

PRODUCT BRIEF



GP31P1003A

Advanced Multimedia Processor SOC Solution

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Version 1.0

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Table of Contents

	<u>PAGE</u>
1. GENERAL DESCRIPTION	3
2. FEATURES	3
3. BLOCK DIAGRAM	4
4. DISCLAIMER.....	5
5. REVISION HISTORY	6

ADVANCED MULTIMEDIA PROCESSOR SOC SOLUTION

1. GENERAL DESCRIPTION

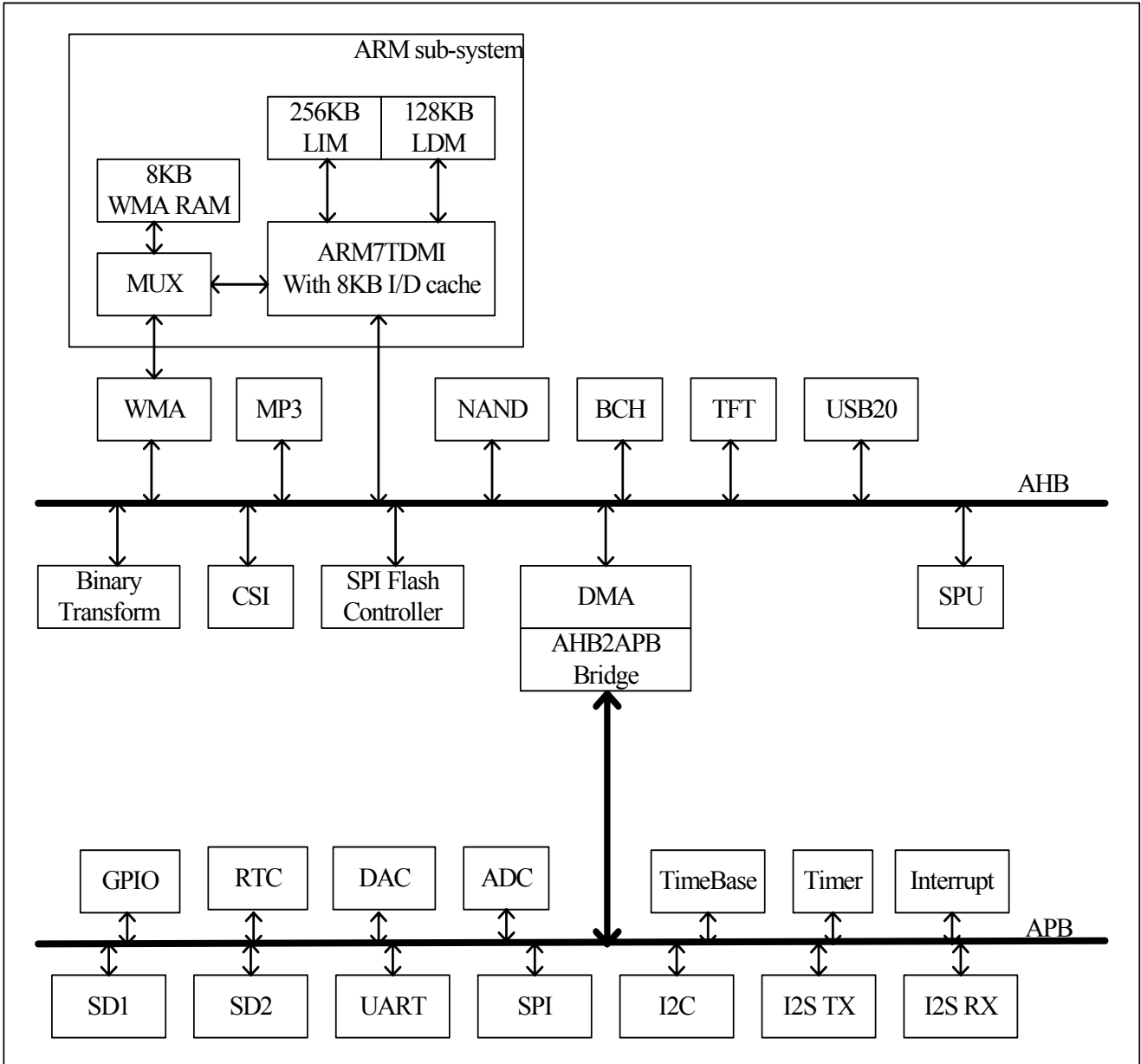
The Generalplus GP31P1003A, a highly integrated SoC (System-On a Chip), offers a great cost-effective and high performance ratio solution for multimedia applications. It is embedded the ARM7TDMI with 8K-byte unified ID-cache and many tremendous features, SPI Flash controller which CPU can run program directly on it, WMA accelerator, TFT-LCD interface, CMOS sensor interface, 60-bit BCH and Randomizer for MLC/TLC NAND Flash, UART interface which support smart card interface(ISO7816), 4-channel DMA controller, 6-channel 16-bit timers, RTC, 2 SD/MMC card interface, USB 2.0 mini-host/device, interrupt controller, SPI (master/slave) controller, 8 channel sound processing unit (SPU), programmable I/O ports, stereo 16-bit DAC for audio playback, 0.5W class AB mono audio amplifier, 8-channel 12-bit ADC, MIC, PLL, I2S TX/RX for external sigma-delta CODEC, 32K-byte OTP with EV mode, power control macro and 136K-byte embedded SRAM when WMA is disable.

With a complete set of common system peripherals, the GP31P1003A chip minimizes overall system cost and no additional component needs to be added. Not only does GP31P1003A feature the high-speed performance, but it is also a cost-effective system and the most importantly - compatible with all ARM based programs.

2. FEATURES

- ARM7TDMI CPU with 8KB unified ID-cache, embedded JTAG ICE, and working frequency up to 96MHz.
- Up to 136KB SRAM for local data buffer when WMA is disable. There is a dedicated 128KB internal SRAM if WMA is enable.
- 32KB OTP with EV mode
- SPI Flash controller which CPU can run program directly on it. Supports 1-bit/2-bit/4-bit IO mode both on STR and DTR. 2 SPI Flash are allowed in serial or parallel manner.
- WMA accelerator
- Four-channel DMA controller.
- TFT-LCD controller.
 - UPS051. (serial RGB)
 - UPS052. (serial RGB dummy)
 - I80 (8-bit system bus) I/F type.
 - CCIR601/CCIR656.
- Interrupt Controller.
- Universal Serial Bus (USB) 2.0 high/full speed compliance device and USB mini-host with built-in transceiver. Support Bulk IN/OUT, Audio ISO IN/OUT, Video ISO IN and Interrupt IN transactions.
- BCH 60-bit/1K and Randomizer for MLC/TLC NAND Flash
- 8 channel sound processing unit (SPU). Each channel in this SPU can do ADPCM/PCM decode, volume multiply and left/right channel mute control.
- Watchdog timer.
- Six 16-bit timers/counters.
- 2 SD/SDHC/SDIO/MMC card interface.
- SPI (master/slave) interface with data rate up to 24Mbps.
- UART (asynchronous serial I/O) interface with baud rate up to 1.8432Mbps and 115.2Kbps. The UART interface can be configured as smart card interface(ISO7816)
- 60 Programmable general I/O ports (GPIO) with pull-high/low control.
- Built-in Power macro for power on/off controller and a 4.2V to 3.3V LDO and a 3.3V to 1.2V LDO.
- Dedicated 4.2V to 3.3V LDO for ADC/DAC.
- Real-time clock (RTC) with independent power supply.
- 216MHz PLL, range from 24MHz to 216MHz with 6MHz step
- 16-bit stereo DAC (2-channel) for audio playback.
- 0.5W class AB mono audio amplifier
- 12-bit ADC with 6 line-in channels and 2 internal channels for battery and 1.2V measurement.
- MIC with PGA. (Programmable Gain Amplifier)
- I2S TX/RX for external sigma-delta CODEC

3. BLOCK DIAGRAM



4. DISCLAIMER

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5. REVISION HISTORY

Date	Revision #	Description	Page
Nov 18 , 2013	1.0	First edition	6