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GAO(10) **Pub. No.: US 2022/0369517 A1**(43) **Pub. Date: Nov. 17, 2022**(54) **THERMAL MANAGEMENT PLATE FOR
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H05K 7/20809 (2013.01)(71) Applicant: **Baidu USA LLC**, Sunnyvale, CA (US)

(57)

ABSTRACT(72) Inventor: **TIANYI GAO**, Sunnyvale, CA (US)(21) Appl. No.: **17/319,531**(22) Filed: **May 13, 2021****Publication Classification**(51) **Int. Cl.**
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A cooling plate module includes a first cooling plate layer having a single phase area within and a second cooling plate layer having a phase change area within. The first cooling plate layer includes a first liquid inlet port to receive a first cooling liquid into the single phase area and a first liquid outlet port to expel the first cooling liquid from the single phase area. The second cooling plate layer includes a second liquid inlet port to receive a second cooling liquid into the phase change and a vapor outlet port to expel the second cooling liquid in a vapor state from the phase change area, where the first cooling plate layer is in thermal contact with the second cooling plate layer, and the first cooling plate layer is in thermal contact with IT components to be cooled.

