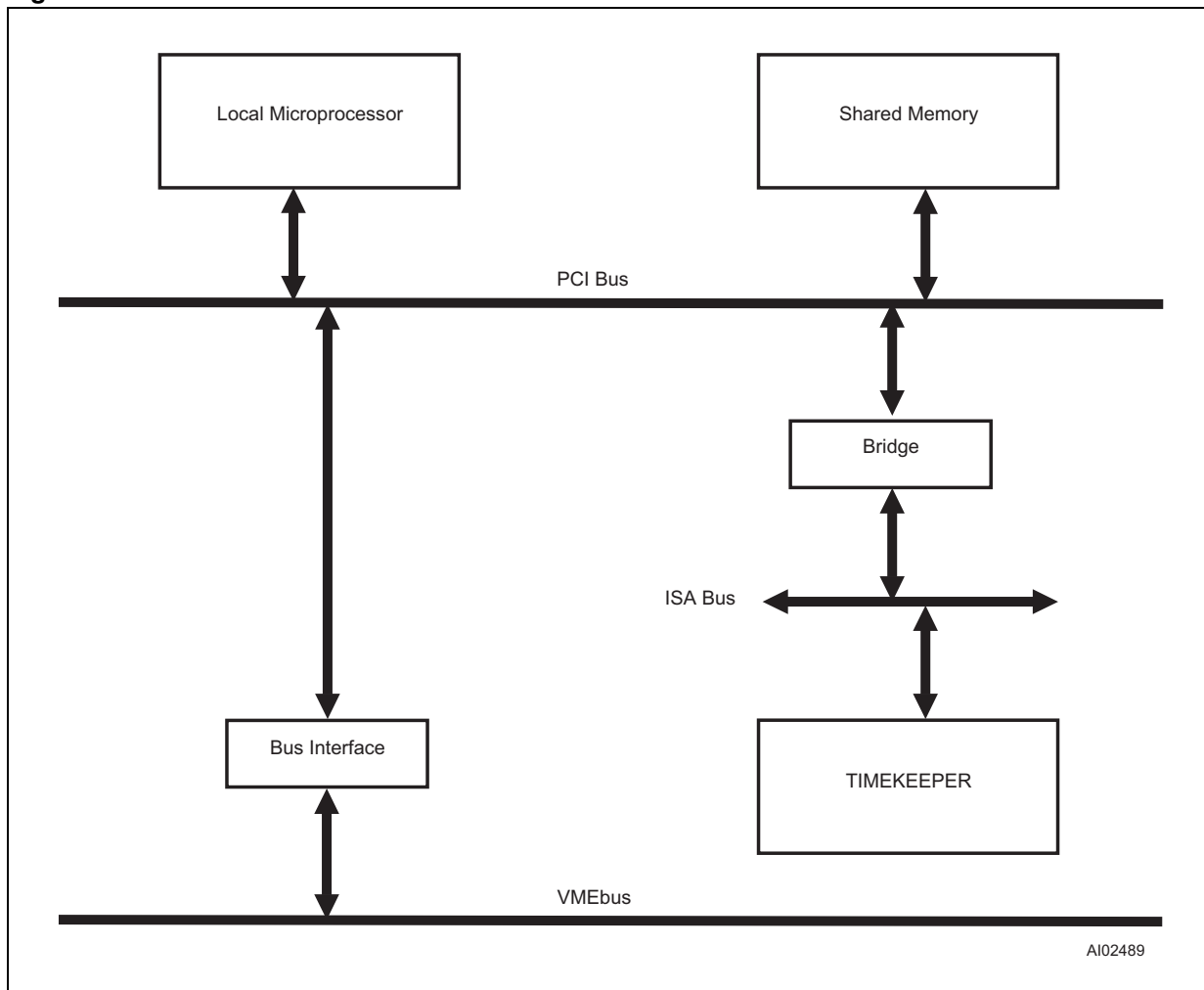


Introduction

Surface-mount TIMEKEEPER[®] devices, from STMicroelectronics, are designed explicitly for inclusion on CPU boards. A typical arrangement is shown in *Figure 1*.

Figure 1. CPU module with a TIMEKEEPER device



Each member of the TIMEKEEPER® family provides support for the following functions:

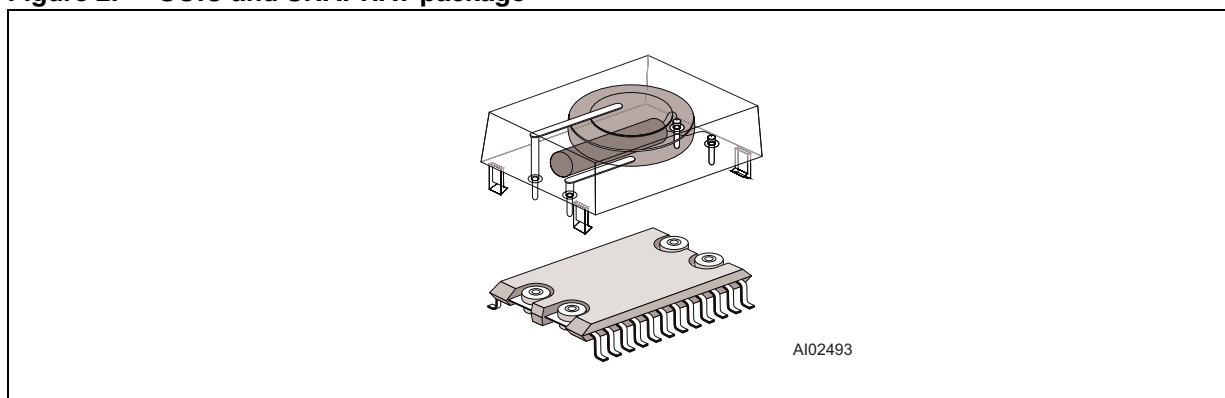
- General timekeeping (i.e. seconds, hour, date, year,...)
- Time stamping (data collection correlated against time)
- Event sequencing during the manufacturing process
- Watchdog (to monitor for processes in the system that are out of control)
- RST: reset signal available for the CPU
- Non-volatile RAM (to store startup parameters, ethernet address, etc.)

Most of the members of the TIMEKEEPER family (M48T02, M48T18, M48T58, M48T58Y, M48T35, M48T35AV, M48T35Y, M48T37V, and M48T37Y) are already being used by manufacturers of VME (Versa Module Eurocard) boards. However, the ones that are best suited for new 'design-in' boards are the M48T58 and the M48T37Y/V. These have the following features:

- Automatic chip deselect and write protect when the power fails (as described in application note AN1012)
- BCD-coded year, month, day, date, hours, minutes, and seconds (as described in application note AN923)
- Software calibration for increased clock accuracy (as described in application note AN934)
- 8K x 8 non-volatile static RAM (as described in application note AN1012)
- Microprocessor power-on reset (devices with 16-byte register maps, only)
- Battery-low warning software bit (devices with 16-byte register maps, only)
- WDF interrupt function (devices with 16-byte register maps, only)
- Periodic alarms (devices with 16-byte register maps, only)
- Industry's first fully surface mountable TIMEKEEPER solution (as described in application note AN1019)
- Industry's smallest non-volatile TIMEKEEPER footprint (as shown in application note AN1019)

However, the significant feature is that each is available in ST's revolutionary SNAPHAT® package: a standard SOIC that is surface mounted in the conventional way, and then is fitted with a SNAPHAT top, as shown in [Figure 2](#), containing the battery and crystal.

Figure 2. SOIC and SNAPHAT package



Revision history

Table 1. Document revision history

Date	Revision	Changes
Dec-1998	1	Initial release.
17-Jul-2012	2	Textual updates concerning available TIMEKEEPER [®] devices.

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