STA2059

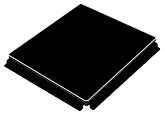
IN VEHICLE NAVIGATION/TELEMATICS SYSTEM ON CHIP

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 8 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 ±5% operating supply range for Input/ Output, AD, ADAC.
  - 1.8 V ±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, STAND-BY.
- 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) driven 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 (ADAC) 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.

Figure 1. Package



PQFP208 (28x28x3.4mm)

Table 1. Order Codes

Part Number	Package
STA2059	PQFP208

This is preliminary information on a new product now in development. Details are subject to change without notice.

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

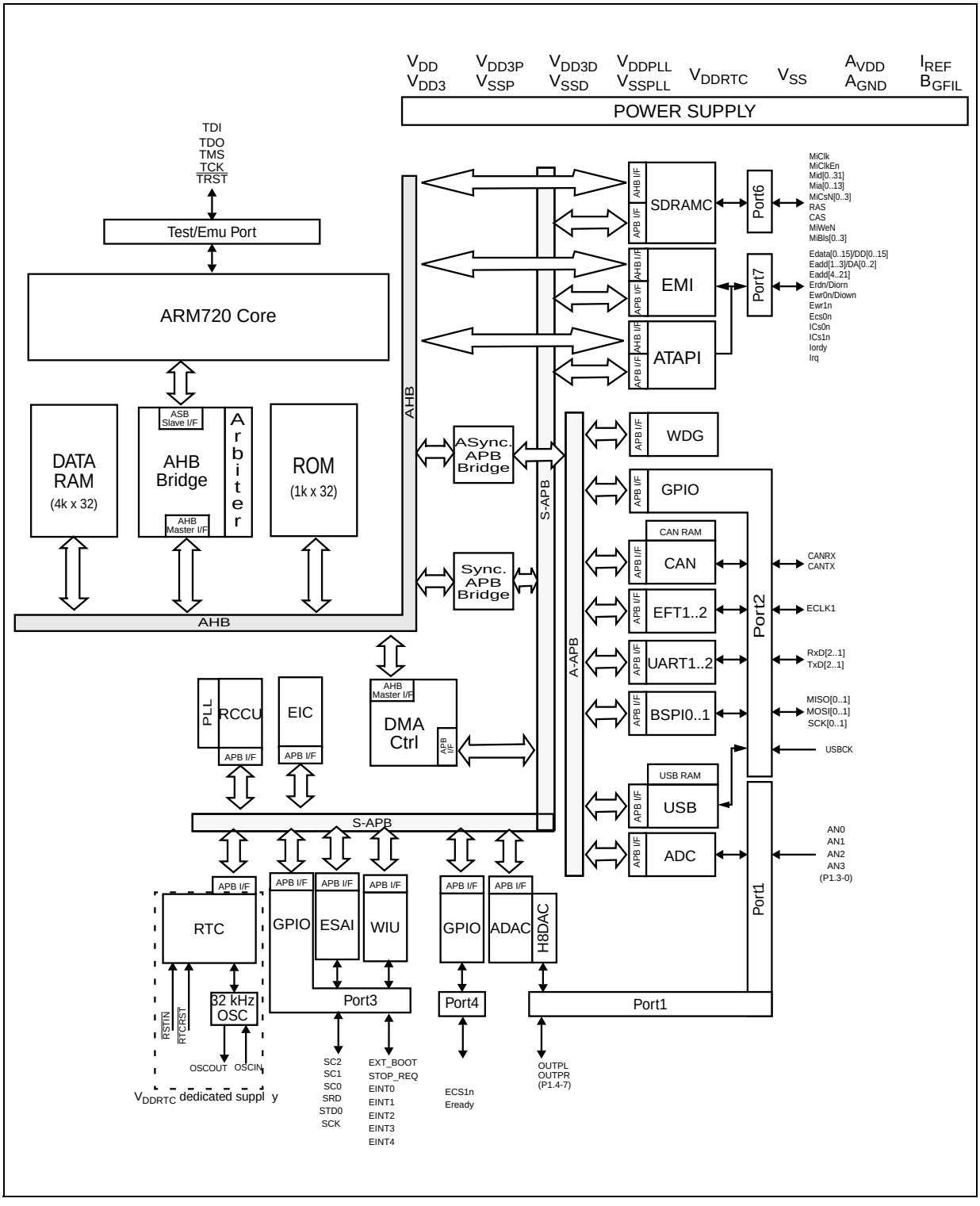


Table 2. Revision History

Date	Revision	Description of Changes
September 2004	1	First Issue

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