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A PORTABLE COMBO SOLUTION FOR THERMAL AIR VENTING

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A portable combo solution for the thermal air venting

Abstract:

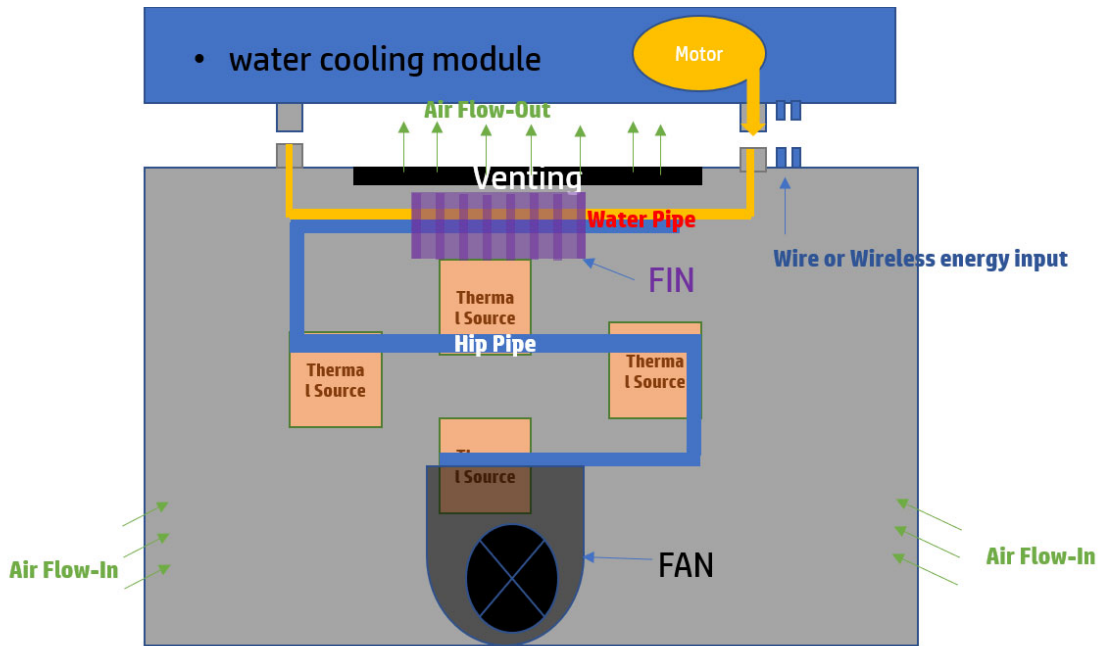
- *Thermal conditions are always one of the limitations for the computing capability of the portable device. Most high-performance electric devices have the thermal concern while long period heavy loading especially for the requirement of the graphic or computing energy. High temperature will impact the product stability and the product reliability. This document will provide a hybrid thermal solution for the portable devices*

Description of Invention:

- *This invention describes a water-cooling solution which combined the water-cooling module and water-cooling embedded components. The water cooling is removeable and user could disassembly for better mobility purpose. The water-cooling embedded components could be designed with the existing air-cooling system*
- *There are several interfaces between the water-cooling module and embedded water-cooling components: (1) Water interface: 2 water interfaces might be required, one for water input, and the other is used for output. (2) Motor: The purpose of the motor is to provide the motivation for the water circulation. The motor could place to the module side or embedded in the system. (3) Electric connection: Electric connection could provide the signal or power to the water-cooling module from the device side. I could provide the power to the motor or other electric components*
- *Water cooling module definition: (1) The main purpose of the water-cooling module is to provide the water for the system. (2) There are both air and water in the water-cooling module (3) The water-cooling module could have a control button to switch to decide the input of the water-cooling module is air or water (4) The control button also decide the motor is working or not*

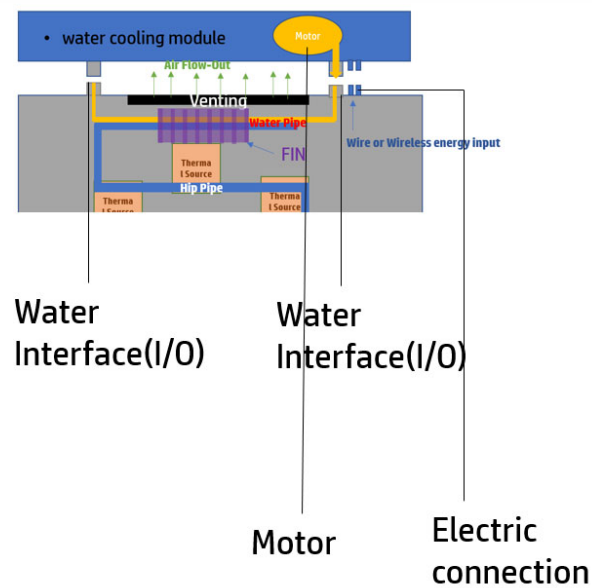
Picture1

ECO system of the water-cooling solution



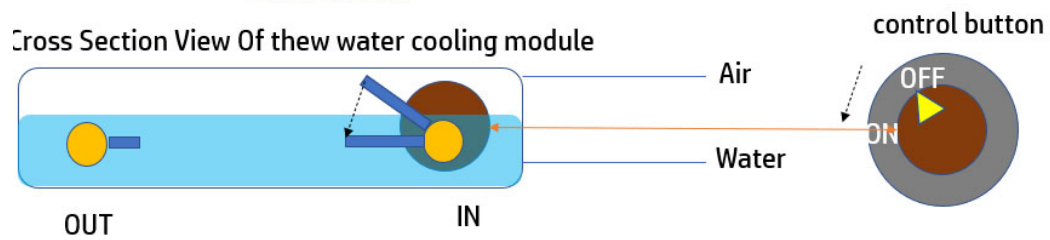
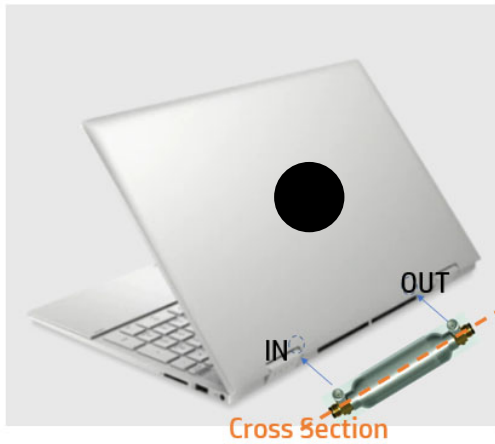
Picture2

Interface of the water-cooling module



Picture3

Cross section view of water-cooling module



Disclosed by Albert Ma, Darren Tsen, Hong-Wei Chou, HP Inc.