

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局



(10) 国际公布号
WO 2022/121767 A1

(43) 国际公布日
2022 年 6 月 16 日 (16.06.2022)

(51) 国际专利分类号:
G06F 1/30 (2006.01)

(21) 国际申请号: PCT/CN2021/135033

(22) 国际申请日: 2021 年 12 月 2 日 (02.12.2021)

(25) 申请语言: 中文

(26) 公布语言: 中文

(30) 优先权:
202011418056.0 2020 年 12 月 7 日 (07.12.2020) CN

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(54) Title: VOLTAGE REGULATION METHOD, APPARATUS, DEVICE, AND MEDIUM

(54) 发明名称: 一种调压方法、装置、设备及介质

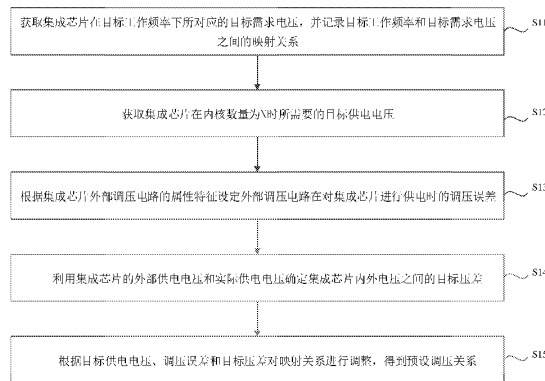


图 1

S11 Obtain target demand voltage corresponding to integrated chip at target operating frequency, and record mapping relationship between target operating frequency and target demand voltage
S12 Obtain target supply voltage required by integrated chip when number of cores is N
S13 According to attribute features of external voltage regulation circuit of integrated circuit, set voltage regulation error of external voltage regulation circuit when supplying power to integrated chip
S14 Use external supply voltage and actual supply voltage of integrated chip to determine target voltage difference between internal and external voltages of integrated chip
S15 Adjust mapping relationship according to target supply voltage, voltage regulation error, and target voltage difference to obtain preset voltage regulation relationship

(57) Abstract: Provided is a voltage regulation method, comprising: obtaining a target demand voltage corresponding to an integrated chip at a target operating frequency, and recording a mapping relationship therebetween; obtaining a target supply voltage required by the integrated chip when the number of cores is N; setting the voltage regulation error of an external voltage regulation circuit when supplying power to the integrated chip, and using the external supply voltage and actual supply voltage of the integrated chip to determine a target voltage difference between the internal and external voltages of the integrated chip; adjusting the mapping relationship

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本国际公布:

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according to the target supply voltage, the voltage regulation error, and the target voltage difference to obtain a preset voltage regulation relationship, and using the preset voltage regulation relationship to adjust the supply voltage of the integrated chip. Clearly, the method takes into account the differences in the manufacturing process of the integrated chip, the voltage regulation error of an external voltage regulation circuit, and the effect of the variation of the number of internal running cores on the supply voltage of the integrated chip, therefore the method can significantly improve the accuracy and reliability when regulating the power supply to an integrated chip.

(57) 摘要: 一种调压方法, 包括: 获取集成芯片在目标工作频率下所对应的目标需求电压, 并记录它们之间的映射关系; 获取集成芯片在内核数量为N时所需要的目标供电电压; 设定外部调压电路在对集成芯片进行供电时的调压误差, 并利用集成芯片的外部供电电压和实际供电电压确定集成芯片内外电压之间的目标压差; 根据目标供电电压、调压误差和目标压差对映射关系进行调整, 得到预设调压关系, 利用预设调压关系对集成芯片的供电电压进行调整。显然, 由于该方法考虑了集成芯片制造工艺的差异、外部调压电路的调压误差以及内部运行内核数量变化对集成芯片供电电压所造成的影响, 所以, 利用该方法就可以显著提高在对集成芯片进行供电调压时的准确性与可靠性。