

# New Programmable RGB LED Driver with AutoBreathe™, Reduces System Size and Simplifies Software Development

*KTD2052B: 12-Channel RGB LED Driver with I2C Control and integral fade-engines*

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/EINPresswire.com/ -- Power management and video/audio interface leader, [Kinetic Technologies](#), is adding to its innovative line of RGB LED drivers with the introduction of the KTD2052B a 12-channel fully programmable current regulator capable of driving up to four RGB LEDs with fewer PCB traces. Packaged in a tiny 8-pin UDFN package, the KTD2052B is 2x smaller than competing products.



“The KTD2052B is ideal for driving up to 4 RGB LEDs in A.I. Speakers, IoT, Gaming Controllers or V.R. Headsets”, says Jia Hu, Kinetic Technologies’ Senior Director of ESIA Product Marketing.

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Senior Director of ESIA  
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“Using multiplexing techniques, the number of PCB traces can be reduced by a factor of 3, significantly reducing the solution size over competing solutions. To help simplify software design and to reduce the burden on system resources, a flexible pattern generator allows set-and-forget autonomous useful patterns. In systems with long boot times, or long periods of inactivity, the RGB LEDs will ‘AutoBreathe’ blue light, showing the user the system is alive”.

Programmed by a 1MHz, I2C serial interface, the KTD2052B has an integrated pattern/animation engine that controls

12 independent current sinks with, in NORMAL-mode, up to 24mA/LED in 125µA steps and in NIGHT-mode, up to 1.5mA/LED in 8µA steps. A 3-bit programmable fade-rate with ultra-smooth 8µA steps is also included. Optimized for the lowest power consumption, the KTD2052B also includes Kinetic's patented BrightExtend™ and CoolExtend™ technologies preserving color balance and the ability to maintain light output at high operating temperatures. In case of LED failure (Shorts, Open, Dropout) additional protection and monitoring functions are included.

Key applications for the new KTD2052B include A.I. Speakers, Bluetooth / WiFi Loudspeakers, automotive indicator and ambiance lighting, IoT, gaming consoles and controllers, toys, indicator / button illumination.

The KTD2052B is available with an alternative I2C address option to double the number of RGBs in a system and is available without AutoBreathe. All options are shipping now.

[Visit Kinetic Technologies](#) for more information.

Product features include:

- 2.5V to 5.5V Operating Supply Voltage Range
- Drives up to 12 LEDs (4 RGBs)
- Multiplexed LED Current Driver Outputs
  - o Only 4 PCB Traces to the LEDs
  - o 0.8kHz MUX Frequency Prevents Audio Noise
- 14 Million Colors
  - o LED Current: 125µA to 24mA in 125µA Steps
  - o Night-Mode: 8µA to 1.5mA in 8µA Steps
  - o 5% Max. Current Accuracy & Matching
- 2 Independent Exponential Fade-Engines
  - o Ultra-Smooth 3072-Step (8µA) Fade Resolution
  - o 3-bit Programmable Fade-Rate
- Flexible Pattern Generator with Watchdog Counter
- AutoBreathe Mode (KTD2052B/D)
- Patented BrightExtend Technology
  - o Maintains Color-Accuracy and PSRR for Battery-Powered Applications with Low Vin
- Proprietary CoolExtend Technology
  - o 2-bit Programmable Maximum Die-Temp
- 0.6µA Automatic Shutdown (Standby) Current
- 1MHz I2C Serial Interface with alternative I2C Addresses
- Pb free, RoHS and Green Compliant 8-pin UDFN 2x2mm (0.5mm pitch) package
- -40°C to +85°C Operating Temperature Range

About Kinetic Technologies

Kinetic Technologies designs, develops and markets proprietary high-performance analog and

mixed-signal power and protection semiconductors across consumer, communications, industrial, automotive and enterprise markets, to deliver protected solutions tolerant of real-world fault conditions. The company's product sit "Behind Every Port™", deliver solutions to not only provide, protect, regulate, and monitor power consumed by analog and digital semiconductors and other electronic loads, but to also switch, transform and protect high resolution video, audio and data signals. Kinetic Technologies develops application-specific products that solve audio-video interface, protection, and power management needs across smartphones, tablets and wearables, as well as serving a wide range of industrial, automotive and enterprise solutions. Kinetic Technologies, a Cayman Corporation, has R&D centers in Silicon Valley and Asia, with operations and logistics based in Asia. For more information, please visit <http://www.kinet-ic.com/>.

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