Sine On™

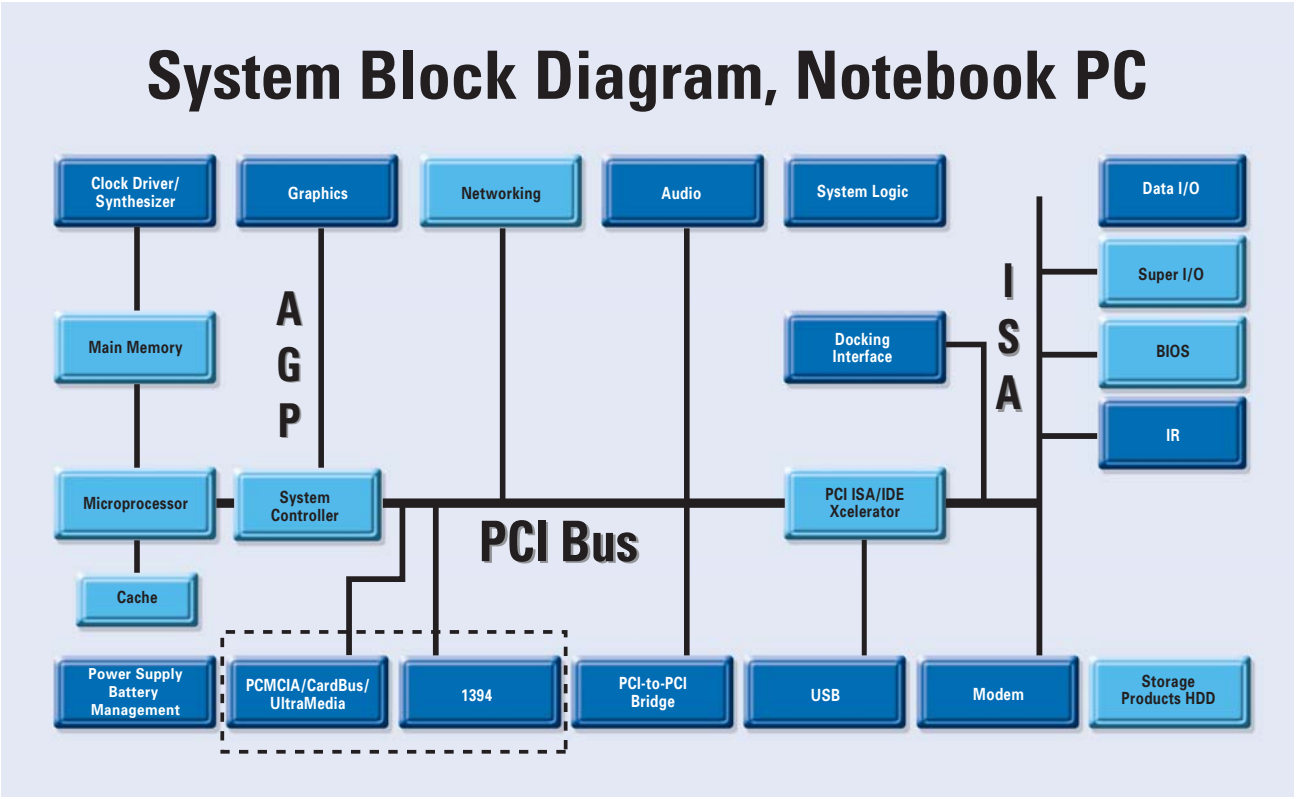
An Analog Product Catalog

2Q 2003

Notebook PC Products

System

System Block Diagram, Notebook PC



TI Worldwide Technical Support

Internet

TI Semiconductor Product Information Center Home Page
support.ti.com

TI Semiconductor KnowledgeBase Home Page
support.ti.com/sc/knowledgebase

Product Information Centers

Americas

Phone	+1(972) 644-5580
Fax	+1(972) 927-6377
Internet/Email	support.ti.com/sc/pic/americas.htm

Europe, Middle East, and Africa

Phone	
Belgium (English)	+32 (0) 27 45 55 32
Finland (English)	+358 (0) 9 25173948
France	+33 (0) 1 30 70 11 64
Germany	+49 (0) 8161 80 33 11
Israel (English)	1800 949 0107
Italy	800 79 11 37
Netherlands (English)	+31 (0) 546 87 95 45
Spain	+34 902 35 40 28
Sweden (English)	+46 (0) 8587 555 22
United Kingdom	+44 (0) 1604 66 33 99
Fax	+(49) (0) 8161 80 2045
Email	epic@ti.com
Internet	support.ti.com/sc/pic/euro.htm

Japan

Fax	
International	+81-3-3344-5317
Domestic	0120-81-0036
Internet/Email	
International	support.ti.com/sc/pic/japan.htm
Domestic	www.tij.co.jp/pic

Asia

Phone	
International	+886-2-23786800
Domestic	Toll-Free Number
Australia	1-800-999-084
China	108-00-886-0015
Hong Kong	800-96-5941
Indonesia	001-803-8861-1006
Korea	080-551-2804
Malaysia	1-800-80-3973
New Zealand	0800-446-934
Philippines	1-800-765-7404
Singapore	800-886-1028
Taiwan	0800-006800
Thailand	001-800-886-0010
Fax	886-2-2378-6808
Email	tiasia@ti.com
Internet	support.ti.com/sc/pic/asia.htm

Connectivity

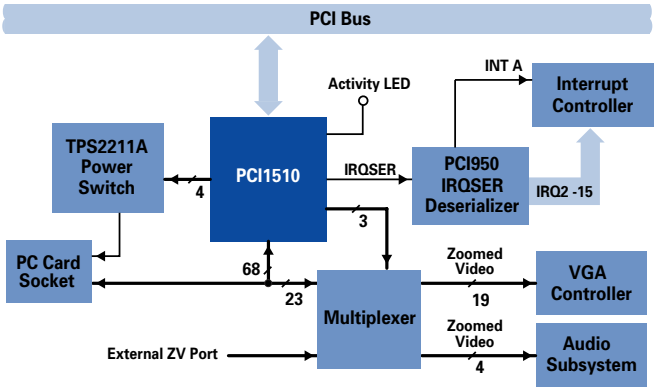
Ultra-low-power, high-performance PCI-to-CardBus controller

PCI1510/PCI1520

Get datasheets and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with pci1510 or pci1520

The PCI1510, a single-slot CardBus controller, bridges PCI and PC cards in both notebook and desktop computers. The PCI1520 is a dual-slot version of the same device. Designed to meet the PCI Bus power management interface specification for PCI-to-CardBus bridges, the PCI1510 is an ultra-low power, high-performance PCI-to-CardBus controller that supports a single PC card socket compliant with the PC Card Standard (rev. 7.2). The PCI1510/1520 support both 16-bit and CardBus PC cards powered at 5-V or 3.3-V, as required.

- 2.5-V core logic and 3.3-V I/O with universal PCI interfaces compatible with 3.3-V and 5-V PCI signaling environments
- Integrated low-dropout voltage regulator (LDO-VR) eliminates the need for an external 2.5-V power supply
- Mix-and-match 5-V/3.3-V 16-bit PC cards and 3.3-V CardBus Cards
- A single PC Card or CardBus slot (PCI1510) or two PC Card or CardBus slots (PCI1520) with hot insertion and removal
- PCI1510: A 144-pin low-profile QFP (PGE) or 144-pin MicroStar BGA™ (GGU) package
- PCI1520: A 208-pin low-profile QFP (PDV) or 209-pin MicroStar BGA™ (GHK) package
- PCI1520 pin-compatible to PCI1620



NOTE: The PC Card interface is 68 terminals for CardBus and 16-bit PC Cards. In ZV mode, 23 terminals are used for routing the ZV signals to the VGA controller and audio subsystem.

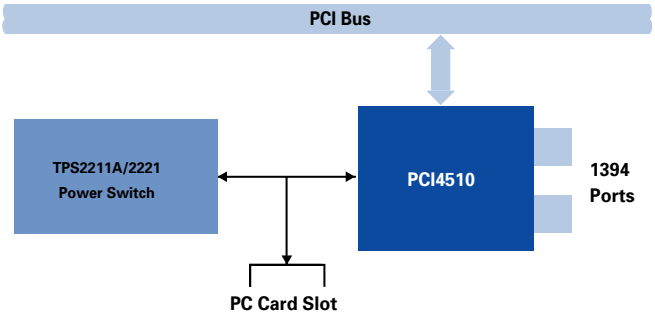
CardBus and FireWire™ controllers integrated in a single device

PCI4510/PCI4520

Get datasheets, samples and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with pci4510 or pci4520

The PCI4510 controller provides full CardBus and IEEE 1394a (FireWire™) functionality in a single package. The device integrates a single-slot CardBus controller, a 1394 OHCI 1.1 link layer controller, and a two-port, 400-Mbps 1394a physical layer. The PCI4520 integrates the same 1394 physical and link layers as the PCI4510 with a dual-slot CardBus controller. The PCI4510/20 controllers are designed for low power consumption, with core logic operating at 1.8-V and I/O functions at 3.3-V. Universal PCI interfaces are compatible with both 3.3- and 5-V signaling environments.

- Compliant with PC Card Standard 8.0, PCI Bus Power Management Interface Spec 1.1, Advanced Configuration and Power Interface Spec 2.0, and PCI Local Bus Spec Rev. 2.2
- 1.8-V core logic and 3.3-V I/O cells with internal voltage regulator to generate 1.8-V core V_{cc}
- Supports PC card or CardBus with hot insertion and removal
- PCI4510: A 208-pin low-profile QFP (PDV) or 209-pin MicroStar BGA™ (GHK) package
- PCI4520: A 257-pin MicroStar BGA™ (GHK)
- PCI4510: pin-compatible to PCI7x10



Connectivity

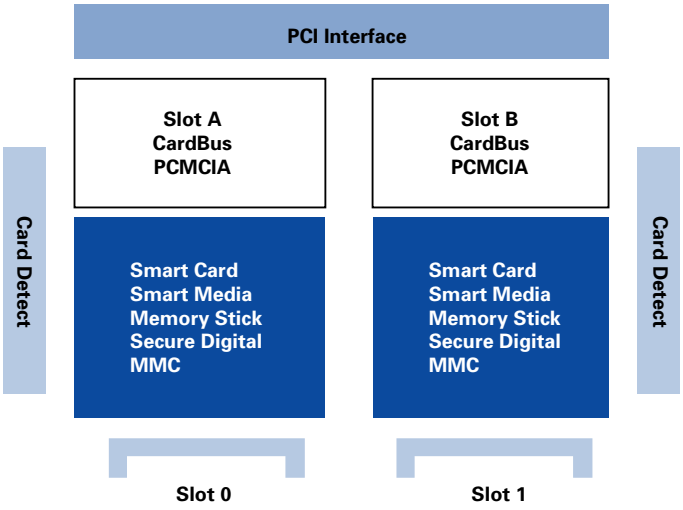
Dual-slot PC Card, UltraMedia™ and Smart Card controller

PCI1620

Get datasheets, samples and app reports at:
www.ti.com/sc/device/pci1620

The PCI1620 is an integrated dual-socket PC Card, Flash Media and Smart Card controller. The device supports a 4-in-1 passive adapter for Flash Media, as well as a passive adapter for Smart Card.

- PC Card Standard 8.0 compliant
- PCI Bus Power Management Interface Specification 1.1-compliant
- PCI Local Bus Specification Revision 2.2-compliant
- Flash Media support through CB slot 0 and slot 1
- PC/SC, EMV support for Smart Card through CB slot 0 and slot 1
- Package is 209-pin MicroStar BGA™ and 208-pin LQFP
- PCI1620 pin compatible to PCI1520



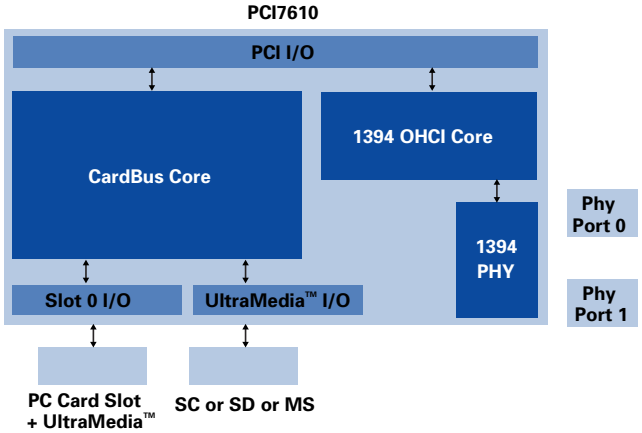
PC Card, UltraMedia™, Smart Card, and FireWire™ controller

PCI7x10 CardBus Controller

Get datasheets, samples and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with pci7410, pci7510 or pci7610

The PCI7x10 CardBus controllers are four-function, 33-MHz PCI devices compliant with PCI Local Bus Specification 2.2. Supporting any combination of 16-bit and CardBus cards, and powered at 5-V or 3.3-V as required, the PCI7x10 provides a PC card socket controller compliant with the latest PC card standards. UltraMedia™ offers an easy way to use multiple flash memory cards and Smart Cards in mobile PCs with a simple, low-cost passive adapter. The PCI7x10 supports a 4-in-1 or standalone adapter for Smart Media, Memory Stick, MMC/SD, or Smart Card. TI firmware allows updating at any time quickly and easily.

- Packages include MicroStar BGA™ and LQFP
- PCI7410 CardBus & Flash Media & 1394
  - Flash Media support through 4-in-1 passive adapter
  - Dedicated Flash Media slot for Secure Digital, MMC, or Memory Stick
- PCI7510 CardBus, Smart Card & 1394
  - Dedicated Smart Card slot that is PC/SC- and EMV-compliant
- PCI7610 CardBus, UltraMedia™ & 1394
  - UltraMedia™ support through 4-in-1 passive adapter and Smart Card adapter
  - Dedicated UltraMedia™ slot for Smart Card, Secure Digital, MMC, or Memory Stick
- PCI7x10 pin compatible to PCI4510



Connectivity

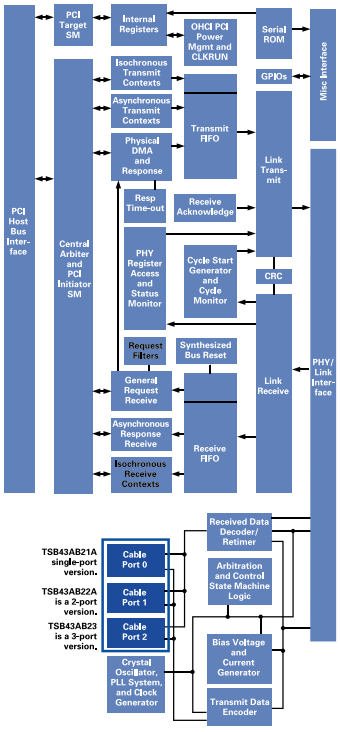
Lowest power 1394a PHY/link-layer controllers

TSB43AB21A/TSB43AB22A/TSB43AB23

Get datasheets and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with tsb43ab21a, tsb43ab22a or tsb43ab23

The TSB43AB21A (1 port), TSB43AB22A (2 port) and TSB43AB23 (3 port) are the smallest integrated PHY/link-layer controller devices available with up to 67% reduction in power over existing, competing solutions.

- Fully compliant with:
  - 1394 Open Host Controller Interface specification (Release 1.1), IEEE Std 1394a-2000 and IEEE Std-1995 for High-performance Serial Bus
  - Fully interoperable with FireWire™ and i.LINK™ implementations of IEEE Std 1394
- Speed: Up to 400 Mbps
- 9-K FIFO
- Single 3.3-V supply (1.8-V internal core voltage with regulator)
- Ultra-low-power sleep mode: 4.0 mW in D3 low-power state
- 128-lead TQFP (PDT) package; 144-lead LQFP(PGE) package is also available for TSB43AB23
- Fabricated in advanced low-power CMOS process



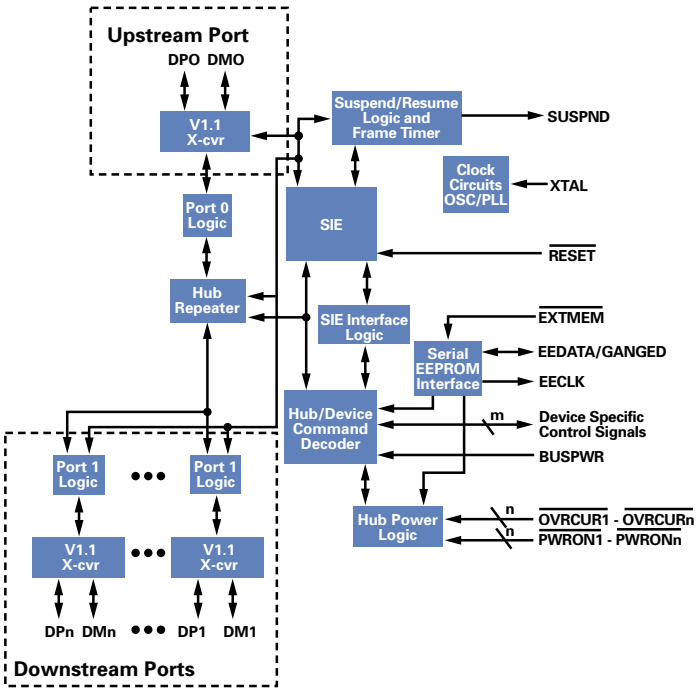
USB hub controller with optional serial EEPROM interface

TUSB2036

Get datasheets and app reports at:
www.ti.com/sc/device/tusb2036

The TUSB2036 hub is a USB version 1.1 compliant 3.3-V CMOS device with an optional serial EEPROM interface. The TUSB2036 can be configured as either a two-port hub or a three-port hub. This feature enables more effective Windows Hardware Qualification Laboratory (WHQL) certification when less than four additional ports are required in a given application.

- USB 1.1(full-speed) compliant
- Pin-selectable configuration for 2 or 3 ports
- Self- and bus-powered support
- USB suspend/resume operation support
- Custom VID and PID with external serial EEPROM
- ESD filtering for babble, overcurrent, reset, bus-powered inputs
- 32-pin LQFP; 3.3-V supply



Connectivity

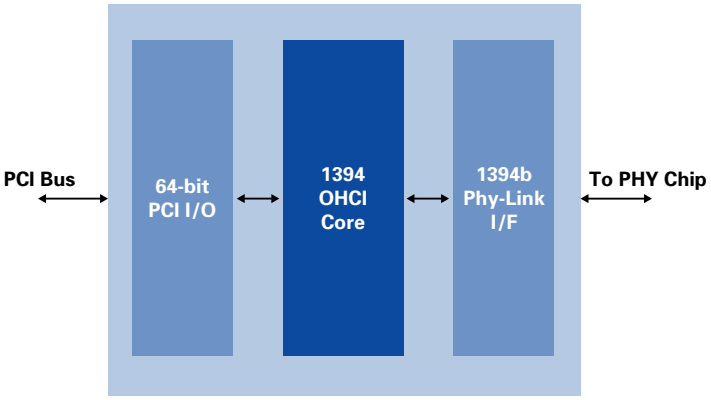
High-performance 1394b 3.3-V OHCI 1.1+ compliant link layer controller

TSB82AA2

Get datasheets, samples, EVMs and app reports at:
www.ti.com/sc/device/tsb82aa2

The TSB82AA2 (OHCI-Lynx™) is a discrete 1394b link-layer device designed to meet the demanding requirements of today's 1394 bus designs. The TSB82AA2 is capable of exceptional 800-Mbps performance, providing the throughput and bandwidth to move data efficiently and quickly between the PCI and 1394 buses.

- Fully compliant with PCI Local Bus Specification 2.3, PCI Bus Power Management Interface Specification 1.1, IEEE Std 1394b, IEEE Std 1394a-2000, and 1394 Open Host Controller Interface Specification 1.1+
- Single 3.3-V supply (1.8-V internal core voltage with regulator)
- Serial bus data rates of 100-Mbps, 200-Mbps, 400-Mbps, and 800-Mbps
- 33-MHz/64-bit and 33-MHz/32-bit selectable PCI interface
- Digital video and audio performance enhancements
- Fabricated in advanced low-power CMOS process
- Packaged in 144-pin LQFP (PGE)



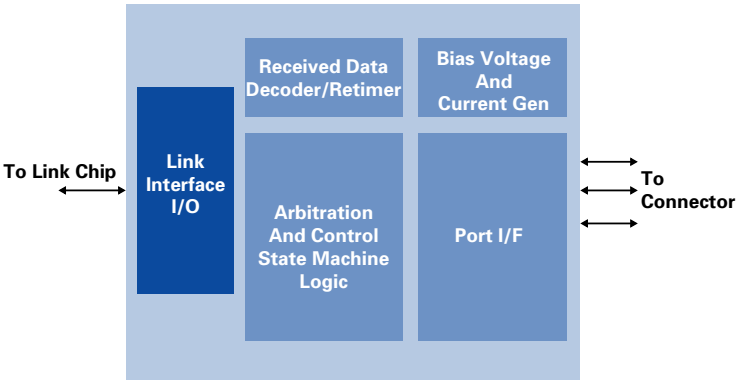
IEEE 1394b s800 three-port cable transceiver/arbiter PHY

TSB81BA3

Get datasheets and app reports at:
www.ti.com/sc/device/tsb81ba3

The TSB81BA3 is a 1394b-compliant physical layer device capable of speeds up to 800 Mbps. It provides the digital and analog transceiver functions needed to implement a three-port node in a cable-based IEEE 1394 network. Each cable port incorporates two differential line transceivers.

- Compliant with 1394b
- Support 3-port bilingual, 1394b (beta) mode at s400 and s800, 1394a (DS) mode at s100, s200, and s400
- 1394b parallel and 1394a I/F
- 3.3 V single supply or external selectable dual supply (3.3 V and 1.8 V)
- Complete power-down pin disables all but toning
- Low-cost, high-performance 80-pin TQFP (PFP) thermally enhanced package



Power Management

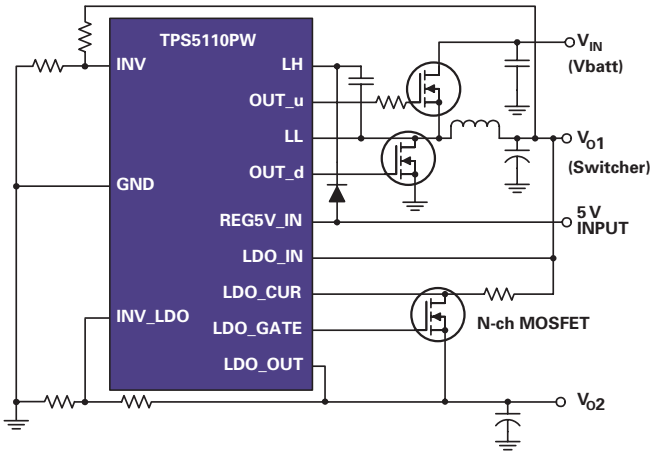
Synchronous buck PWM controller with NMOS LDO controller

TPS5110

Get datasheets, samples and app reports at:
www.ti.com/sc/device/tps5110

The TPS5110 provides one PWM-mode synchronous buck regulator controller (SBRC) and one low dropout (LDO) regulator controller. The TPS5110 supports a low-voltage/high-current power supply for I/O and other peripherals in modern digital systems. The SBRC of the TPS5110 automatically adjusts from PWM mode to SKIP mode to maintain high efficiency under all load conditions. The LDO controller drives an external N-channel power MOSFET that realizes fast response and ultra-low dropout voltage.

- Switching mode step-down DC-to-DC controller with fast LDO controller
- Input voltage range
  - Switcher: 4.5 V to 28 V
  - LDO: 1.1 V to 3.6 V
- Output voltage range
  - Switcher: Down to 0.9 V
  - LDO: Down to 0.9 V
- Synchronous for high efficiency
- Precision V_{REF} (±1%)
- PWM mode control: Max. 500-kHz operation
- High-speed error amplifier
- Overcurrent protection with temperature compensation circuit
- Overvoltage and undervoltage protection
- Programmable short-circuit protection
- 24-pin TSSOP package



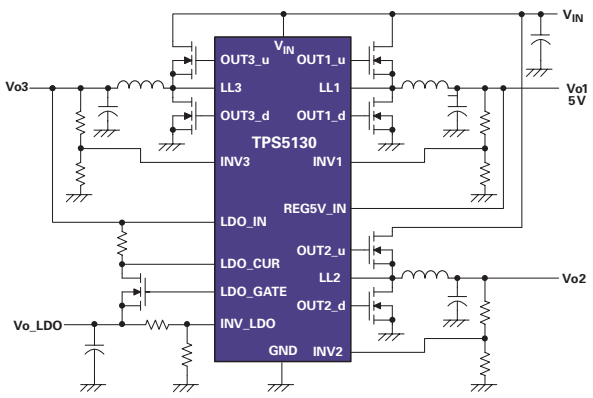
Triple synchronous buck controller with LDO controller

TPS5130

Get datasheets, samples and app reports at:
www.ti.com/sc/device/tps5130

The TPS5130 is composed of three independent synchronous buck regulator controllers. (SBRC) and one low dropout (LDO) regulator controller. On-chip high-side and low-side synchronous rectifier drivers are integrated to drive less expensive N-channel MOSFETs. The LDO controller can also drive an external N-channel MOSFET. The input current ripple is minimized by operating 180 degrees out of phase, allowing a smaller input capacitance resulting in reduced power supply cost.

- Three independent step-down DC-DC controllers and one LDO controller
- Input voltage range
  - Switcher: 4.5 V ~ 28 V
  - LDO: 1.1 V ~ 3.6 V
- Output voltage range
  - Switcher: Down to 0.9 V
  - LDO: Down to 0.9 V
- Synchronous for high efficiency
- Precision V_{REF} (±1.5%)
- PWM mode control: Max. 500 kHz operation
- Auto PWM/SKIP mode available
- High-speed error amplifier
- Over current protection with temperature compensation circuit for each channel
- Overvoltage and undervoltage protection
- Programmable short-circuit protection
- Power good with programmable delay time
- 5-V and 3.3-V linear regulators
- 48-pin LQFP package



Power Management

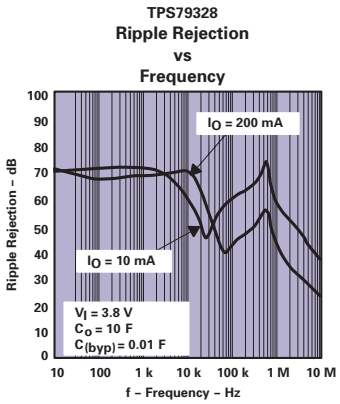
High-performance LDO for audio codec and high input voltage

TPS79301/TPS71501

Get datasheets, samples, EVMs and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with tps79301 or tps71501

TPS79301

- 200-mA low dropout regulator (LDO) with EN
- Available in 1.8-V, 2.5-V, 2.8-V, 2.85-V, 3-V, 3.3-V, 4.75-V, and adjustable
- High PSRR (70 dB at 10 kHz)
- Ultralow noise (32 µV)
- Fast start-up time (50 µs)
- Stable with a 2.2-µF ceramic capacitor
- Excellent load/line transient
- Very low dropout voltage (112 mV at full load, TPS79330)
- SOT-23-5 package



TPS71501

- 50-mA low dropout regulator (LDO)
- Available in 2.5 V, 3.0 V, 3.3 V, 5.0 V, and adjustable
- 24-V maximum input voltage
- Low 3.2 µA quiescent current at 50 mA
- 5-pin SC70/SOT-323 (DCK) package
- Stable with any capacitor (>0.47 µF)
- Over-current limitation
- -40°C to 125°C operating junction temperature range

Available Options

Part Number	Voltage	Package	T_J
TPS71501DCKR	(Adjustable) 1.2-15 V	SC70/SOT-323 (DCK)	-40°C to 125°C
TPS71525DCKR	2.5 V		
TPS71530DCKR	3.0 V		
TPS71533DCKR	3.3 V		
TPS71550DCKR	5.0 V		

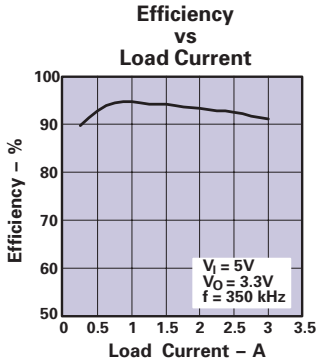
3A synchronous buck converter with integrated MOSFET

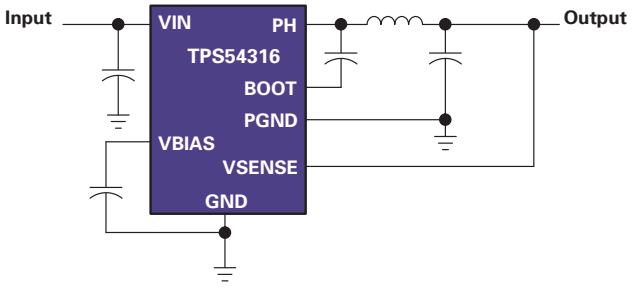
TPS54310

Get datasheets, samples, EVMs and app reports at:
www.ti.com/sc/device/tps54310

The TPS54310 low-input-voltage, high-output-current, synchronous-buck PWM converter integrates all required active components. Included on the substrate with the listed features is a true, high-performance, voltage error amplifier that provides high-performance under transient conditions.

- 60-mΩ MOSFET switches for high efficiency at 3-A continuous output source or sink current
- 0.9-V to 3.3-V adjustable output voltage with 1% accuracy
- Externally compensated for design flexibility
- Fast transient response
- Wide PWM frequency: Fixed 350 kHz, 550 kHz, or adjustable 280 kHz to 700 kHz
- Load protected by peak current limit and thermal shutdown
- Integrated solution reduces board area and total cost
- 20-pin TSSOP package





Power Management

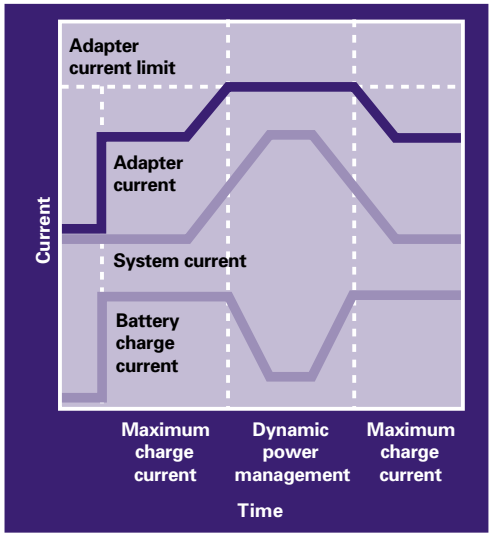
Battery charge controller and selector with DPM

bq24700/bq24701 bq24702/bq24703 PREVIEW

Get datasheets, samples, EVMs and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with bq24700, bq24701, bq24702 or bq24703

The bq2470x is a highly integrated battery charge controller and selector tailored for notebook and sub-notebook PC applications. The bq2470x uses Dynamic Power Management™ (DPM) to minimize battery charge time by maximizing use of available wall-adapter power. This is achieved by dynamically adjusting the battery charge current based on the total system (adapter) current.

- Dynamic power management, DPM, minimizes battery charge time
- Integrated selector supports battery conditioning and smart battery learn cycle
- Selector feedback circuit insures break-before-make transition
- ±0.4% charge voltage accuracy, suitable for charging Li-Ion cells
- ±4% charge current accuracy
- 300-kHz integrated PWM controller for high-efficiency buck regulation
- Depleted battery detection and indication to protect battery from over-discharge
- 15-µA sleep mode current for low battery drain
- Designed for charge management of NiCd/NiMH and Li-Ion/Li-Pol battery packs
- 24-pin TSSOP package



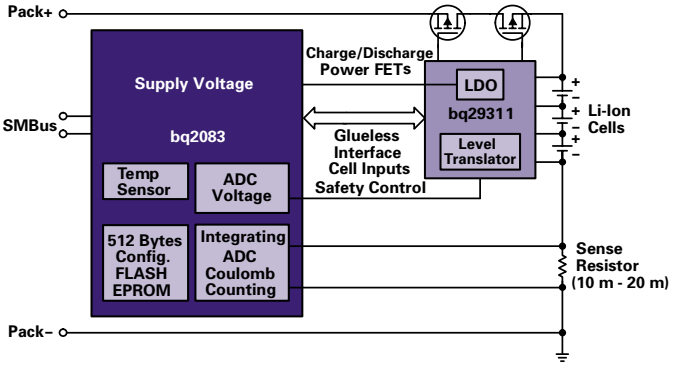
SBS compliant gas gauge IC for Li-Ion battery packs

bq2083

Get datasheets, samples, EVMs and app reports at:
www.ti.com/sc/device/bq2083

The bq2083 SBS-compliant gas gauge IC for battery pack or in-system installation maintains an accurate record of available charge in Li-Ion or Li-Polymer batteries. The bq2083 monitors capacity and other critical parameters of the battery pack and reports the information to the system host controller over a serial communication bus.

- Provides accurate measurement of available charge in Li-Ion and Li-Polymer batteries
- Supports the smart battery specification (SBS) V1.1
- Works with the TI bq29311 analog front end protection IC to provide complete pack electronics for 10.8-V or 14.4-V battery packs with few external components
- Based on a powerful, low-power RISC CPU core with high-performance peripherals
- Integrated flash memory eliminates the need for external configuration EEPROM
- Measures charge flow using a high-resolution 16-bit integrating converter
  - Better than 3-nVh of resolution
  - Self-calibrating
  - Offset error less than 1-µV
- Uses 16-bit delta sigma converter for accurate voltage and temperature measurements
- Programmable cell modeling for maximum battery fuel gauge accuracy
- Drives 3-, 4-, or 5-segment LED display for remaining capacity indication
- 38-pin TSSOP (DBT) package



Power Management

2-slot CardBus power-interface switches for serial/parallel PCMCIA controllers

TPS2206A/TPS2228 TPS2223A/24A/26A/TPS2205

Get datasheets, samples and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with tps2206a, tps2228a, tps2223a, tps2224a, tps2226a or tps2205

The TPS2223A, TPS2224A, and TPS2226A CardBus power-interface switches provide an integrated power-management solution for two PC Card sockets. These devices allow the controlled distribution of 3.3 V, 5 V and 12 V to each card slot.

- Fast current limit response time
- Fully integrated V_{cc} and V_{pp} switching for 3.3 V, 5 V, and 12 V (no 12 V on TPS2223A)
- Meets current PC Card standards
- TPS2206A V_{pp} output selection independent of V_{cc}
- 12-V and 5-V supplies can be disabled
- TTL-logic compatible inputs
- Short-circuit and thermal protection
- Break-before-make switching
- Power-on reset
- -40°C to 85°C operating ambient temperature range
- 24-pin HTSSOP, 24- or 30-pin SSOP package

Device Name	3 V $r_{DS(on)}$ Typ (mOhm)	5 V $r_{DS(on)}$ Typ (mOhm)	Supports 12 V	Supports 1.8 V	Interface	Pin/Package
TPS2205	110	140	Yes	No	Parallel	32 HTSSOP 30 SSOP
TPS2206A	85	95	Yes	No	Serial	30 SSOP
TPS2223A	85	95	Yes	No	Serial	24 HTSSOP 24 SSOP
TPS2224A	85	95	Yes	No	Serial	24 HTSSOP 24 SSOP
TPS2226A	85	95	Yes	No	Serial	30 SSOP
TPS2228	72	97	No	Yes	Serial	24 HTSSOP 30 SSOP

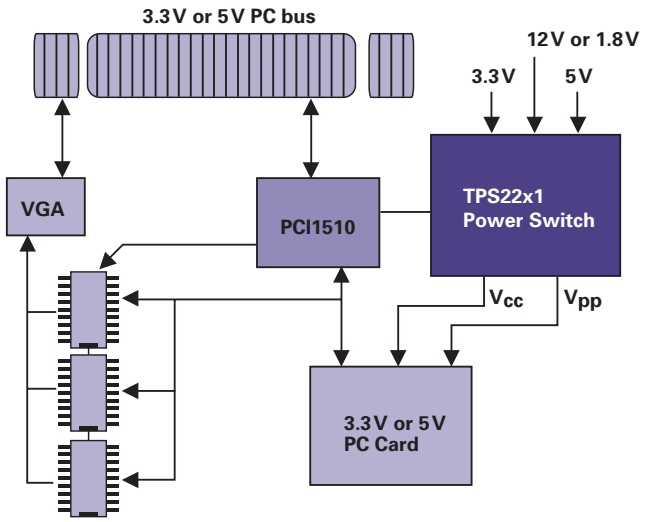
1A single-slot PC Card power switch w/parallel interface

TPS2221/TPS2211A

Get datasheets and samples at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with tps2221 or tps2211a

The TPS2221 is a single-slot power interface switch for parallel PCMCIA controllers. This power interface switch supports the distribution of 3.3 V, 5 V, and 1.8 V to the PC card slot while providing current-limiting protection with overcurrent reporting.

- Fully integrated V_{cc} and V_{pp} switching for single-slot PC Card interface
- Low $r_{DS(on)}$ (70-mΩ 5-V V_{cc} switch and 3.3-V V_{cc} switch)
- Compatible with industry-standard controllers
- 3.3-V low-voltage mode
- Meets PC Card standards
- 12-V supply can be disabled except during 12-V flash programming (no 12 V on TPS2221, but supports 1.8-V)
- Short-circuit and thermal protection
- Space-saving 16-pin SSOP (DB) and 20-pin HTSSOP (PWP)
- Compatible with 3.3-V, 5-V, and 12-V PC Cards
- Break-before-make switching
- 16-pin SSOP (DB) and 20-pin HTSSOP (PWP) package



Power Management

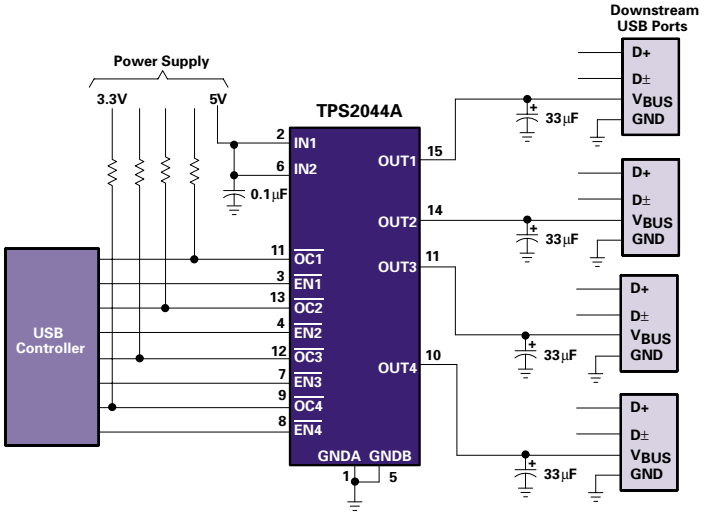
USB current-limited power switches

TPS204xA

Get datasheets, samples, EVMs and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with tps204xa

The TPS2041A through TPS2044A and TPS2051A through TPS2054A power-distribution switches are intended for applications where heavy capacitive loads and short circuits are likely to be encountered. These devices incorporate 80-mΩ N-channel MOSFET high-side power switches for power-distribution systems that require multiple power switches in a single package.

- 80-mW high-side MOSFET switch
- 500 mA continuous current per channel
- Independent thermal and short-circuit protection with overcurrent logic output
- Operating range: 2.7 V to 5.5 V
- CMOS- and TTL-compatible enable inputs
- 2.5-ms typical rise time
- Undervoltage lockout
- 10 µA maximum standby supply current for single and dual (20 µA for triple and quad)
- Bidirectional switch
- Ambient temperature range 0°C to 85°C
- ESD protection
- Packaging: 8-pin SOIC (TPS2041A/51A/42A/52A)
  16-pin SOIC (TPS2043A/53A/44A/54A)



Single, current-limited, 33-mΩ switch IC (no fault reporting)

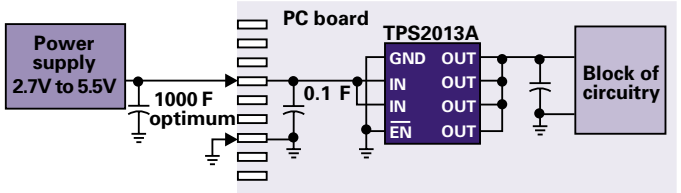
TPS201xA

Get datasheets and samples at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with tps201xa

The TPS201xA family of power distribution switches is intended for applications where heavy capacitive loads and short circuits are likely to be encountered. These devices are 33-mΩ (5-V Input) N-channel MOSFET high-side power switches. The switch is controlled by a logic enable compatible with 5-V logic and 3-V logic.

- Short-circuit and thermal protection with an over-current logic output
- Operating range: 2.7 V to 5.5 V
- Logic-level enable input
- Controlled switch rise time (6.1 ms) reduces inrush current, making devices suitable for use in hot-swap applications
- Under voltage lockout
- No drain-to-source back-gate diode, eliminating potential current flow back across device to inputs
- Human-body-model (2 kV) and machine-model (200 V) ESD protection
- 8-pin SOIC and 14-pin TSSOP package

Active-low Enable	Current Limit (A) (min)
TPS2010A	0.22
TPS2011A	0.66
TPS2012A	1.1
TPS2013A	1.65



Audio Power Amplifiers

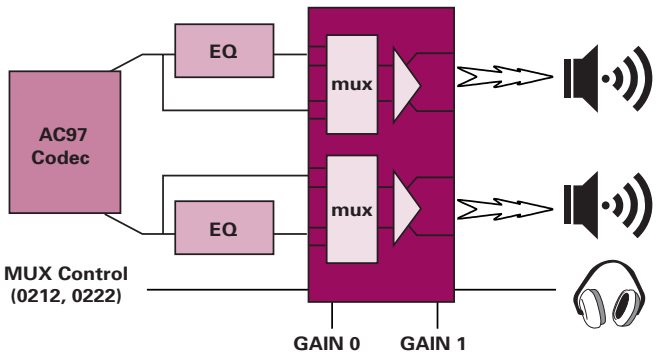
Stereo 2-W audio power amp with 4 selectable gain settings and MUX control

TPA0212/TPA0312/TPA6017A2

Get datasheets, samples, EVMs and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with tpa0212, tpa0312 or tpa6017a2

The TPA0212, TPA0312 and TPA6017A2 are stereo audio amplifiers capable of delivering 2 W of continuous RMS power per channel into 3-Ω loads. These devices minimize the number of external components needed, simplifying the design and freeing up board space for other features. When driving 1 W into 8-Ω speakers, the TPA0312 has less than 0.8% THD+N across its specified frequency range.

- Compatible with PC 99 desktop line-out into 10-kΩ load (no headphone driver on TPA6017A2)
- Internal gain control, which eliminates external gain-setting resistors
- 2-W/Ch output power into 3-Ω load
- Input MUX select terminal
- PC-beep input
- Depop circuitry
- Stereo input MUX
- Fully differential input
- Low supply current and shutdown current
- 24-pin / 20-pin TSSOP PowerPAD™ package



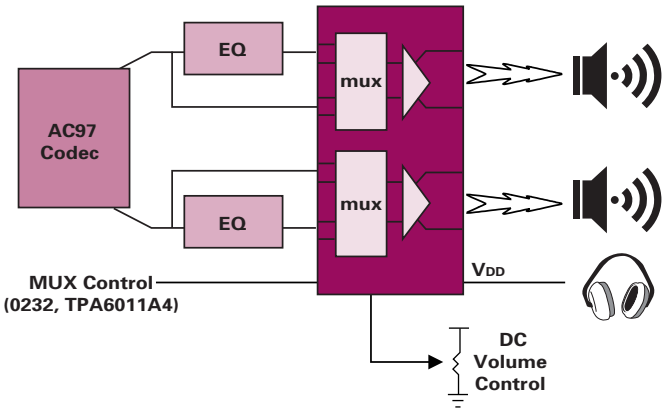
2-W stereo audio power amplifier with advanced DC volume control

TPA6011A4/TPA0232

Get datasheets, samples, EVMs and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with tpa6011a4 or tpa0232

The TPA6011A4 is a stereo audio power amplifier that drives 2 W/channel of continuous RMS power into a 3-Ω load. Advanced DC volume control minimizes external components and allows BTL (speaker) volume control and SE (headphone) volume control. Notebook and pocket PCs benefit from the integrated feature set that minimizes external components without sacrificing functionality.

- Compatible with PC 99 desktop line-out into 10-kΩ load
- Compatible with PC 99 portable into 8-Ω load
- 2-W/Ch output power into 3-Ω load
- Advanced DC volume control with 2-dB steps from -40 dB to 20 dB
  1. Fade mode
  2. Maximum volume setting for SE mode
  3. Adjustable SE volume control referenced to BTL volume control input MUX select terminal
- PC-beep input
- Depop circuitry
- Stereo input MUX
- Fully differential input
- Low supply current and shutdown current
- 24-pin TSSOP PowerPAD™ package



Audio Power Amplifiers

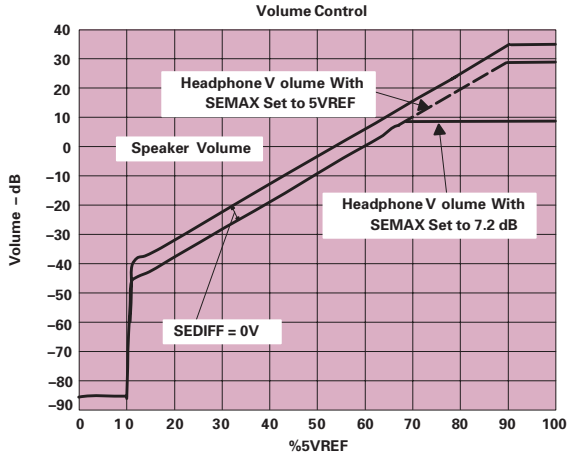
3-W stereo audio power amplifier with advanced DC volume control

TPA6030A4

Get datasheets, samples and app reports at:
www.ti.com/sc/device/tpa6030a4

The TPA6030A4 is designed to drive 3 W into 16-Ω speakers using a surface-mount package without the need for an external heatsink. These features make it ideal for 15"-17" LCD monitors, small multimedia speakers, and notebook computers.

- 5 to 15 V operation
- 3-W into 16-Ω from 12-V supply
- DC volume control for speakers (BTL) and headphones (SE)
- 5 to 15-V operation
- Differential inputs
- Depop circuitry
- Input MUX
- Headphone drive
- 1-µA shutdown current
- 28-pin TSSOP surface-mount PowerPAD™ package



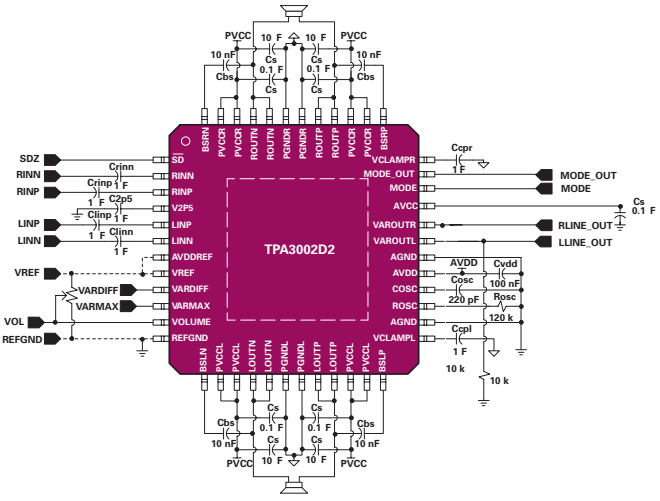
9-W stereo Class-D audio power amp with DC volume control

TPA3002D2

Get datasheets, samples, EVMs and app reports at:
www.ti.com/sc/device/tpa3002d2

The TPA3002D2 is a 9-W (per channel) efficient, Class-D audio amplifier for driving bridged-tied stereo speakers. The TPA3002D2 can drive stereo speakers as low as 8-Ω. The high efficiency of the TPA3002D2 eliminates the need for external heatsinks.

- 9-W/Ch into an 8-Ω load from 12-V supply
- Efficient, Class-D operation eliminates heatsinks and reduces power supply requirements
- 32-step DC volume control from -40 dB to 36 dB
- Line outputs for external headphone amplifier with volume control
- Regulated 5-V supply output for powering TPA6110A2
- Thermal and short-circuit protection
- Space-saving, thermally-enhanced PowerPAD™ packaging
- 48-pin TQFP PowerPAD™ package



Digital Equalizer

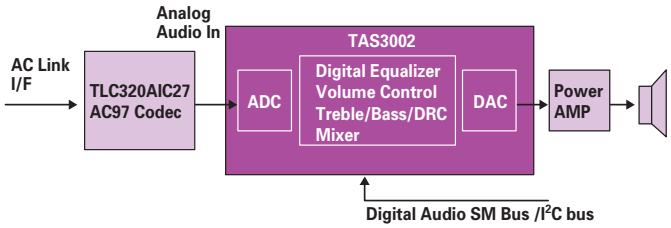
Digital audio processor with Codec

TAS3002/TAS3004

Get samples, datasheets and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with tas3002 or tas3004

The TAS3004 is a system-on-a-chip that replaces conventional analog equalization to perform digital parametric equalization, dynamic range compression and loudness contour. Additionally, this device provides high-quality, soft digital volume, bass and treble control. All control parameters are uploaded through the I^2C port from an outside MCU through the I^2C slave port or from an external EPROM through the I^2C master port.

- Programmable seven-band parametric equalization
- Programmable digital volume control
- Programmable digital bass and treble control
- Programmable dynamic range compression/expansion (DRCE)
- Programmable loudness contour/dynamic bass control
- Configurable serial port for audio data
- Two input data channels that can be mixed with digital data from the analog-to-digital converter (ADC) of the Codec (analog input), these are controlled by I^2C commands
- Available in 48-pin PQFP package



Digital Video

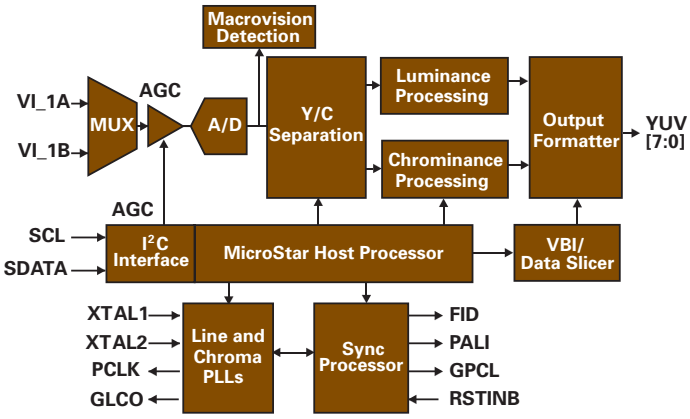
Low-power composite s-video decoder

TVP5150

Get samples, datasheets and EVMs at:
www.ti.com/sc/device/tvp5150

The TVP5150 is a highly integrated, low-power video processor with full video decoding functionality. The optimized architecture of the TVP5150 allows for very low power consumption. The TVP5150 utilizes TI's patented technology for locking to weak, noisy, or unstable signals; and a chroma frequency control output is generated for synchronizing downstream video encoders.

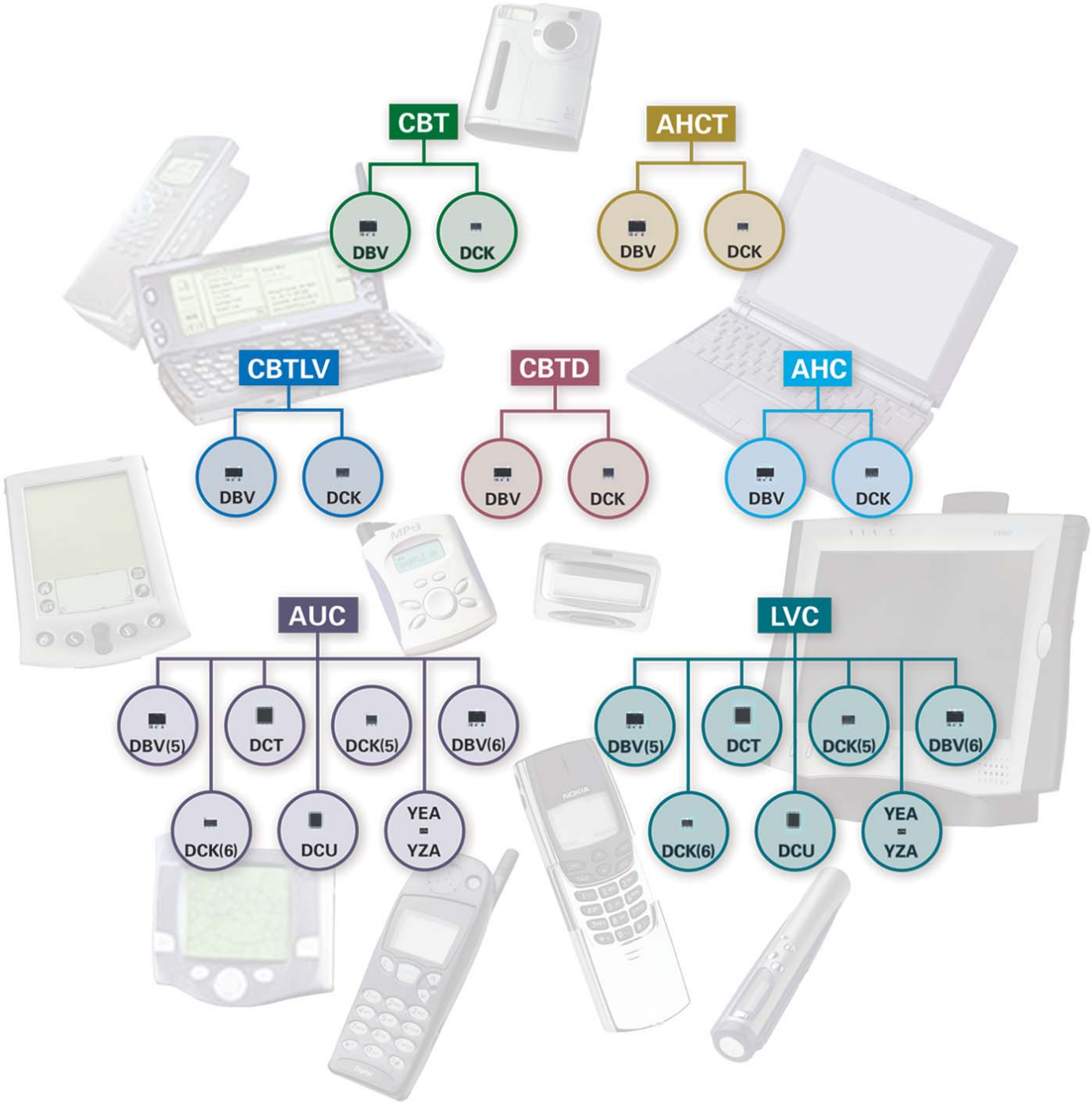
- Two analog inputs
- ADCs: 1 x 9-bit 30 MHz
- Input formats: Composite, S-video
- Input standards: NTSC, NTSC443, PAL-BDGHIMN
- Y/C separation: Adaptive 4-line complementary comb filter
- Output formats: 8-bit 4:2:2 and 8-bit ITU 656
- Operating voltage: 1.8 V, 1.8- or 3.3-V I/O
- 32-pin TQFP package



**The TVP5150 is in the product preview stage of development. Expected availability is 1Q 2003.*

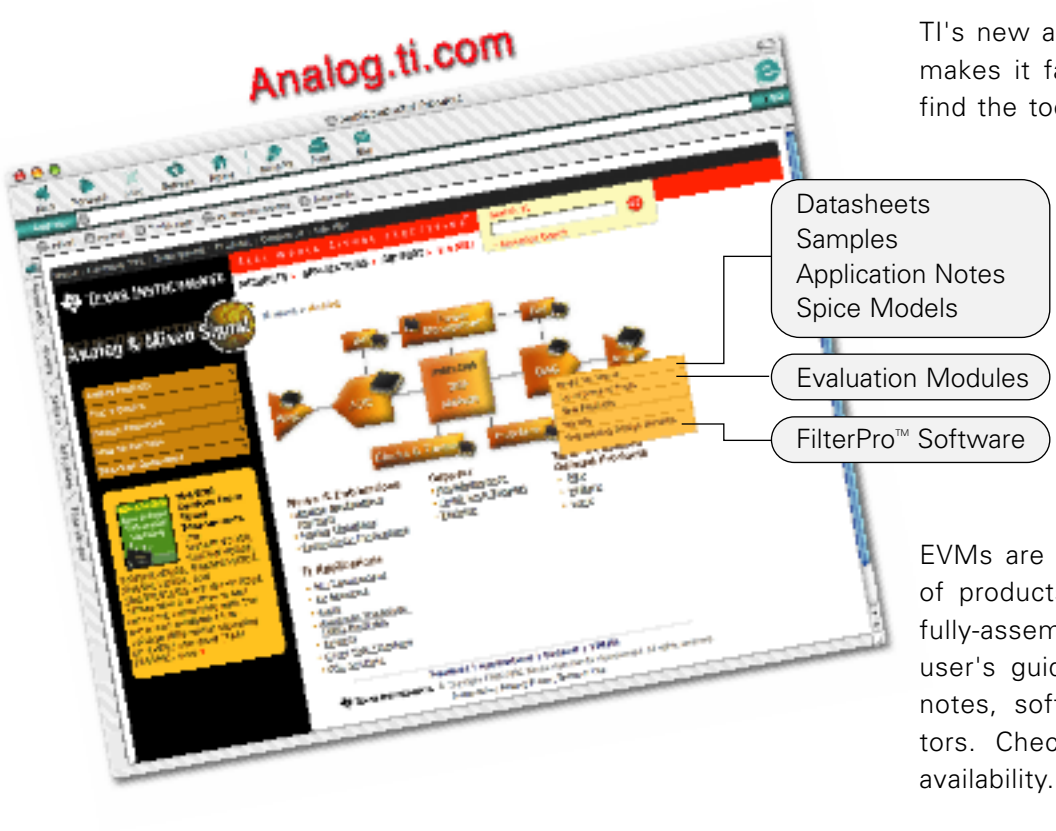
Logic

Little logic selection guide



http://logic.ti.com

Navigate Our Website Faster to Find the Tools You Need



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EVMs are available for a wide variety of products. They are complete with fully-assembled board, data sheet and user's guide. Some may include app notes, software, cables and connectors. Check the product folders for availability.

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