

Description

The Tango™ Media Player/Recorder System is a complete end-to-end system for playback and recording of digital media content. It is the first in a family of platform solutions from PortalPlayer, Inc. that allow consumers to download open and secure MP3 music and other encoded data directly from the Internet. The Tango system offers the OEM a highly optimized solution to produce fully featured player/recorders with a variety of options for decoders, encryption standards, storage and display types.

The platform includes the PP5001 integrated system-on-a-chip controller, an extensive firmware suite including application software, and a complete Windows Digital Media Manager applications interface. The ARM® 7 TDMI-based architecture is optimized for use in a range of applications including portable MP3 players, portable stereos, home audio/video systems, cellular phones, and automotive.

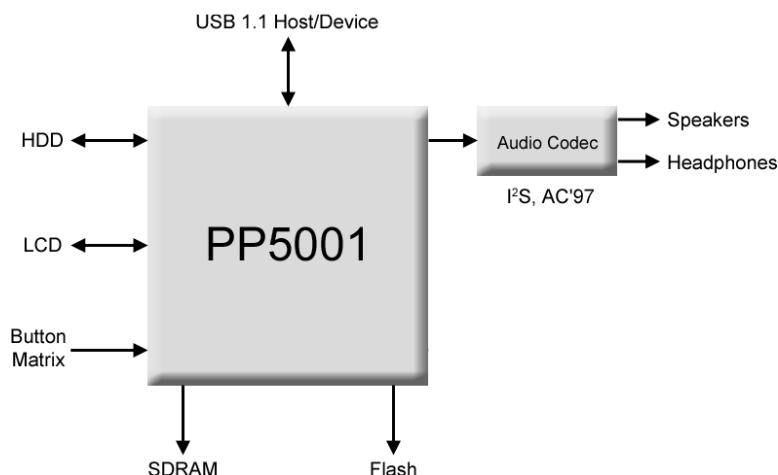
The system supports the latest standards from the Secure Digital Music Initiative (SDMI). The controller supports decoding of MP3, Advanced Audio Codec (AAC), and Microsoft® Windows Media Audio and QDesign decoder technology. The device supports encoding of audio data to allow recording CD-ROM tracks directly into the player.

The PP7001 is a companion PC Media Management software application that runs in the Microsoft Windows environment. The software enables encoding using both constant and variable bit rate encoding. The application is optimized to ensure seamless data transfer to and from the PC application, Internet, hard disk drive, the portable player or other connected storage device. Upon installation, the player automatically presents all the music files stored in any of the connected storage mediums and allows the user to easily sort the library and create playlists.

Features

- ARM7 TDMI based core
- Co-processor enables real time encoding acceleration
- Supports SDMI Portable Device Specification 1.0 Phase 1, flash upgradable to Phase 2
- Complete firmware suite supports record/playback from various sources, user navigation of audio files, tone control and a variety of system control functions

Typical Application



Memory and Storage Media Controller

- Integrated SDRAM controller supports up to 2 banks of up to 128MB SDRAM per bank
- Flash interface supports up to 2 banks of up to 128MB Flash per bank
- Supports Sony Memory Stick™
- Supports SD (Secure Digital™) Memory
- Supports MultiMediaCard™
- Supports SmartMedia™ cards
- External Compact Flash (CF) interface addresses all available module sizes
- Enhanced MicroDrive interface to support the latest generation of high capacity rotating media storage
- Integrated 32KB SRAM and 8KB of cache
- Programmable access time for ROM/SRAM/SDRAM/FLASH memory

LCD Controller

- Direct interface to single scan LCD panels
- Support for 1, 2 and 4-bits per pixel
- Support for 16 grey scale dithering engine
- Supports panel widths up to 1024 pixels in 16 pixel increments
- Supports panel heights up to 512 pixels in 8 pixel increments
- LCD Bridge interface provides display address and control interface for controller based small form factor LCD displays (compatible with Toshiba P6B658 or T6B668 interface)

Peripheral Controllers

- 16 GPI/Os for support of various navigation buttons including Play, FFD, REW, PAUSE, HOLD, RANDOM, etc.

- Supports additional GPI/O's through external matrix
- AC '97 2.1 audio codec interface supports Stereo CD balanced Line In, Stereo Line In/Out, Mono Mic In, Stereo Headphone Out
- SPDIF In/out
- Remote control interface for transport, volume and LCD data on headphone cable

Audio CODEC and Serial Interfaces

- MP3, Advanced Audio Codec (AAC), Microsoft® Windows Media Audio, QDesign and decoding on the player
- Supports MP3 audio encoding for direct CD recording on the player
- Variable bit rate sampling from 2K to 256K bits per second (kbps)
- Supports 2KHz to 96KHz decoding sampling rates
- Data encrypted/decrypted using 128-bit Safer128, Elliptic Curve (ECC) and hashing algorithms. Also support specific algorithms from MJuice
- ATA-33 IDE controller allows direct interface to CD-ROM and hard disk drives. Supports up to 2 channels with 4 devices
- OHCI compliant USB 1.0 interface supports data transfer rates up to 12Mbps
- Two RS232 interfaces
- Serial bus interface

Power Management

- PP5001 provides long battery life using a single 1.5V AA battery
- Advanced power management features support auto system shutdown while idle
- Smart Battery charge level monitoring support



Architecture

The Architectural Diagram for this product is available under NDA.

Package

- 208 pin TQFP, 256 BGA
- 0.25u CMOS technology

Please contact PortalPlayer for details.

PortalPlayer Digital Audio Platform

This document describes one of four components included in PortalPlayer's digital audio platform: System-On-Chip ICs, a customizable firmware suite, PC software, and integrated third-party services. PortalPlayer's extensive systems experience ensures support for your design and integration programs; from portable digital audio player/recorders and hybrid home stereo systems, to mass-storage-equipped digital jukeboxes and car audio systems. We blend PC knowledge and embedded design expertise to deliver innovative base platforms for consumer-friendly, feature-rich audio products.

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