

### Features

- Pin Compatible with NMOS 8252 and the Harris 82C52
- Single Chip UART/Baud Rate Generator
- Radiation Hardened
  - ▶ Latch Up Free EPI-CMOS
  - ▶ Total Dose > 100K Rad (SI)
  - ▶ Transient Upset > 10<sup>8</sup> Rad (SI)/sec
- Total Dose Capabilities Above 100K Rad (SI) are Available. Contact Factory for Details
- Uses Either Parallel Mode Crystal Circuit or External Frequency Source
- DC to 16MHz Operation (DC to 1M Baud Rate)
- On-Chip Baud Rate Generator - 72 Selectable Rates
- Microprocessor Bus Oriented Interface
- Modem Interface
- Line Break Generation and Detection
- Loopback and Echo Modes
- Interrupt Mode With Mask Capability
- TTL/CMOS Compatible Inputs/Outputs
- Hardened Field, Self-Aligned, Junction Isolated CMOS Process
- Single 5V Supply
- Low Power Consumption - 1mA/MHz Typical
- Full Military Temperature Range

### Description

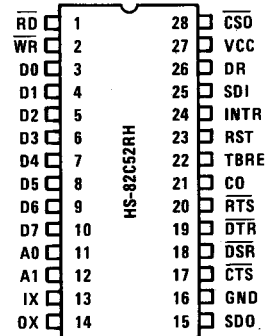
The Harris HS-82C52RH is a high performance, radiation hardened CMOS programmable Universal Asynchronous Receiver/Transmitter (UART) and a Baud Rate Generator (BRG) on a single chip. The receiver/transmitter will support data rates from DC to 1M baud asynchronously using a 16X clock (0 to 16MHz clock frequency). The on-chip Baud Rate Generator can be programmed for any one of 72 different baud rates using an industry standard crystal or an external frequency source. A unique pre-scale divide circuit has been designed to provide standard RS-232-C baud rates when using any one of three industry standard baud rate crystals (1.8432MHz, 2.4576MHz, or 3.072MHz).

Additional features include a complete modem interface, interrupt generating capability, and a programmable buffered clock output (CO) which can be programmed to provide either a buffered oscillator or a 16X baud rate clock for general purpose system usage.

Inputs and outputs have been designed with full TTL/CMOS compatibility in order to facilitate mixed TTL/CMOS system design. The Harris hardened field CMOS process results in performance equal to or greater than existing radiation resistant products at a fraction of the power.

### Pinout

TOP VIEW



### Functional Diagram

