



IN VEHICLE NAVIGATION/TELEMATICS SYSTEM ON CHIP

DATA BRIEF

1 FEATURES

- ARM720 MCU
 - 32-bit RISC MCU with 3-stage pipeline.
 - Max. CPU frequency ~ 68 MHz.
 - Fully instructions compatible with the ARM7 family of processors.
 - 8 KByte Instruction + Data cache, 4-way set-associative.
 - Write buffer de-coupling CPU from system memory during write operations.
 - MMU for virtual to physical address mapping and memory protection.
- Memories
 - 16 KBytes Program RAM Memory
 - 4 KBytes on-chip boot ROM
 - External SDRAM Interface for up to 128 Mbytes SDRAM.
 - External Memory Interface (EMI) for up to 3 Mbytes SRAM, Flash, ROM.
 - ATAPI interface supporting PIO4 mode
- Nested interrupt controller
 - Fast interrupt handling with multiple vectors
 - 32 vectors with 16 IRQ priority levels
 - 2 maskable FIQ sources
- Clock, Reset and Supply Management
 - 3.3 V $\pm 5\%$ operating supply range for Input/Output, AD, DAC.
 - 1.8 V $\pm 5\%$ operating supply range for core supply, PLL, RTC and 32 kHz osc.
 - Internal system clocks generated by fully internal PLL
 - Power management providing different operating modes: RUN, SLEEP, STOP, STANDBY.
- 35 I/O ports
 - 35 multifunctional bidirectional I/O lines
 - 5 ports with interrupt capability
- 3 Timers
 - Two 16-bit programmable Timer modules with prescaler (f_{APB} divided by 1 to 256) driv-

Figure 1. Package



Table 1. Order Codes

| Part Number | Package |
|-------------|---------|
| STA2059 | PQFP208 |

- en from internal selectable clock (oscillator or CPU clock) output compare and input capture functions.
- 16-bit Watchdog Timer with 8-bit prescaler
- Digital Audio
 - 24-bit Audio Digital to Analog converter (DAC) with digital volume control
 - Enhanced Serial Audio Interface (ESAI) supporting I2S format
- 6 Communications Interfaces
 - USB slave interface 1.1 compliant
 - C-CAN module compliant with the CAN specification V2.0 part B (active).
 - Two High-Speed Universal Asynchronous Receiver Transmitter (UART) for full-duplex asynchronous communication.
 - Two Buffered Serial Peripheral Interfaces (BSPI) for full-duplex, synchronous, communications with external devices, master or slave operation.
- A/D Converter
 - 11-bit resolution Analog/Digital Converter supporting 4 multiplexed inputs at up to 950 Hz sampling rate.
- Development Tools Support
 - 5-pin JTAG port (IEEE 1149.1 Standard)
- Package
 - 208-pin PQFP208 package.
 - -40°C to 85°C operating temperature range.

2 SYSTEM BLOCK DIAGRAM

The Figure 2 gives an overview of the complete processor, showing how ARM720T microcontroller and their peripherals are interfaced.

Figure 2. Block Diagram

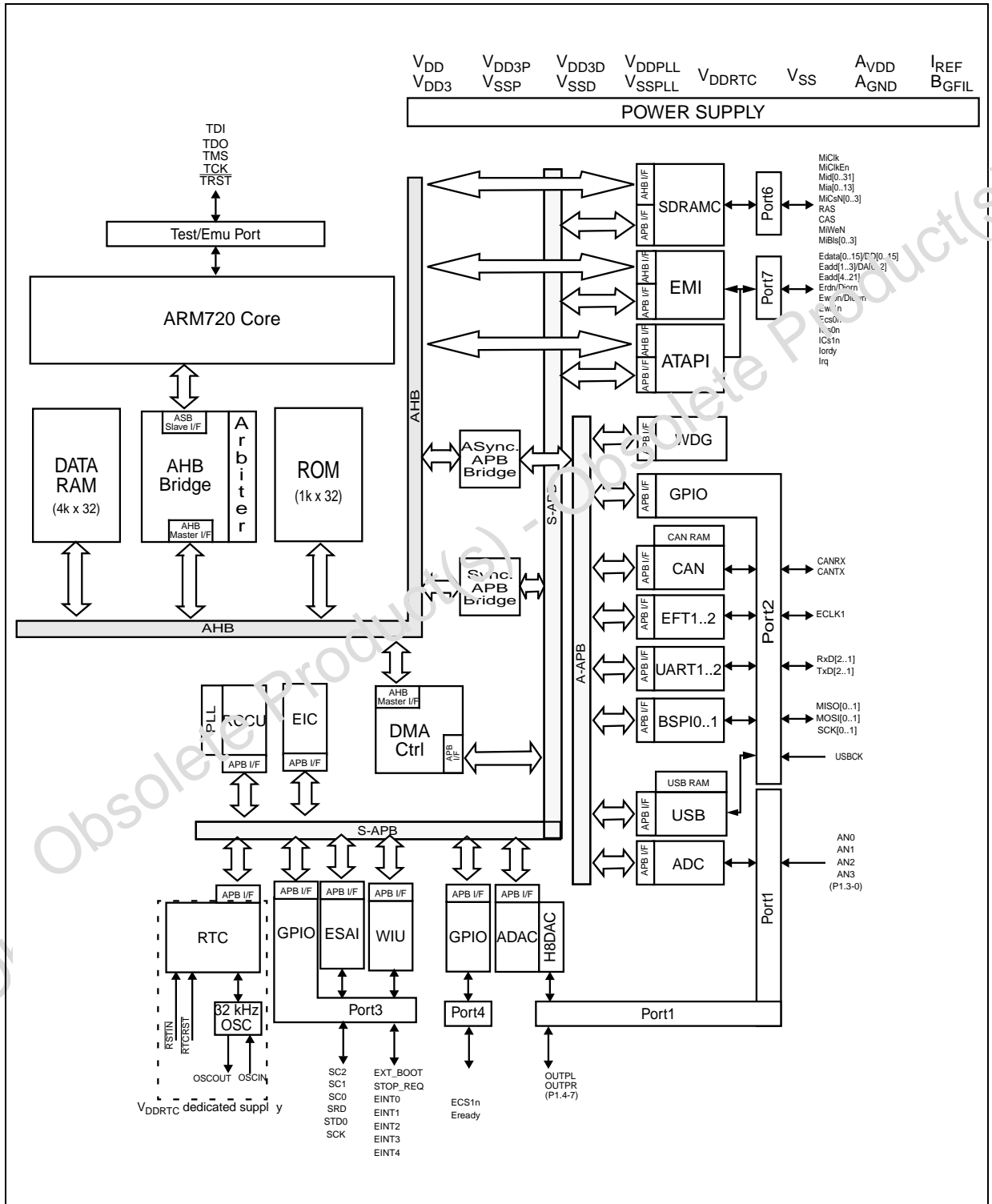


Table 2. Revision History

| Date | Revision | Description of Changes |
|----------------|----------|------------------------|
| September 2004 | 1 | First Issue |

Obsolete Product(s) - Obsolete Product(s)
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