



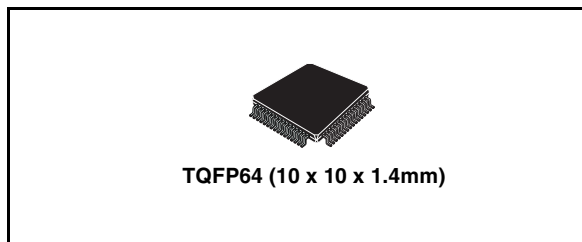
# STA2051GO

## Single Chip GPS Controller

DATA BRIEF

### Features

- Suitable for hand held accessories, portable and personal navigation systems
- ARM7TDMI 16/32 bit RISC CPU based host microcontroller running at a frequency up to 32 MHz.
- Complete Embedded Memory System:
  - FLASH 256K bytes + 16K bytes (100K erasing/programming cycles)
  - RAM 64K bytes.
- 12 channel GPS correlation DSP:
  - no TCXO required
  - RTCA-SC159 / WAAS / EGNOS support
- GPS performance
  - accuracy: stand alone <30m; differential <1m; surveying <1cm
  - time to first fix: autonomous start 90s; cold start 45s; warm start 7s; obscuration 1s.
- Power Supply:
  - 3.0V to 3.6V operating supply range for Input/Output periphery
  - 3.0V to 3.6V operating supply range for A/D Converter reference
  - 1.8V operating supply range for core supply provided by internal Voltage Regulator with external stabilization capacitor.
- 32 programmable General Purpose I/O multiplexed with peripheral functions, each pin programmable independently as digital input or digital output.



- 4 Channels A/D for low frequency signal monitoring (temperature, battery....)
- Real time clock module with 32 KHz low power oscillator and separate power supply to continue running during stand-by mode. 16-bit Watchdog Timer with 8 bits prescaler for system reliability and integrity.
- Four Serial Communication Interfaces (UART) allow full duplex, asynchronous, communications with external devices, independently programmable TX and RX baud rates up to 625K baud.
- One Serial Peripheral Interfaces (SPI) allow full duplex, synchronous communications with external devices, master or slave operation, max baud rate: 5.5Mb/s. One SPI may be used as Multimedia Card interface.
- One I<sup>2</sup>C Interfaces provide multi-master and slave functions, support normal and fast I<sup>2</sup>C mode (400 KHz), 7/10 bit addressing modes.
- Wake-up unit allows exiting from powerdown modes by detection of an event on one external pins or on internal Real Time Clock alarm.
- -40°C to 85°C operating temperature range (guaranteed by correlation).

### Order codes

| Part number | Op. Temp. range °C | Package              | Packing |
|-------------|--------------------|----------------------|---------|
| STA2051GO   | -40 to 85          | TQFP64 (10x10x1.4mm) | Tube    |

## Description

STA2051GO is an STMicroelectronics system-on-chip device featuring the full GPS controller functionality. It combines a high performance ARM7TDMI microprocessor with embedded high-speed single voltage FLASH and static RAM with enhanced peripherals and I/O capabilities. It also provides clock generation via PLL.

STA2051GO is software compatible with the ARM processor family. The device has an on-chip voltage regulator for the 1.8V core logic supply but 3.3V capable I/O lines.

**Figure 1. System Block Diagram**

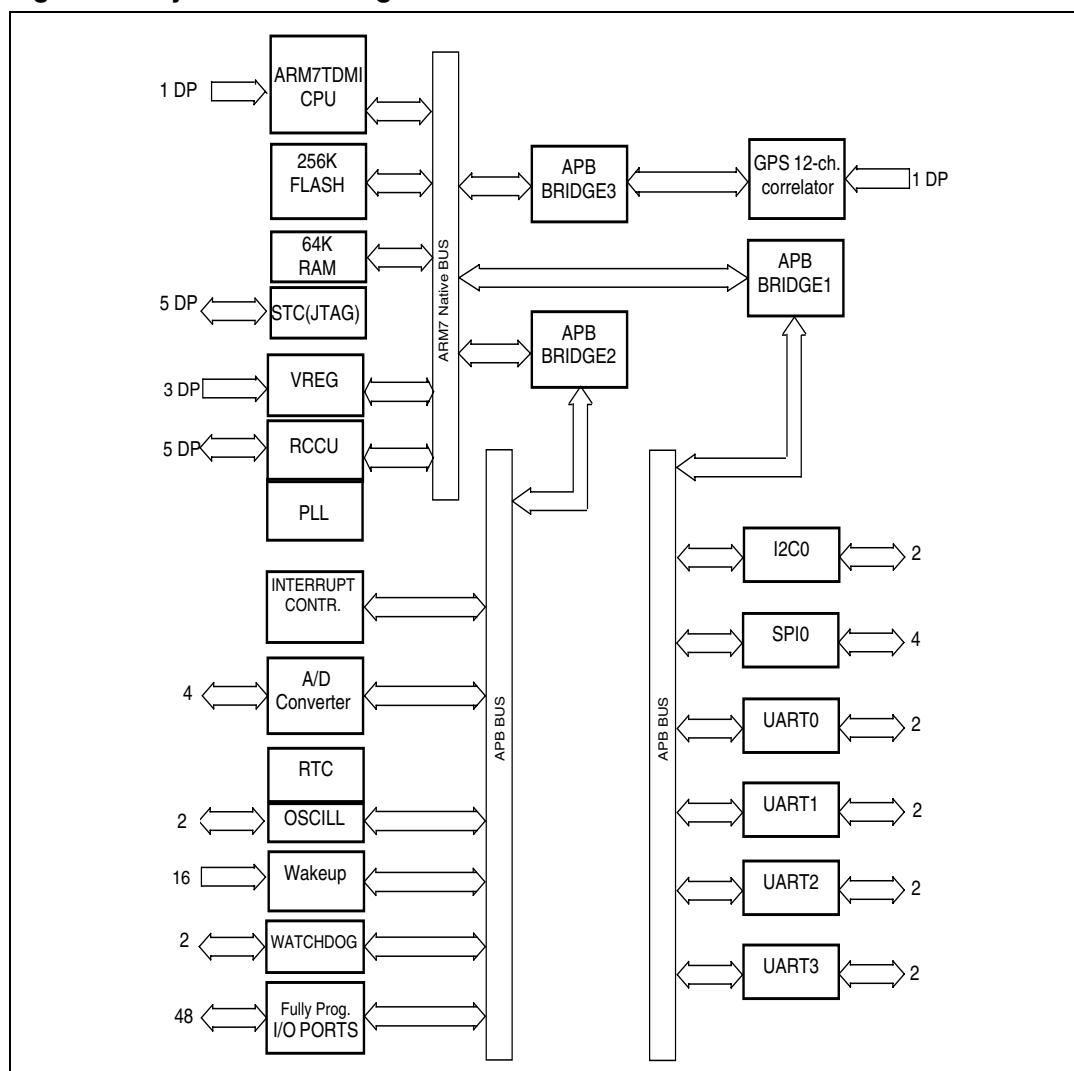
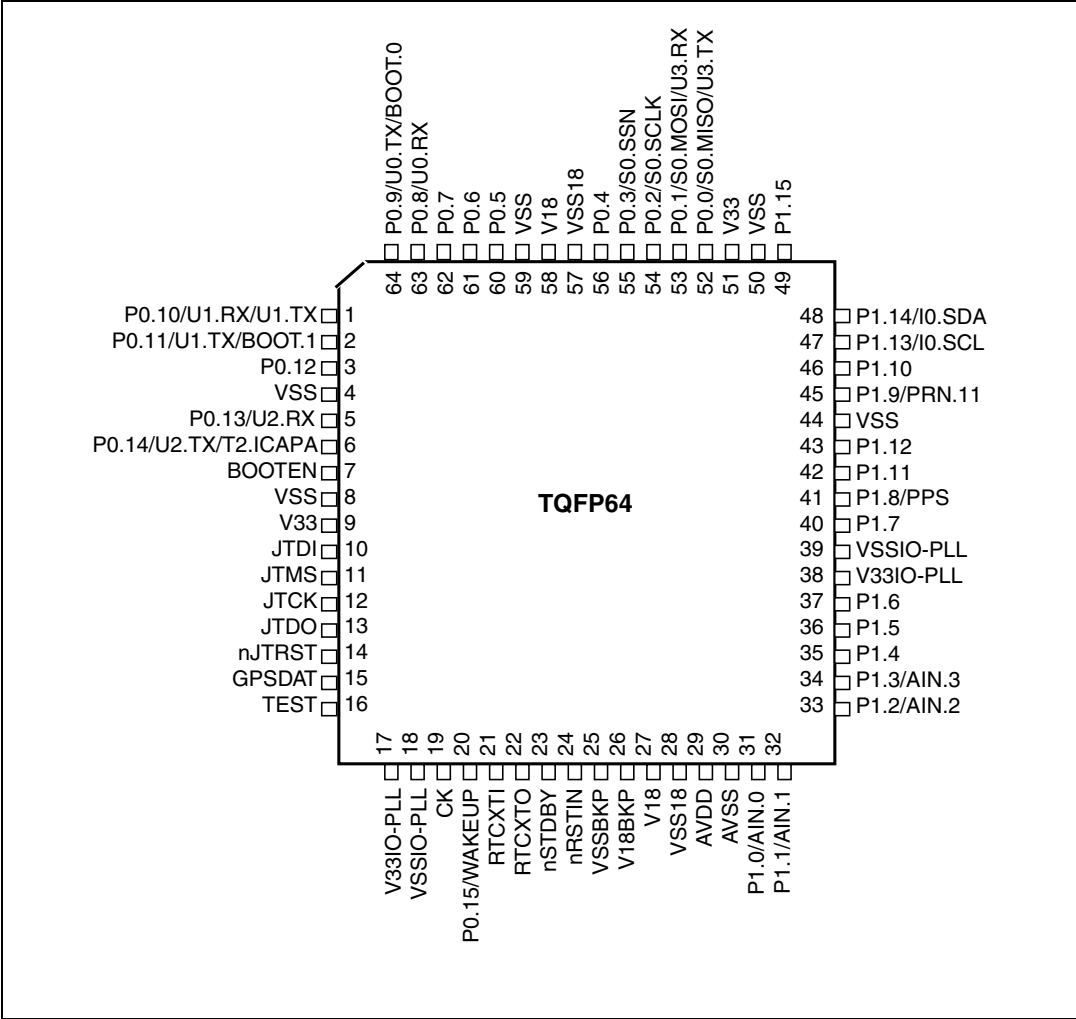


Figure 2. Pins connection (Top view)



## Revision history

Table 1. Document revision history

| Date        | Revision | Changes          |
|-------------|----------|------------------|
| 10-Jan-2006 | 1        | Initial release. |

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