Title (en)

Electronic device having a part which is subject to temperature dependent deterioration

Title (de)

Elektronische Vorrichtung mit einem Teil mit temperatursabhängiger Verschlechterung

Title (fr)

Dispositif électronique ayant une partie qui est soumise à une détérioration dépendante de la température

Publication

EP 2985755 A1 20160217 (EN)

Application

EP 14180481 A 20140811

Priority

EP 14180481 A 20140811

Abstract (en)

An electronic device (1;100) comprises circuitry (7;101) and a part (5;102) with a deterioration which is dependent on a temperature behaviour of the part in a preceding period means. The device (1;100) further comprises means for deriving (12;103) an estimate of a thermal accumulated deterioration of the part (5;102) caused by the temperature behaviour in the preceding period. The device (1;100) is controlled in dependence on the estimate of the thermal accumulated deterioration, so as to cause that said part deteriorate in a defined manner. The invention is in particular suitable for thin LCD displays (2) in which the backlight is generated by LEDs (5). Due to the thin dimensions the temperature of the LEDs (5) and the solder joint with which the LEDs (5) are fixed to a circuit board in the backlight unit (3,4) can reach high levels which can cause substantial deterioration of the LEDS (5) and solder joints. In case the accumulated deterioration exceeds a reference level (Ref) belonging to the total time (Ttot) that the display device (1) is already in operation, then the average power to the LEDs (5) in the backlight units (3,4) is reduced. So it is achieved that the thermal accumulated damages is kept below the values belonging to the total operation time. In this way it is prevented that the lifespan of the display device (1) is reached too early.

IPC 8 full level

G09G 3/34 (2006.01); G09G 3/20 (2006.01); G09G 3/36 (2006.01)

CPC (source: EP)

G09G 3/3406 (2013.01); G09G 3/20 (2013.01); G09G 3/3611 (2013.01); G09G 2320/041 (2013.01); G09G 2320/048 (2013.01); G09G 2330/021 (2013.01)

Citation (applicant)

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- SCHUBERT, A ET AL.: "Fatigue Life Models of SnAgCu and SnPb Solder Joints Evaluated by Experiments and Simulations", 53RD ECTC, 2003, pages 603 - 610

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Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

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