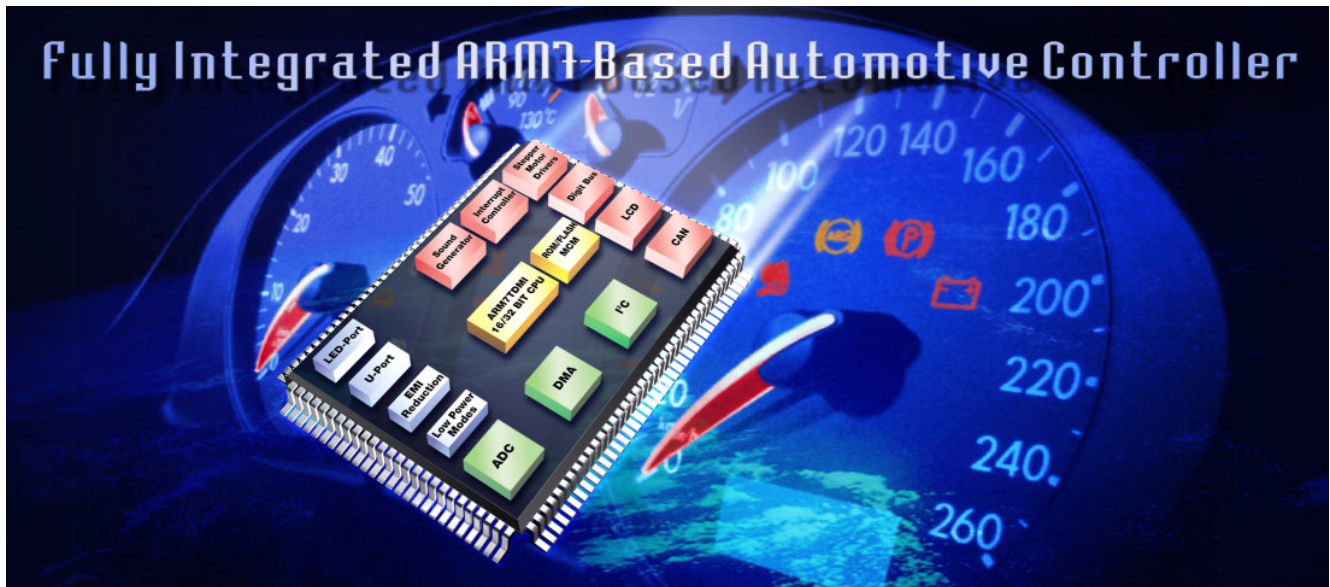


CDC 3257G

May/2005



CDC 3257G ARM7-Based Car Dashboard Controller

The CDC 3257G-Cx is a pin-compatible Flash ROM derivate of Micronas' 32-bit Car Dashboard Controller family based on an ARM7TDMI CPU core (CDC32xxG).

This device comes along with additional features of the Cx platform like a superior power saving module (PSM), two high-speed CAN modules (Bosch V2.0B) and a device lock module to inhibit Flash access. Main characteristics of the PSM are three additional low-power modes (IDLE, WAKE, and STANDBY), an internal RC oscillator, a polling/Flash timer output, as well as an RTC (Real Time Clock).

The CDC 3257G also contains the patented built-in ERM (EMI Reduction Module).

Features

- ◆ 256 KB Flash
- ◆ 12 KB SRAM
- ◆ 8 KB boot ROM
- ◆ Four CPU operation modes (Deep Slow, Slow, Fast, PLL)
- ◆ Three low-power modes (Idle, Wake, Standby)
- ◆ RTC delivering hours, minutes, seconds
- ◆ Polling/Flash timer output
- ◆ PLL circuitry delivering up to 50 MHz
- ◆ 4- to 5-MHz oscillator
- ◆ EMI reduction module (ERM)
- ◆ Digital watchdog
- ◆ Central clock divider
- ◆ Interrupt controller with 40 inputs and 16 priority levels
- ◆ Six port interrupts
- ◆ Regulator input supervision for reset/ alarm (alarm comparator)
- ◆ Clock and supply supervision
- ◆ 16-channel 10-bit ADC
- ◆ Two comparators
- ◆ ADC reference (1 internal, 3 external)
- ◆ 48x4 LCD module
- ◆ Three DMA channels
- ◆ Two UARTs, two SPIs
- ◆ DigitBus master module
- ◆ Two CAN modules with 512 Bytes each of object RAM according to Bosch specification V2.0B (32 message objects)
- ◆ Two I²C master modules
- ◆ Seven stepper motor drivers
- ◆ Six PWM modules (configurable as 2x8 bit or 1x16 bit)
- ◆ Pulse frequency modulator
- ◆ Sound generator with auto decay
- ◆ Two SW-selectable clock outputs
- ◆ 16-bit free-running counter with six capture/compare modules
- ◆ Patch module (up to 10 cells)
- ◆ Device lock module (DLM) inhibiting Flash access
- ◆ 1x16-bit timer and 4x8-bit timer
- ◆ JTAG interface
- ◆ -40 to +105 °C case temperature range
- ◆ Single 3.5 V to 5.5 V supply voltage (limited I/O performance below 4.5 V)
- ◆ Up to 102 GPIOs
- ◆ 128-pin PQFP package, 0.5 mm pin pitch

CDC 3257G

May/2005

Development Tools

- ◆ Evaluation chip CDC 3205G featuring
 - ETM via embedded emulation JTAG
 - ROM/Flash emulation with external SRAM (up to 8 MBytes)
- ◆ Evaluation Board (EVB) including the CDC 3205G for evaluation and debugging of embedded systems
- ◆ Application Board (APB) for Flash memory programming
- ◆ Probe for PQFP128
- ◆ Software environment (compiler, linker, assembler) from 3rd party vendors
- ◆ RTOS from 3rd party vendors
- ◆ CAN protocol stacks

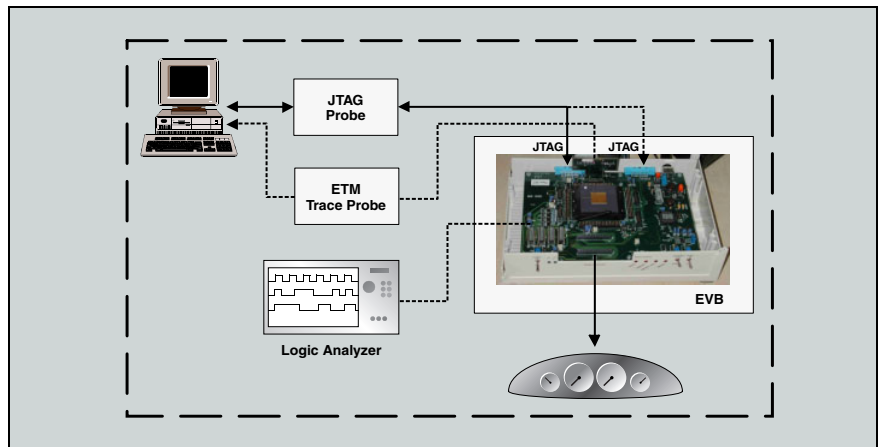


Fig. 1: Development tool setup

System Architecture

The Car Dashboard Controller CDC 3257G contains an embedded ARM7TDMI processor which operates at a maximum clock frequency of 50 MHz.

The internal high-speed bus connects the following peripherals to the ARM7TDMI processor:

- ◆ ICU (Interrupt Control Unit)
- ◆ SRAM
- ◆ DMA

The 16/32-bit bus connects to Flash and boot ROM. All other peripherals are connected to the I/O bus. All I/O ports have multiple functions to obtain utmost flexibility. A total of 102 GPIOs can be selected.

The built-in ERM delivers superb EMI results reducing the peak values by up to 10 dB μ V.

The CDC 3257G is fully pin- and software-compatible with all other members of the CDC 32xxG family.

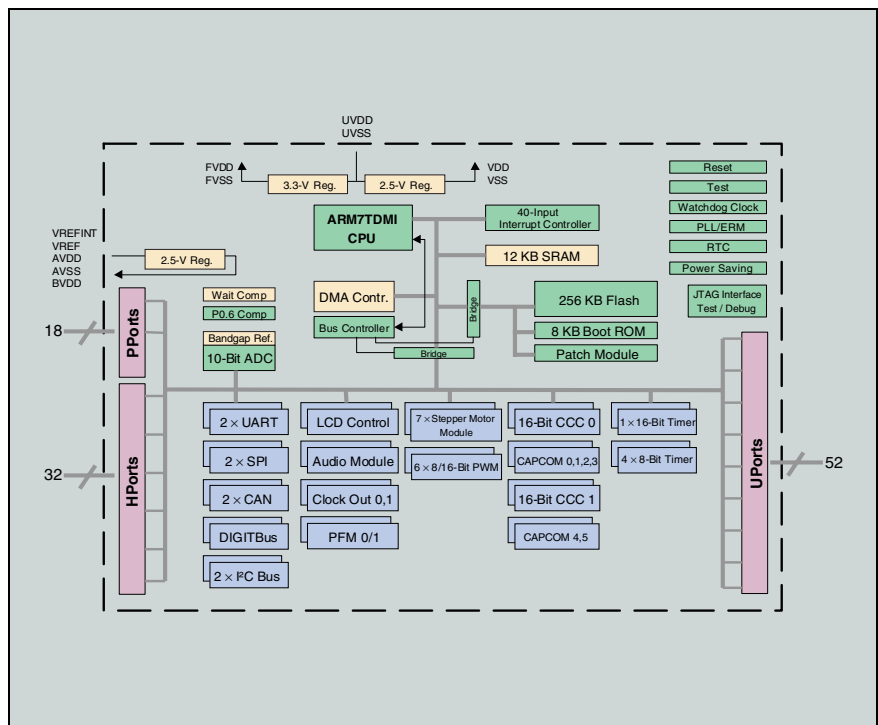


Fig. 2: Block diagram of the CDC 3257G

All information and data contained in this product information are without any commitment, are not to be considered as an offer for conclusion of a contract, nor shall they be construed as to create any liability. Product or development sample availability and delivery are exclusively subject to our respective order confirmation form. By this publication, Micronas GmbH does not assume responsibility for patent infringements or other rights of third parties which may result from its use.

No part of this publication may be reproduced, photocopied, stored on a retrieval system, or transmitted without the express written consent of Micronas GmbH.

Edition May 18, 2005; Order No. 6251-634-1PI