SDA 6000/6001 “M2”

April/2002

SDA 6000/6001 “M2”
16-bit Microcontroller and Graphics Engine for TV and Display Appliances

The SDA 6000/6001 integrates a high-speed 16-bit C166 microcontroller with digital signal processing for VBI data acquisition and the most flexible display controller ever seen since Megatext.

The SDA 6000/6001 is the cost-effective solution for consumer products that require flexible pixel graphics for the optimum user interface:

- Television sets with
  - Teletext up to Level 2.5
  - Electronic Program Guides (NexTView and others)
  - HTML-, GIF-, and JPEG-based applications
- Telecommunication devices with gray-scale or color pixel displays
- Display-oriented consumer info-devices

Main Features

- True 16-bit microcontroller core (C166) clocked at 33 MHz for excellent real-time support
- External memory interface supporting SDRAM (16, 64, or 128 Mbit), ROM and Flash up to 32 Mbit
- PMQFP128 package with 0.8 mm pin pitch for easy soldering
- advanced CMOS technology for high-performance and low power dissipation (3.3/2.5 V)
- New digital data slicer for high-quality VBI line acquisition even with distorted CVBS signals
- RGB output
  - analog
  - digital (controlling of flat panel displays)
- Flash card interfacing
- Double vertical display resolution in interlaced mode (SDA 6001)

Development and Support Package

- Data sheet / specification
- Starter kit from www.willert.de
- Reference layout and evaluation board for easy and fast development start
- Application notes and technical articles
- A huge selection of tools that can facilitate various aspects of software development with M2 can be found in the “service” area at www.micronas.com.

Dedicated Tools

To increase productivity in Graphical User Interface (GUI) development, a suite of highly innovative software tools has been created: the **M**2 **A**dvanced **T**ools **E**nvironment (MATE) Toolbox

- Multi-level graphics API: flexibility through basic GDI functions, efficiency through powerful OSD Service Interface Commerce
- M2 builder with comprehensive resource editing, management and code generation facilities
- M2 display simulator allowing to prototype SDA 6000/6001-based applications on a standard developer’s PC

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Functional Blocks

- Powerful 16-bit microcontroller core (compatible to C166 family) running at 33 MHz
- 2 kB IRAM and 2 kB XRAM for excellent real-time support
- Peripherals similar to SAB C161RI (WDT, RTC, etc.)
- 36 I/O pins (up to 42, depending on memory configuration)
- External Memory Interface supporting PC100-type SDRAM (16, 64, or 128 Mbit), EPROM and/or Flash with up to three devices in parallel
- New digital slicer with four different programmable data services per VBI field
- 2D graphic accelerator with DMA facility and hardware support for fast character-drawing
- Fully flexible screen refresh unit supporting all display modes from 40×25 characters at 50 Hz up to SVGA 800×600 pixels in 64 k colors at 75 Hz progressive scan or higher resolution at reduced frame repetition rates.
- Triple 5/6/5-bit RGB DAC with pixel clock up to 50 MHz for analog RGB output
- Internal bus/arbitration and buffer system with optimized priorities for maximum throughput and minimum latency of memory access

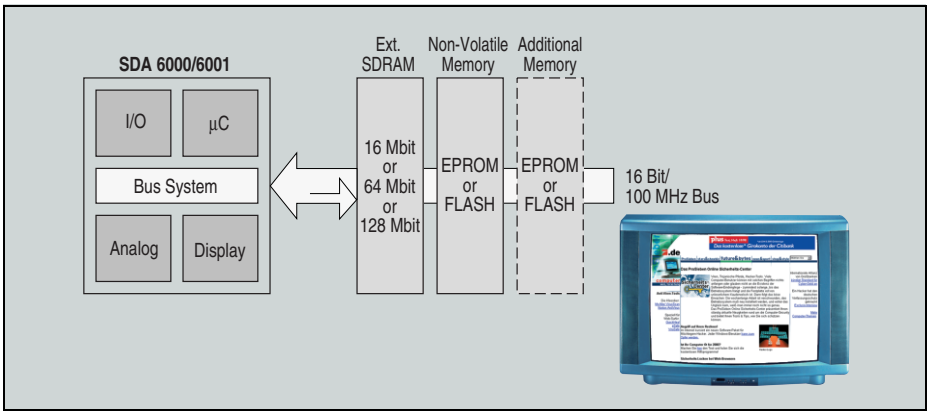

Fig. 1: System overview of the SDA 6000/6001

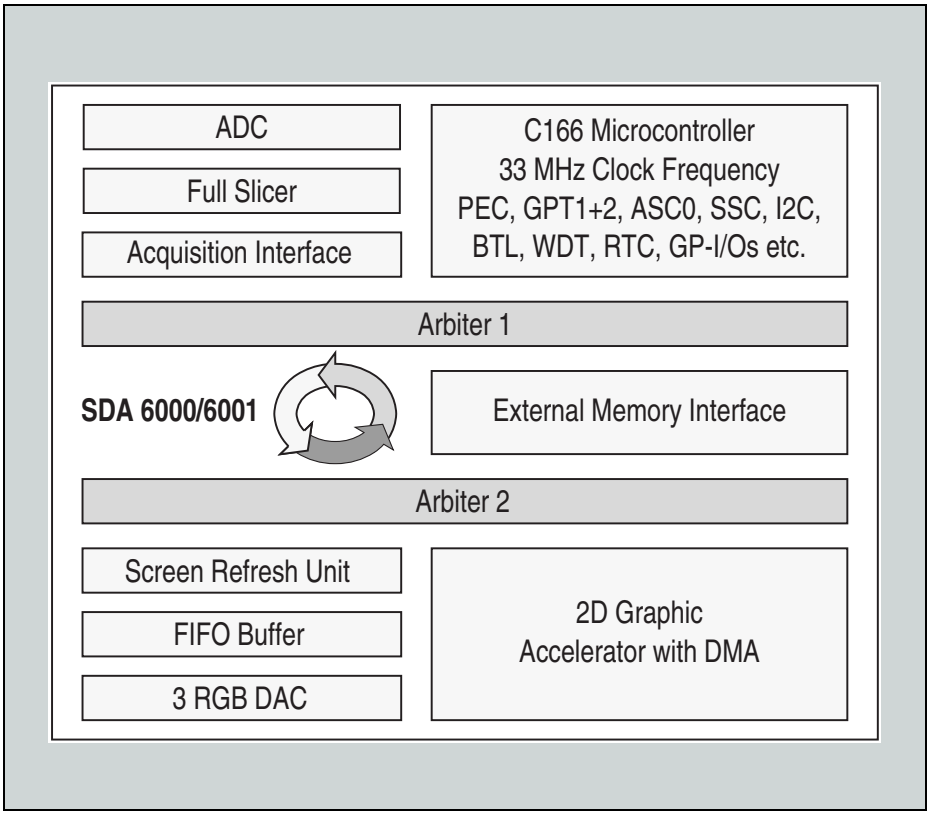

Fig. 2: Block diagram of the SDA 6000/6001

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