Title (en)

DIMMING CONTROL OPTIMIZATION SYSTEM

Title (de)

SYSTEM ZUR OPTIMIERUNG DER DIMMUNGSSTEUERUNG

Title (fr)

SYSTÈME D'OPTIMISATION DE COMMANDE DE GRADATION

Publication

EP 3457814 A1 20190320 (EN)

Application

EP 17191257 A 20170915

Priority

EP 17191257 A 20170915

Abstract (en)

A dimming control optimization system includes a light-emitting sampling module, an integrator module, an error amplifying module, a comparator module, a dimming module, and a power supply converting module. The light-emitting sampling module obtains and transmits a brightness signal of an illuminator to the integrator. The integrator module integrates the brightness signal to generate a direct-current (DC) sampling signal. The error amplifying module receives the sampling signal and an external dimming reference voltage to generate an output compensation voltage signal. The comparator module determines if the output signal from the error amplifying module has reached a transitioning threshold and output the compensation voltage of the error amplifying module or a threshold voltage as a control reference signal. The dimming module receives the control reference signal and a finite-peak periodic continuous wave input signal to generate a dimming signal to be sent to the power supply converting module. The power supply transitioning module synchronizes the control reference signal and the dimming signal to allow the dimming control optimization system to control analog dimming of the illuminator for medium and high brightness and to enter into a fixed-frequency digital dimming for low brightness without transition gaps during the transitioning between the two dimming modes.

IPC 8 full level

H05B 44/00 (2022.01); **H05B 37/02** (2006.01)

CPC (source: EP US)

H05B 45/3725 (2020.01 - EP US); **H05B 47/10** (2020.01 - EP US)

Citation (applicant)

- TW I501006 B 20150921 - LG DISPLAY CO LTD [KR]
- TW M359771 U 20090621 - TOP VICTORY INVEST LTD [HK]
- CN 106535412 A 20170322 - GUIZHOU E-CHIP MICROELECTRONICS TECH CO LTD

Citation (search report)

- [A] US 2010019697 A1 20100128 - KORSUNSKY ROMAN [US], et al
- [A] US 2013278145 A1 20131024 - LIN FENG [CN], et al
- [A] US 2016143103 A1 20160519 - KANG WONHYOUNG [KR], et al

Cited by

CN112074046A; CN111741567A; CN114513875A; CN117580212A

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

DOCDB simple family (publication)

EP 3457814 A1 20190320; **EP 3457814 B1 20200722**

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