



Buck and Boost LED Driver DC-to-DC Switching Regulators

Analog Devices, Inc., has introduced several families of highly efficient and reliable switching regulators with optimized levels of functional integration that maximize the power conversion and consumption in performance-driven applications. These products range from three-phase controllers to fully-integrated controller, driver, and FET devices. Features such as margining and tracking have been integrated into several product variants to enhance the monitoring and control capabilities of the overall system.



Features ▶

- Wide input voltage range (1V-24V)
- Step-up and step-down through variety of topologies
- Online design tools provide fast and robust solutions
- Synchronous converters for high efficiency

Benefits ▶

- Higher efficiency over LDOs
- Fully-integrated regulators for quick design
- Reduced part count
- Reduced BOM cost
- Integrated advanced features

Applications ▶

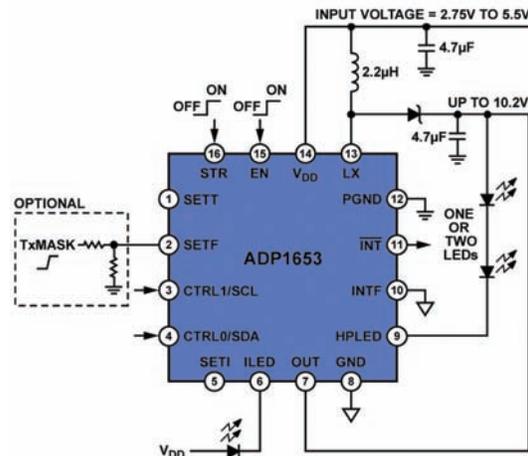
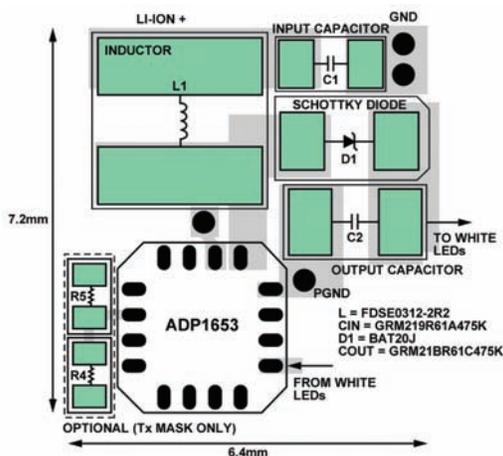
- Mobile handsets
- Set-top boxes
- Telecommunications and networking systems
- DDR terminations
- Hard disk drives

Product Specifications ▶

Part Number	Type	Dimming Type	Number of LEDs/String	Number of Strings	Configuration	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Peak Efficiency (%)	Diagnostic Capabilities	Interface	Markets
ADP1610	Step-up, SEPIC	-	3	-	Series	2.5-5.5	Adj. 1.23-12/20	300-1,000	-	None	-	CL FL BL
ADP1612		-	5	1	Series	1.8-6	1.3-20	300-1,000	95	None	-	CL FL BL
ADP1621	Step-up, flyback, SEPIC	-	20	-	Series	3-5.5	Adj. 1.215-80	10,000	-	None	-	FL BL
ADP1821	Step-down w/margining and tracking, flyback	-	15	-	Series	1-24	Adj. 0.6-60	25,000	-	None	-	CL FL TR BL
ADP1822	Step-down, flyback	-	15	-	Series	1-24	Adj. 0.6-60	25,000	-	None	-	CL FL TR BL
ADP1829	Dual step-down, flyback	-	15/15	-	Series	1-24	Adj. 0.6-60	25,000	-	None	-	FL TR BL
ADP1864	Step-down, invert, flyback	-	15	-	Series	3.15-14	Adj. 0.6-60	10,000	-	None	-	FL TR BL
ADP2102	Step-down	-	1	-	Series	2.7-5.5	Adj. 0.8-3.3	600	-	None	-	FL BL
ADP2105/ADP2106/ADP2107		-	1	-	Series	2.7-5.5	Adj. 0.8-V _{IN}	2,000	-	None	-	CL FL BL
ADP1828	Step-down, flyback	-	15	-	Series	1-24	Adj. 0.6-60	25,000	-	None	-	FL BL
ADP1653	Step-up	Digital	2	-	Series	2.7-5.5	10.5	500	92	None	I ² C or 2-bit logic	FL

MARKETS LEGEND

CL COMMERCIAL LIGHTING FL FLASHLIGHTS TR TRANSPORTATION BL BACKLIGHTING SD SIGNAGE



Flash LED Driver, LED, and Backlighting LED Drivers

The ADP1653 is an ultra-compact, high efficiency, 12V boost converter from Analog Devices, specifically designed and optimized for use in cellular camera phones and digital still cameras. The ADP1653 solution consumes a mere 7.2 mm x 6.4 mm of board space while still offering high-efficiency Flash circuitry that can drive one string of high-brightness LEDs up to 500 mA, as well as a separate indicator LED at lower currents up to 17 mA.

Analog Devices offers LED drivers for automotive and LCD backlighting applications. Products like the AD8240, designed for automotive applications, both drive and monitor the LED assembly. End users are demanding bigger, brighter, and thinner displays. The ADM8845 and ADM8843 charge-pump-based backlight drivers are designed for driving up to six and four white LEDs in parallel, respectively, while ensuring uniform brightness of a backlit LCD display. By individually monitoring each LED current, excellent matching performance is achieved. The ADM8845 is also designed to maximize power efficiency by switching automatically between three charge pump modes based on the input voltage. For applications with severe height restrictions, the ADM8843 offers an ultra-thin package height of 0.5 mm.



Features ▶

- Small 45 mm² total solution size
- 92 percent efficiency
- 90 lumens of brightness
- Tx masking with 50 μs
- 2.2 μH power inductor
- 500 mA Flash current

Benefits ▶

- Reduces bill of materials
- Extends battery life
- Improves picture quality
- Enables smaller form factors

Applications ▶

- Digital still cameras
- Camera phones
- Portable video recorders

Product Specifications ▶

Part Number	Type	Dimming Type	Number of LEDs/String	Number of Strings	Configuration	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Peak Efficiency (%)	Diagnostic Capabilities*	Interface	Markets
AD8240	-	PMW	Variable	-	Serial/parallel	9-27	12	Adjustable	-	Yes	Analog	CL TR BL
ADM8843	-	PMW	4 WLED	-	Parallel	2.6-5.5	2X mode	30	88	TSD/SCP	Pin controlled	FL BL
ADM8845	-	PMW	6 WLED	-	Parallel	2.6-5.5	X mode	30	88	TSD/SCP	Pin controlled	FL BL
ADP5520	Inductive boost	Current modulation	6	1	Serial	2.7-5.5	26	30	85	Yes	I ² C	BL

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*Diagnostic capabilities: TSD: Thermal shutdown, SCP: Short circuit protection





Short-Range Transceivers for Wireless Connectivity

The ADF7000 series of transmitter and transceiver ICs provides high-performance, robust short-range wireless connections. Covering the 75 MHz to 1 GHz frequency range, the ADF7000 series is ideally suited for many applications requiring short-range wireless connectivity. The popular ADIsmLINK™ air-interface protocol allows users to transfer data between multiple end points and a base station (ADF702x) without having to develop their own protocol software. In addition to this, ADI SRD Design Studio™ allows real time simulation and optimization of many of the parameters in a typical wireless system.



Features ▶

- Frequency range from 75 MHz to 1 GHz operation
- Best in class Rx sensitivity
- Data rates up to 384 kbps
- Complete hardware and software tools: ADIsmLINK™, ADI SRD Design Studio™

Benefits ▶

- Wide frequency range
- Extended RF range
- Rapid system development
- Robust short-range wireless connections
- Real time simulation and optimization

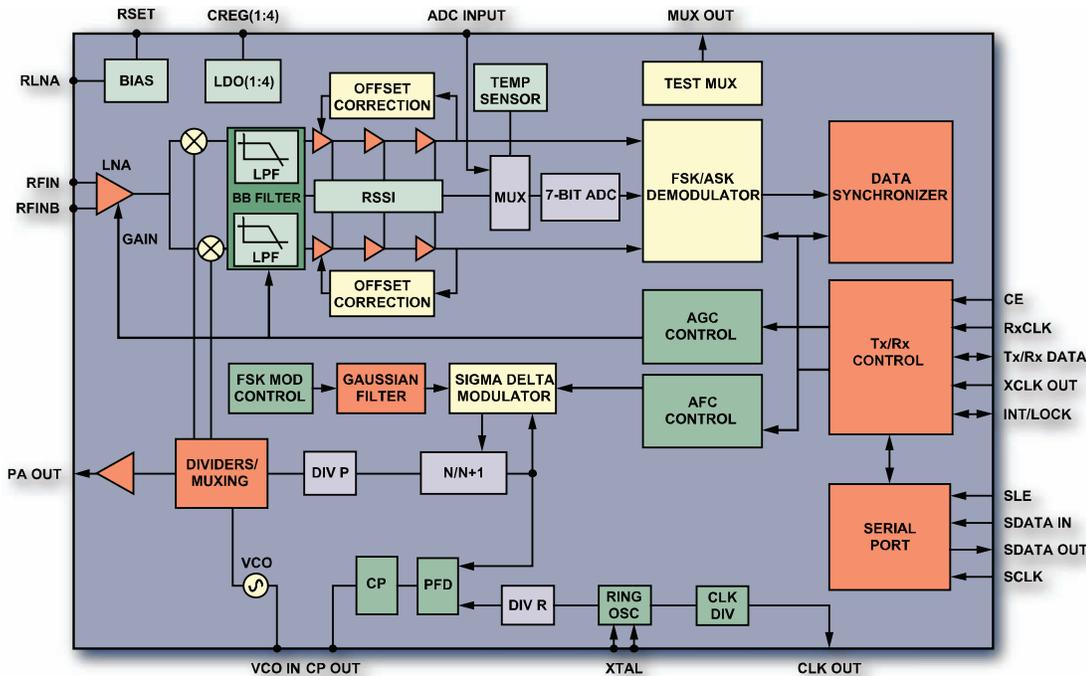
Applications ▶

- Home/building control and automation
- Lighting control
- Wireless metering
- Home security
- Industrial sensors
- Healthcare monitoring
- TV wireless remote control

Product Specifications ▶									
Part Number	Type	Input Voltage (V)	Over Air Data Rate (kbps)	Data Throughput (kbps)	Frequency (Hz)	Power Consumption (mA)	Range (Meters)	System Resources (KB)	Markets
ADF7012	RF transmitter	2.3-3.6 supply	179.2	179.2	75 MHz-1 GHz	55 mW typ.	>1,000	-	CL FL BL SI
ADF7020	RF transceiver	2.3-3.6 supply	200	200	431 MHz-478 MHz/862 MHz-956 MHz	60 mW typ.	>1,000	-	CL FL BL SI
ADF7020-1		2.3-3.6 supply	200	200	80 MHz-650 MHz	55 mW typ.	>1,000	-	CL FL BL SI
ADF7021		2.3-3.6 supply	24	32.5	80 MHz-650 MHz/868 MHz-940 MHz	58 mW typ.	>1,000	-	CL FL BL SI
ADF7021-N		2.3-3.6 supply	24	32.5	80 MHz-650 MHz/868 MHz-940 MHz	58 mW typ.	>1,000	-	CL FL BL SI

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ADF7020 block diagram

