dimensions among key lock holes A, B, C, and D ensure that each card 10, 20, 30 can be positioned in the connector 40 only in the correct location and orientation.

The disclosed technique advantageously provides interchangeability among cards of varying price-performance points, allowing a user flexibility in purchasing, and a manufacturer flexibility in production and service.

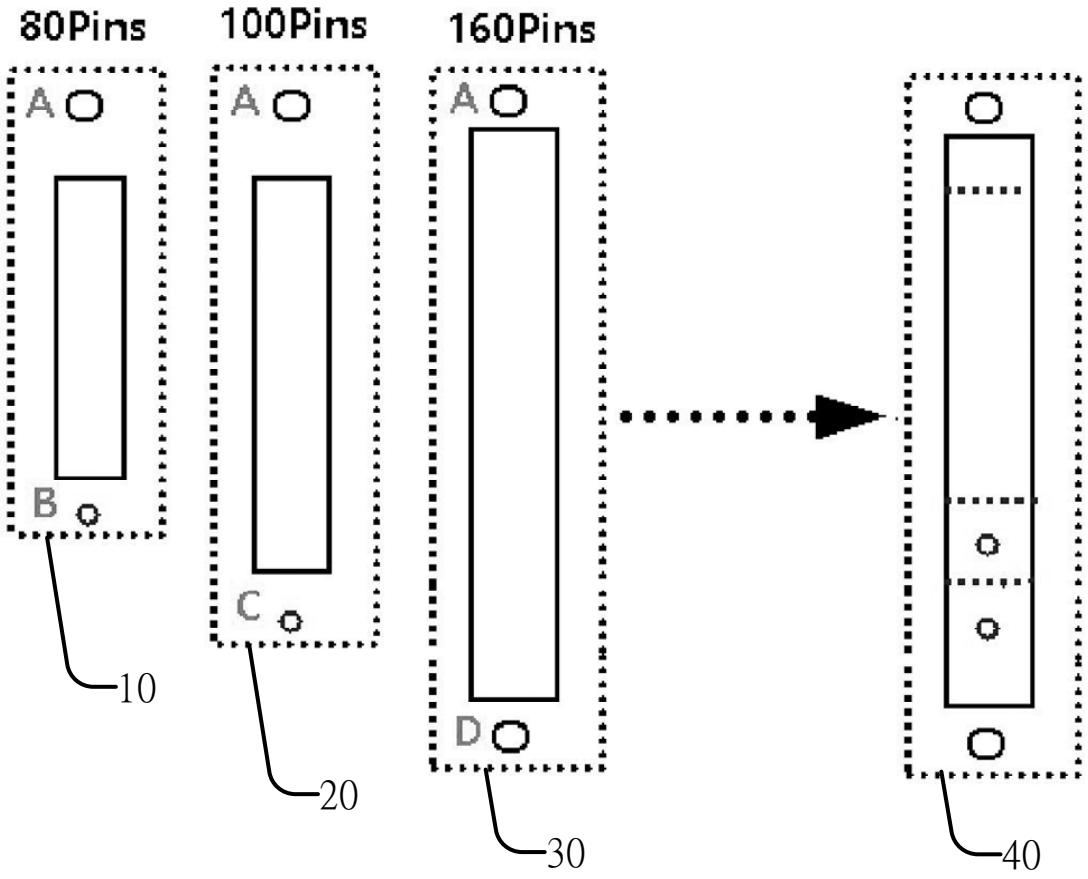

Figure 1

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