便携式多媒体点唱机，有时也被称为音频/视频点唱机，便携式媒体播放器或便携式视频播放器，为消费类和 消费类电子制造厂商提供了具有巨大利益的市场。这些器件都是基于硬盘驱动器的，能够存储几个小时的内容，为当今忙碌生活的人们提供娱乐。尽管这些产品的相 关市场还很小，但是,它的市场潜力却是很大的。

便携式媒体组成器件为：
TS5V330/TS3V330：视频开关
SN74AVCXT245/74LVCXT245： 双电源电平转换器
SN74LV4320A：CompactFlash 接口收发器
TLV320AIC32/TLV320AIC31：低功 耗、立体声音频编解码器
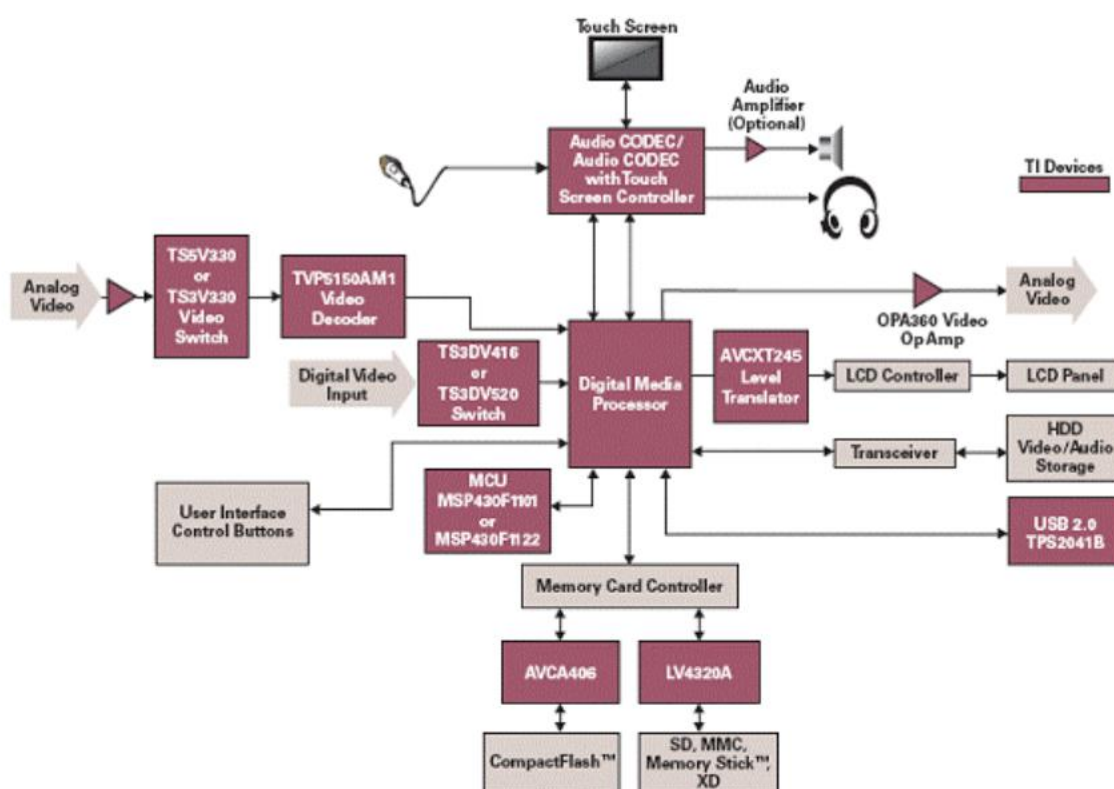PCM3792A：低功耗、立体声音频编解码器
TSC2100/TSC2102: High-Performance "Smart" Touch- Screen Controllers w/ Integrated Low-Power Audio Converters
TSC2100/TSC2102：集成了低功耗音频转换器　高性能"智能"触摸屏控制器
TSC2301/TSC2302：集成了低功耗音频转换器　高性能"智能"触摸屏控制器
SN74AVCA406/SN74AVCA406L: MMC, SD, Memory Stick, SmartMedia 和 xD-Picture Card 收发器

下图为便携式多功能数字媒体设备方框图

下面对各个元器件的性能和方框图进行描述：

Video switches in the TS switch product family provide low differential gain and phase, making these switches ideal for composite and RGB
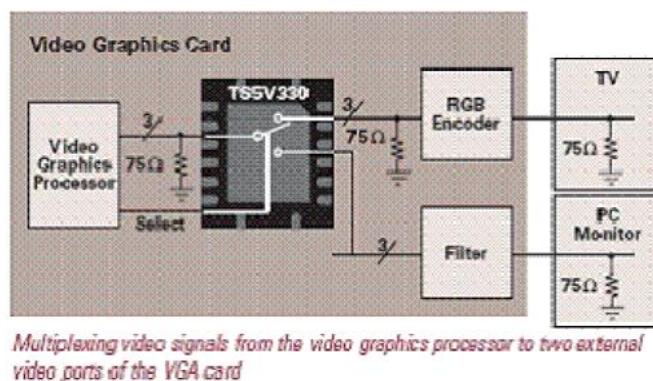
video applications. TS video switches also offer the wide bandwidth and low crosstalk required to support high-frequency video applications.

Key Features

*Low differential gain and phase (3-V DG = 0.82%, DP = 0.1 degrees typ) (5-V DG = 0.64%, DP = 0.1 degrees typ)
*Wide bandwidth (BW = 300 MHz min)
*Low crosstalk (3-V XTALK = −80 dB typ) (5-V XTALK = −63 dB typ)
*Low-power consumption (ICC = 3 A max)
*Bidirectional data flow, with near-zero propagation delay
*Low ON-state resistance (ron = 3 typ)
*Rail-to-rail switching on data I/O ports (0 to VCC)
*Ioff supports partial-power-down mode operation
*Suitable for both RGB and composite-video switching

Applications

*Composite and RGB video

Multiplexing video signals from the video graphics processor to two external video ports of the VGA card
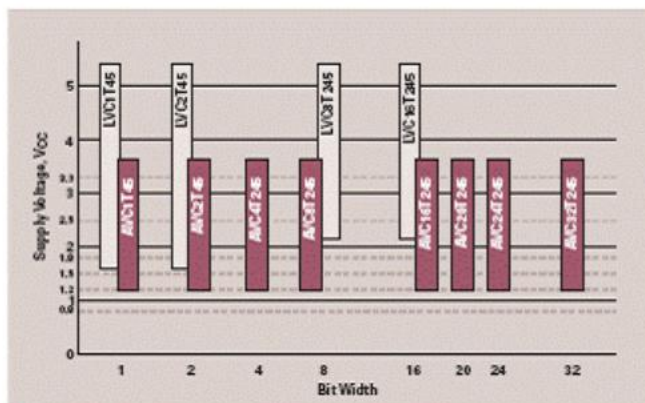
多路视频信号从视频处理器到 VGA 卡两个外接视频端口

Dual-supply level shifters are the ideal solution for bidirectional level translation. These devices have two separate VCC supplies, one for each port (VCCA and VCCB), which gives them flexibility to operate in mixed-mode applications. These dual-supply devices allow for bidirectional level translation between different voltage nodes from 1.2 V to 3.6 V and 1.65 V to 5.5 V. TI also offers a wide range of bit-width options.

TI's Dual-Supply Level-Translation Portfolio

Device	Bit Width	V$_{CCA}$ (V)	V$_{CCB}$ (V)	Smallest Package
SN74AVC1T45[1]	1	1.2 to 3.6	1.2 to 3.6	6-pin NanoStar™/NanoFree™
SN74LVC1T45	1	1.65 to 5.5	1.65 to 5.5	8-pin NanoStar/NanoFree
SN74AVC2T45[1]	2	1.2 to 3.6	1.2 to 3.6	8-pin NanoStar/NanoFree
SN74LVC2T45	2	1.65 to 5.5	1.65 to 5.5	8-pin NanoStar/NanoFree
SN74AVC4T245[1]	4	1.2 to 3.6	1.2 to 3.6	16-pin QFN
SN74AVC8T245[1]	8	1.2 to 3.6	1.2 to 3.6	24-pin QFN
SN74LVC4245A	8	4.5 to 5.5	2.7 to 3.3	24-pin TSSOP
SN74LVC8T245[1]	8	1.65 to 5.5	1.65 to 5.5	24-pin QFN
SN74LVCC3245A	8	2.3 to 3.3	2.7 to 5.5	24-pin TSSOP
SN74LVCC4245A	8	4.5 to 5.5	2.7 to 3.3	24-pin TSSOP
SN74AVC16T245[1]	16	1.2 to 3.6	1.2 to 3.6	56-ball VFBGA
SN74ALVC164245	16	2.3 to 3.6	3.0 to 5.5	56-ball VFBGA
SN74AVCA164245[1]	16	1.4 to 3.6	1.4 to 3.6	56-ball VFBGA
SN74AVCB164245[1]	16	1.4 to 3.6	1.4 to 3.6	56-ball VFBGA
SN74LVC16T245[1]	16	1.65 to 5.5	1.65 to 5.5	56-ball VFBGA
SN74AVC20T245[1]	20	1.2 to 3.6	1.2 to 3.6	56-ball VFBGA
SN74AVC24T245[1]	24	1.2 to 3.6	1.2 to 3.6	83-ball LFBGA
SN74AVC32T245[1]	32	1.2 to 3.6	1.2 to 3.6	96-ball LFBGA
SN74AVCB324245[1]	32	1.2 to 3.6	1.2 to 3.6	96-ball LFBGA

[1] Bus-hold option available.

Extended family of dual-supply level-translation devices

扩展系列双电源电平转换设备

This CompactFlash (CF) interface chip is designed to provide a singlechip solution for CF card interfaces. Separate VCC rails for the system bus side and the CF connector bus side allow voltage-level shifting.This is helpful for interfacing between a core chipset, which may operate
from 3.3 V down to 1.65 V, and CF cards with 3.3-V or 5-V supply voltages.
Key Features
*Level translation supports both 3.3- and 5-V CompactFlash cards
*High degree of integration
*Schmidt-trigger inputs for CompactFlash control signals
*Ioff and /MASTER_EN (shutdown) pin
*Internal decode logic for direction control (DIR)

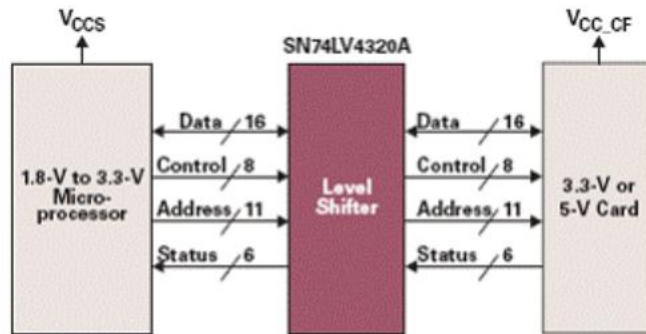*Robust ESD protection (+8-kV HBM) on card pins
Applications
*PDAs
*Handheld scanners
*Set-top boxes
*Network equipment

SN74LV4320A typical application diagram

SN74LV4320A 典型应用示意图]

The TLV320AIC32/TLV320AIC31 are highly integrated, low-power stereo CODECs for use in a variety of portable audio equipment. The TLV320AIC32 includes six single-ended analog inputs. The TLV320AIC31 includes two single-ended analog inputs and two differential analog inputs. Both CODECs have six output drivers. They also include two line output drivers and four high-power amplifiers that can be configured as stereo headphone drivers or stereo speaker drivers.
Key Features
*Stereo DAC (100 dBA) and ADC (92 dBA) support rates up to 96 kSPS
*14-mW power dissipation with stereo playback at 48 kSPS
*Stereo headphone drivers and 500-mW, 8speaker driver
*Stereo microphone preamps and hardware automatic gain control
*Integrated PLL for flexible audio clock generation
*Programmable digital audio bass/treble/EQ with 3D effects
*Analog inputs are configurable as single-ended (AIC32/AIC31) or fully differential (AIC31 only)
*Up to six analog inputs, six output drivers for easy connectivity to multiple devices in a cellular telephony system
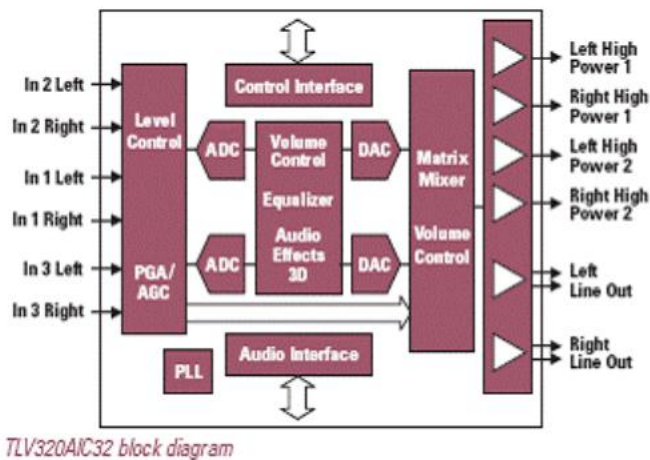*Packaging: 5 5 mm 32-pin QFN
Applications
*Cellular and smart phones
*Digital still cameras, digital video cameras
*MP3 and portable media players

* PDAs
*Talking toys and toys with audio

TLV320AIC32 block diagram

TLV320AIC32 方框图

The PCM3792A is a single-chip, 20-bit stereo audio CODEC with three single-ended analog inputs, three stereo outputs and two mono outputs. It includes an integrated stereo Class-D audio power amplifier. The PCM3792A accepts left-justified,right-justified and I2S™ data formats for simple interface to audio DSP or decoder/encoder chips. It can be controlled with a two- or threewire serial interface. The PCM3792A is suitable for a wide variety of portable applications where good performance and low power are required.
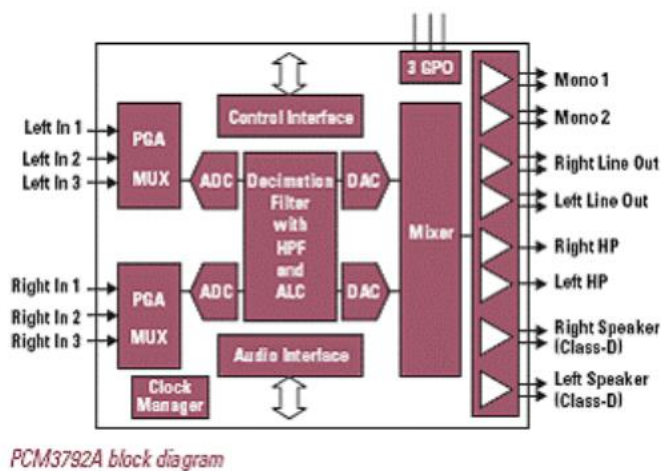Key Features
*95-dB SNR DAC, 90-dB SNR ADC
*Stereo 500 mW at 8 for speaker amplifier
*Stereo 30 mW at 32 for headphone amplifier
*+6-dB to −70-dB volume control for each analog output
*+30-dB to −12-dB gain control for analog inputs
*48-mW power dissipation at 3.3 V (playback)
*67-mW power dissipation at 3.3 V (recording)
*Auto Level Control (ALC) for playback and recording
*Power supply:
*1.8 to 3.6 V for digital I/O
*2.7 to 3.6 V for digital and analog
*2.7 to 4.5 V for speaker amplifier
*Packaging: 6 6 mm BGA
Applications
*Mobile phones, PDAs
*Video camcorders, movie digital still cameras

*Portable digital audio players
*Expected release April 2006.

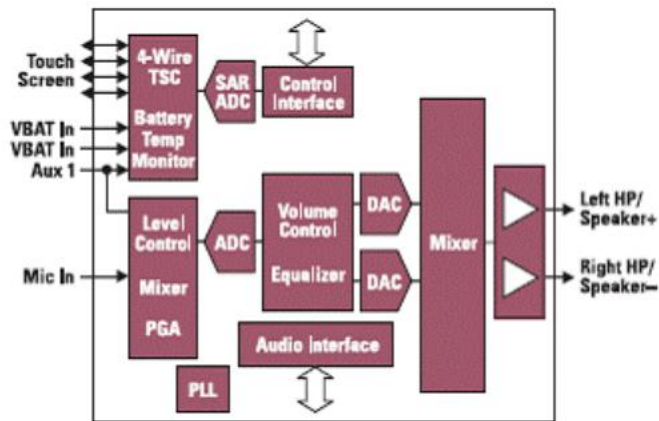PCM3792A block diagram

PCM3792A 方框图

The TSC2100 is a four-wire smart touch-screen controller (TSC) with an integrated audio CODEC, a headphone/speaker amplifier and a 12-bit battery/temperature/auxiliary measurement SAR ADC. The TSC2102 is a pin- and software-compatible version of the TSC2100, incorporating the smart four-wire TSC, a stereo audio DAC and a headphone/speaker driver.
Key Features
*Four-wire smart touch-screen controller
*Stereo DAC and mono audio ADC (TSC2100) support up to 53 kSPS
*97-dB stereo playback at 11-mW power dissipation
*Audio output drivers provide 325 mW into 8 and also support stereo headphones with capless output option
*Integrated PLL for flexible audio clock generation
*Programmable digital audio bass/treble/EQ/de-emphasis (TSC2100 only)
*Microphone preamp and hardware automatic gain control
*Direct battery measurement accepts up to 6-V input
*On-chip temperature and auxiliary-input measurement
*Packaging:7 ×7 mm 48-pin QFN (TSC2101)
5 × 5 mm 32-pin QFN (TSC2100)
32-pin TSSOP (TSC2100)

Applications
*Portable media players
*PDAs
*Portable audio products

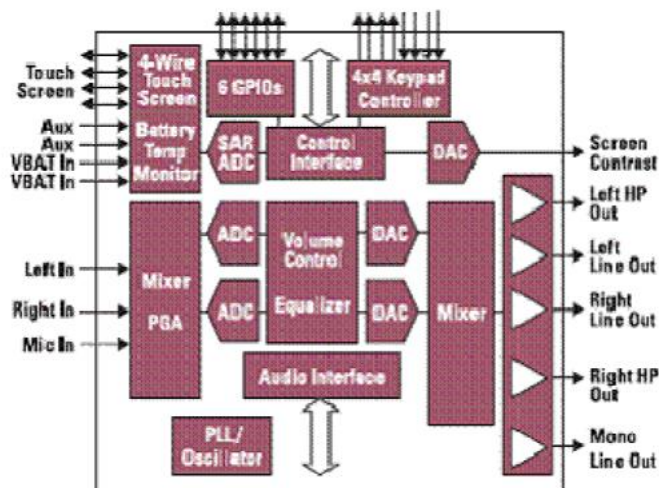TSC2100 block diagram

TSC2100 方框图

The TSC2301 is a 4-wire smart touch-screen controller (TSC) with an integrated audio codec, a headphone/speaker amplifier and a 12-bit battery/temperature/auxiliary measurement ADC. The TSC2301 includes a keypad controller and 6 additional GPIO pins.

Key Features

*4-wire smart touch-screen controller
*4 4 keypad interface (TSC2301 only)
*6 GPIO pins (TSC2301 only)
*Full stereo codec supporting up to 48 kSPS
*98-dB stereo playback with 27-mW power dissipation
*8-bit DAC for LCD contrast control
*Integrated PLL for flexible audio clock generation
*27-mW stereo headphone driver with capless output option
*Programmable digital audio bass/treble/EQ/de-emphasis
*Microphone preamp and hardware automatic gain control
*Direct battery measurement accepts up to 6-V input
*On-chip temperature and auxiliary-input measurement
*Packaging: 6 6 mm 120-ball BGA (TSC2301), 64-pin TQFP (TSC2301), 7 7 mm 48-pin QFN (TSC2302)

Applications

*Smart phones
*PDAs
*Portable media players
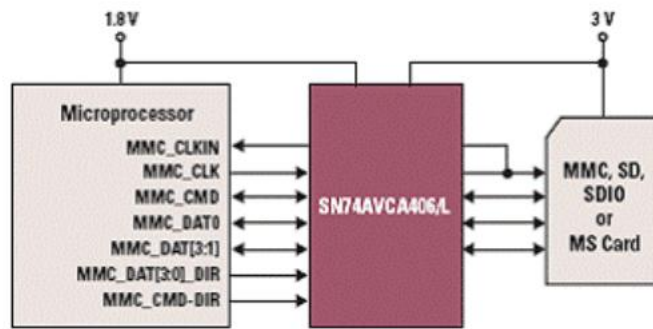*Low-power audio products

TSC2301 block diagram

TSC2301 方框图

The SN74AVCA406 is a transceiver for interfacing microprocessors with MultiMediaCard (MMC), SD Secure Digital™ cards, Memory Stick-compliant products, SmartMedia cards, or xD-Picture Card. It integrates high ESD protection, which eliminates the need for external ESD diodes.

Key Features

*Transceiver for interface with MultiMediaCard (MMC), SD Secure Digital, Memory Stick (MS) compliant products, SmartMedia and xD-Picture Card

*Configurable I/O switching levels with dual-supply pins operating over full 1.4- to 3.6-V power-supply range

*A ports are placed in high-impedance state when card-side supply voltage is switched off

*ESD protection for card-side pins exceeds ±15-kV air gap discharge,±8-kV contact discharge

Applications

*Handsets-Digital still cameras

*PDAs-Set-top boxes

*Handheld scanners

Memory card interface with the SN74AVCA406

SN74AVCA406 存储卡接口