UMC

UM82C6818

Real Time Clock Plus RAM (RTC)

Features

- Internal time base and oscillator
- Counts seconds, minutes, and hours of the day
- Counts days of the week, date, month, and year
- 3V to 6V operation
- Time base input options: 4.194304 MHz, 1.048576 MHz, or 32.768 kHz
- Time base oscillator for parallel resonant crystals
- Binary or BCD representation of time, calendar, and alarm
- 12 or 24-hour clock with AM and PM in 12-hour mode
- automatic end of month recognition
- automatic leap year compensation
- Multiplexed bus for pin efficiency

- Interfaced with software as 64 RAM locations
  - 14 bytes of clock and control registers
  - 50 bytes of general purpose RAM
- Status bit indicates data integrity
- Bus compatible interrupt signals ($\overline{IRQ}$)
- Three interrupts are separately software maskable and testable
  - Time-of-day alarm, once-per-second to once-per-day
  - Periodic rates from 30.5 μs to 500 ms
  - End-of-clock update cycle
- Programmable square-wave output signal
- Clock output may be used as microprocessor clock input
  - At time base frequency ÷1 or ÷4

General Description

The UM82C6818 Real-Time Clock plus RAM is fabricated in high performance CMOS process to interface with 1MHz processor buses. It combines three unique features: a complete time-of-day clock with alarm and one hundred year calendar, a programmable periodic interrupt and square-wave generator, and 50 bytes of static RAM.

Pin Configuration

NC	1	24	V$_{DD}$
OSC1	2	23	SQW
OSC2	3	22	PS
AD0	4	21	CKOUT
AD1	5	20	CKFS
AD2	6	19	$\overline{IRQ}$
AD3	7	18	$\overline{RESET}$
AD4	8	17	DS
AD5	9	16	NC
AD6	10	15	R/$\overline{W}$
AD7	11	14	AS
V$_{SS}$	12	13	$\overline{CE}$

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Block Diagram