(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/07/2025

(21) Application No.202511062877 A

(43) Publication Date : 18/07/2025

(54) Title of the invention : A REAL-TIME SERVER LOAD MONITORING DEVICE WITH THERMAL RESPONSE CONTROL

(51) International classification :H05K0007200000, G06F0001200000, G01R0031280000, H01L0023000000, H01L0023525000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a real-time server load monitoring device (100) equipped with current shunts (104), optical utilization probes (106), and MEMS thermistors (108) to monitor electrical and thermal conditions. An edge AI coprocessor (110) predicts thermal spikes and actuates targeted cooling using a fan driver (114) and microfluidic cold plate (116) with valve control (118). The device (100) integrates via a hot-swap connector (130) and communicates through an Ethernet interface (120) for thermal telemetry, enhancing server efficiency and preventing thermal throttling.

No. of Pages : 13 No. of Claims : 5