PUC 303xA
Programmable Universal Controller

Product Highlights

◆ **MP3/AAC/WMA/MIDI Decoding Support**

◆ **Digital Rights Management (DRM)**

◆ **Multimedia, SD, Compact Flash Card and Flash Memory Support**

◆ **USB/UART/IrDA/SSP Interfaces**

◆ **Smallest Package in Class**

Target Applications

◆ **MP3 and Multi-Format Digital Audio Flash Players**

◆ **MP3 and Multi-Format Digital Audio HDD and Microdrive™ Players**

◆ **MP3 and Multi-Format CD Players**

◆ **Digital Voice Recorders**

◆ **Multimedia Mobile Phones**

◆ **Internet Radio**

The Programmable Universal Controller PUC 303xA utilizes a 64-MHz ARM7TDMI processor core, 256 kBytes of embedded Flash memory, numerous communication interfaces (incl. USB, IrDA, UART, Serial Synchronous Ports), a Real Time Clock, and power management functions. A possible 66 general-purpose I/O pins – under full software control – ensures a high degree of configuration flexibility.

The PUC 303xA's system software can support Multimedia, SD and Compact Flash cards, whilst enabling multi-format digital audio decoding such as MP3, AAC, WMA, and MIDI. Speech encoding and decoding are also feasible using a variety of speech codecs including Micronas SC-4 and NSC.

The secure controller PUC 303xA allows DRM implementations, which are fully SDMI compliant. A comprehensive DRM software stack is available which includes full support of SD audio or NAND Flash architectures. Such solutions are provided with flexible PC connectivity, using standard Windows USB drivers. Secure Keys, for example those employed with the SD card, can be securely stored in the embedded Flash Memory of PUC 303xA.

In summary, the PUC 303xA and its system SW solutions, meet all the requirements of multi-format Flash, HDD or CD players, digital voice recorders, multimedia mobile phones, and streaming audio applications.

Features

◆ 64-MHz ARM7TDMI core

◆ 56 kBytes embedded SRAM

◆ 256 kBytes Flash memory

◆ Memory protection unit, secure mode

◆ Power management unit with PLL

◆ USB full-speed connectivity

◆ 5×serial synchronous ports

◆ 2×UARTs / IrDA

◆ Real time clock

◆ Up to 66 GPIOs

◆ 3×timer/counter, Watchdog

◆ I^2C master/slave

◆ Interrupt controller with HW prioritization

◆ Packages:
  – PQFP100 (23.2×17.2×3 mm^3)
  – LFBGA81 (9×9×1.4 mm^3) package

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Oct/2002

Software

Micronas supports the PUC 303xA with the provision of complete modular system software solutions supplying:

◆ MP3, AAC, WMA (DRM), MIDI decoding

◆ Speech encoding/decoding using Micronas's speech codecs SC-4 and NSC

◆ SD Card, Multimedia card, Compact Flash Card, NAND Flash support

◆ SD Audio and NAND Flash DRM support

◆ Streaming applications

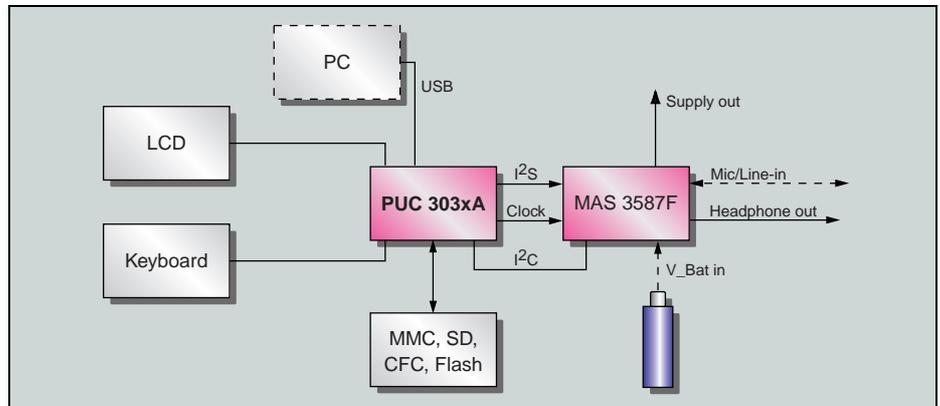◆ File management (SD card, Multimedia card, Compact Flash card, USB)

Fig. 1: Typical application: multistandard audio secure player/recorder

System Application Support

For the PUC 303xA there are several application boards available:

◆ Columbus Drive: development of spinning media players/recorders

◆ Columbus LP: development of Flash players, mobile phones and digital voice recorders

Complementary Products

◆ MAS family: MAS 35x9F, MAS 3587F

◆ DAC family: DAC 355xA, DAC 3560C

Online Product Information
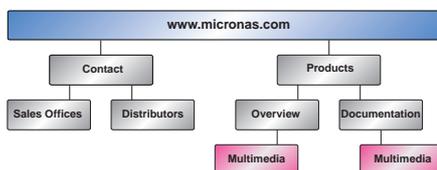
www.micronas.com provides details of many system solutions for development support and the option to request Micronas reference design information.
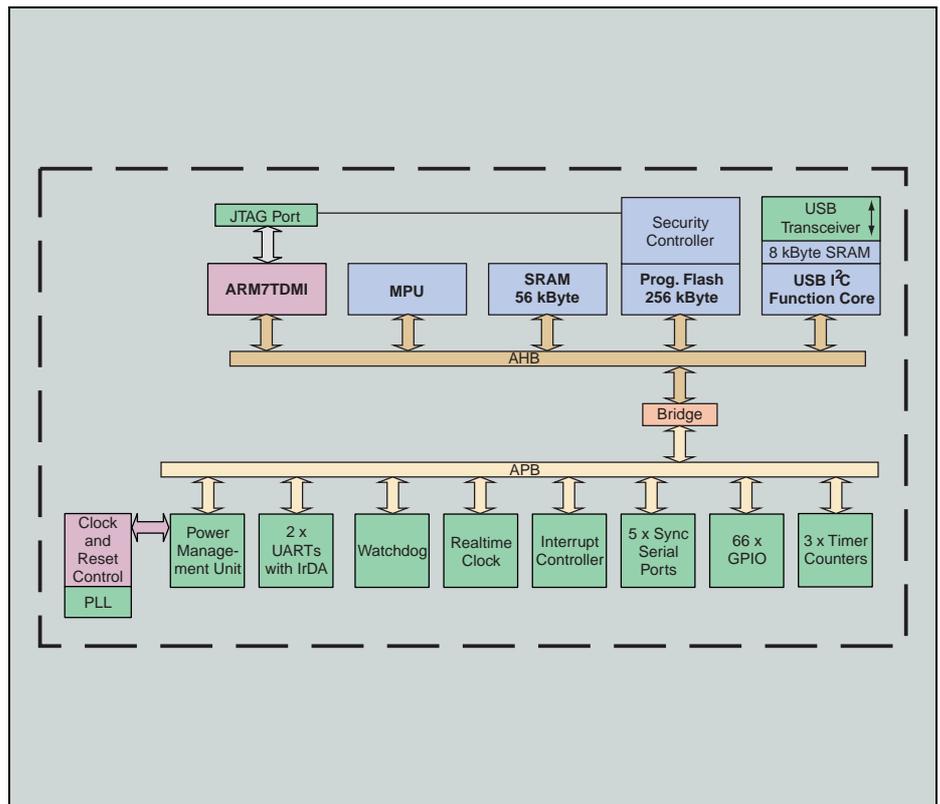

Fig. 2: Block diagram of the PUC 303xA