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## ELECTRICAL FAN DUCT, AIR BAFFLE POSITIONING DETECTION

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# Electrical fan duct, air baffle positioning detection.

## 1. Problem(s) solved

During the complex assemble process, it's not easy to make sure the fan duct and air baffle installed well by human judgement and further to make sure the system output the proper performance, worse condition is that during assembly cause other component, such as cable damage further short the signal and crash the system, example as below

Here providing a simple mechanism, to easily indicate whether the critical point on fan duct and air baffle in properly seat.

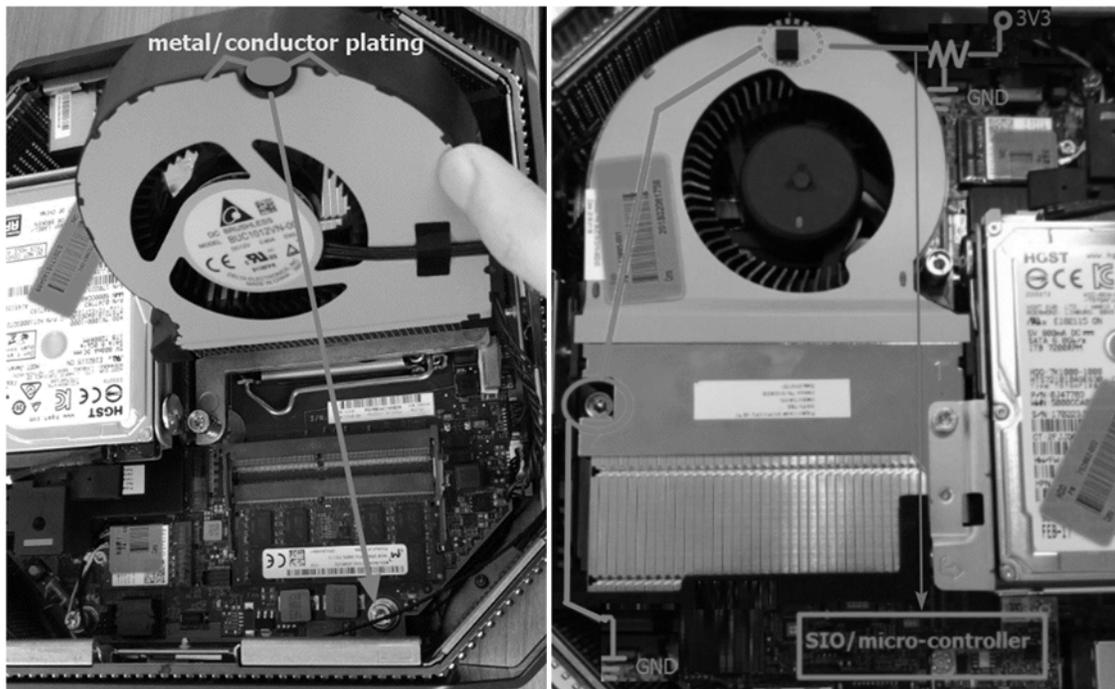
## 2. Prior Solutions

Developer would deliver the SOP to the manufacturing assembly hence it would be basically humanity check mechanism.

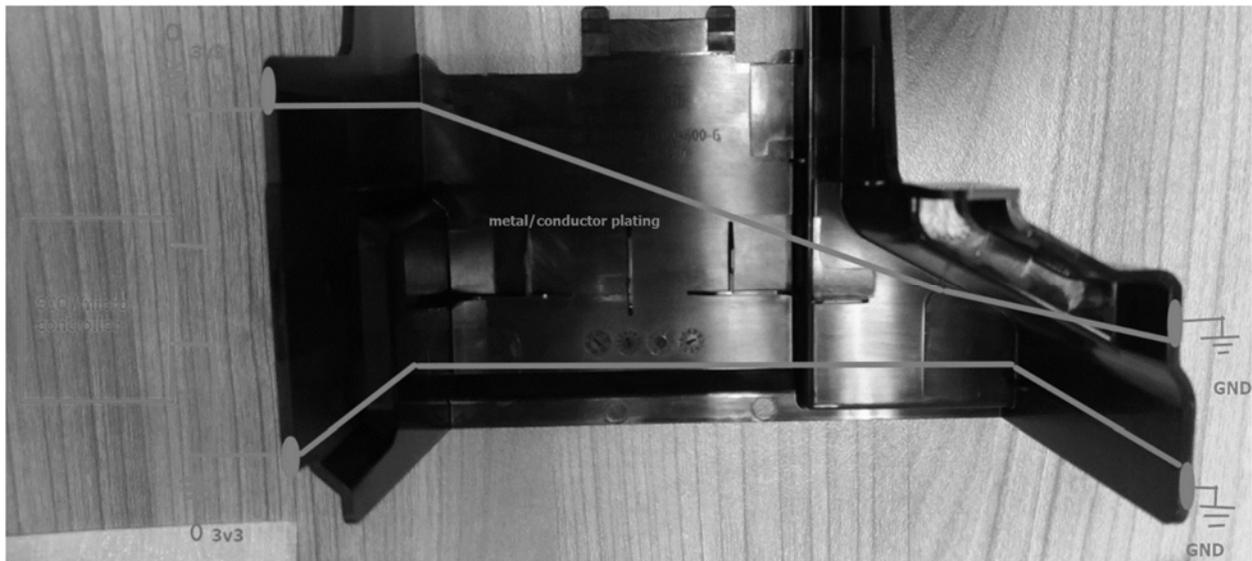
## 3. Description

Make a conduct loop on PCBA through the fan duct/air baffle, as below example, needs to put metal or conductor plating on the critical connecting point, that designer would like to check.

The circle represents the screw under the fan duct, screw connects copper shape on PCB, designer only needs to put a resistor on PCBA and induce the high level(power)/low level(GND) with relative circuitry, as below depicts, and if the loop is closed, while system running, the SIO/micro controller could receive a signal "LOW" which is GND showing the mechanical critical point is installed well.



Another example for the air baffle, resistor and SIO/microcontroller build on the PCBA, the PCBA could have a metal shape for air baffle to form the loop. Within air baffle for multiple point check needs embedded the metal or conductor for the loop detection.



Above scenario, SIO/micro controller continuously monitor the signal, if the signal goes high, represents the abnormal condition occur, SIO should be able to issue the event to BIOS further to pop out warning message to user that the fan duct and air baffle dislocated. User could base the warning message to re-seat the parts.

#### 4. Advantages

Make sure the fan duct, air baffle installed correctly and provide assembly check mechanism, which continuously make sure cooling ME part work/positioning as expect further make system to provide proper performance.

#### 5. Title

Electrical fan duct, air baffle positioning detection.

#### 6. Abstract

Computer has made/assembled in higher complexity and higher power consumption now due to multiple advance features of the processor/chipset enabled and fancy function induced in industry. The fan duct and air baffle design are more important to cool the system down and keep system to provide the high performance and user experience to user.

Here providing a simple check mechanism, to easily indicate whether the critical point on fan duct and air baffle in properly seat.

*Disclosed by Steve Huang, Cynthia Chiang and Ying-Chi Chou, HP Inc.*