Protec GmbH
Vertrieb elektronischer Bauteile

# SPACE COMPONENTS NEWSLETTER *AUGUST 2014*

## Eval Board available now:


## Advantages:

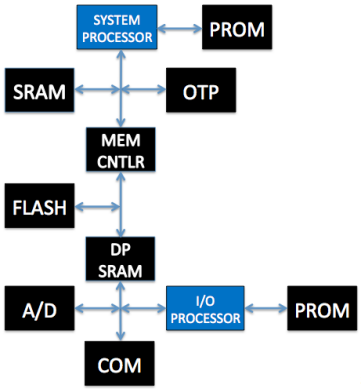
- Better and Free Software availability from ARM
- Low Cost solution for Processing compared to any Leon or embedded Processors in FPGAs
- Different Operating systems possible
- Easy to use due to various experience of designers with ARM in the industrial and commercial world

## RadHard ARM® Cortex® - M0 Processor

Silicon Space Technology has expanded its product portfolio to include an ARM®-based processor manufactured with the disruptive HardSIL™ process offering superior radiation performance **>300Krad and latch-up immunity (SEL)** in extreme environments. The PA32KASA contains an embedded ARM® Cortex®-M0 processor with related peripherals supported in the Keil™ MDK-ARM Microcontroller Development Kit.


## Features:

- **Manufactured with *HardSIL™* technology**
- **ARM® Cortex®-M0 processor**
- **CMOS compatible input and output level, three-state bidirectional data bus**
  - 3.3 ±0.3-V I/O, 1.5 ±0.15-V Core
- **Clock rate 50MHz @ 25°C, 3.3V I/O and 1.5V Core**
- **Memory**
  - 16 KB on-chip data and 16 KB on-chip program memory
  - On-chip error detection and correction (EDAC) & scrubbing
- **Off-Chip interface to Sync Burst Memories**
  - Supports memories up to 36 Mb with EDAC
- **Peripherals**
  - Dedicated General Purpose I/O (GPIO) pins
    - Configurable direction, pull up/downs, open-drain
    - Can be used as edge or level sensitive interrupts
  - 32 General purpose counter/timers
    - Configurable interrupt sources
    - Can be trigger from 2 sources, GPIOs or other cnt/timers
  - 2 UARTs
    - Fractional baud rates, internal FIFO
    - Transmit and receive interrupt sources
  - 2 Serial Peripheral Interface (SPI) controllers
    - Configurable clock frequency, internal FIFO
    - Multiple chip select outputs




- **System-level Triple Mode Redundancy (TMR) on all internal registers**
- **Radiation hardening performance1**
  - Manufactured with *HardSIL*™ for superior RH by process performance.
  - TID > 300Krad (Si)
  - Soft error rate (SER): Testing results in Q1/2014
  - Latch up immunity > LET = 110 MeV-cm2/mg (T=125oC)
- **Packaging**
  - 188 pin, ceramic QFP
  - Package footprint of 1.3” x 1.3”
  - 25 mil lead pitch