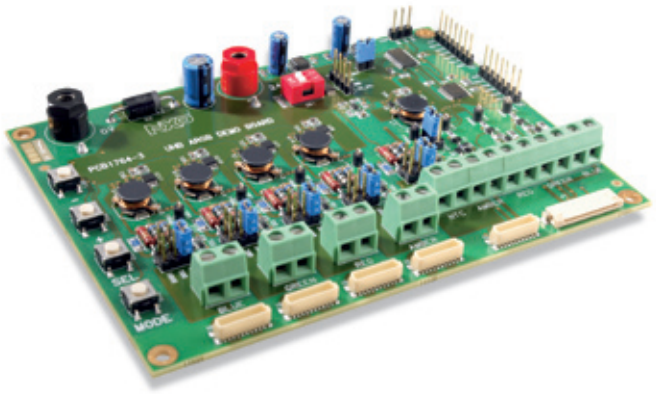


NXP Ultra-high brightness RGBA LED reference design with dimming

Inherent system flexibility for solid-state lighting

NXP's ultra-high brightness RGBA LED driving reference design with dimming puts flexible, low-cost systems at your fingertips. It's a fully tested solution based on robust components and proven technologies that simplifies the design of solid-state lighting (SSL) luminaires.

Key benefits

- Fast creation and evaluation of low-cost solutions
- High system flexibility in terms of number of LEDs and lighting effects (choice of color, color changing, dimming)
- High power (up to 30 W)

Key applications

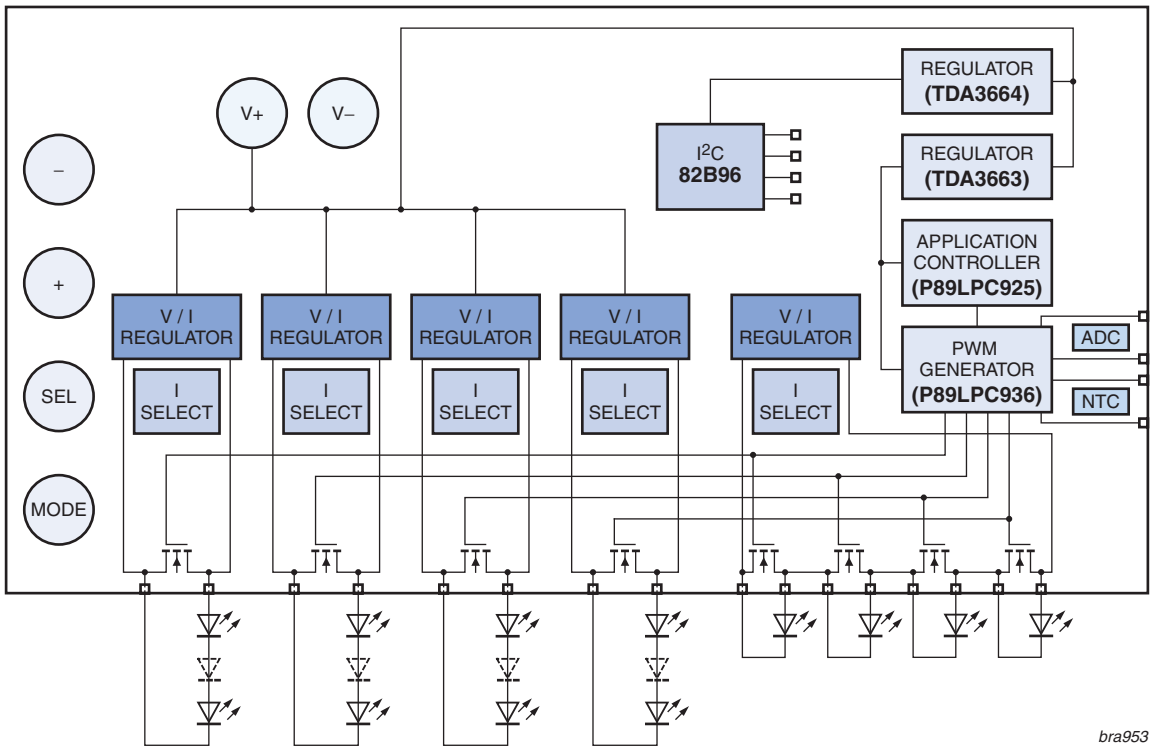
- Decorative lighting
- Entertainment
- Architectural
- Signs
- Spotlights
- LED strings
- Other lighting applications

Our ultra-high brightness RGBA LED driving reference design is ideal for a host of SSL applications. It includes multiple dimmable strings for use in single-color applications and can be used as the basis for color-mixing systems such as those found in entertainment settings and shops.

The board provides all necessary hardware for driving ultra-high brightness RGBA LEDs. Two main configurations are possible: a single string with four bypass switches or four independent strings with their own bypass switch.

The reference design comes complete with demonstration application software. Thanks to the system's microcontroller, you can easily add software functionality for additional applications and advanced features governing lighting quality, such as temperature feed-forward and optical feedback.

NXP founded by Philips



Key components

Application controller – P89LPC925

- High-performance 80C51 processor with 8 Kbytes onboard Flash memory
- Enables customized applications like color mixing, temperature feed forward, color feedback compensation, user interface
- Includes demo applications
  - Auto demonstration
  - Color wash
  - Random color mode
  - User color mode
  - Pure color mode
  - NXP colors
  - White colors temperature mode
  - PC I²C control

Color mixing controller – P89LPC936

- High-performance 80C51 processor
- Four independent PWM generators
- Two 8-bit ADCs for optical/temperature sensor inputs

Five independent constant current sources

- Capable of driving up to 30 W of LED power
- Selectable currents up to 1 A
- Up to 6 LEDs in series per current source

www.nxp.com

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