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(57) Abstract :

The present invention discloses a portable GPU expansion device (102) for high-performance laptop computing (100). It features a PCI e-compatible GPU slot (120), intelligent power supply unit (112), and a hybrid thermal management system (114) with graphene-coated heat sink (115) and dynamic fans (118). A universal interface (108) ensures compatibility via Thunderbolt and USB-C. The device includes an OLED status screen (126) and a foldable chassis (116) for portability, enabling seamless plug-and-play GPU acceleration across various computing environments with efficient heat and power regulation.

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