

T.49-19.08

HD401220

—PRELIMINARY—

CMOS Compact MCU (Microcomputer Unit)

The HD401220 is a CMOS 8-bit single-chip microcomputer suitable for channel select control of a VTR or TV. The HD401220 contains on one chip the functions of central processing unit (CPU), clock generator, 2 kbytes of read-only memory (ROM), 32 bytes of random access memory (RAM), 256 bytes of electrically-erasable programmable read-only memory (EEPROM), 20 I/O lines, timer, serial communications interface (SCI), and a 14-bit pulse-width modulation digital-to-analog (PWM D/A) converter.

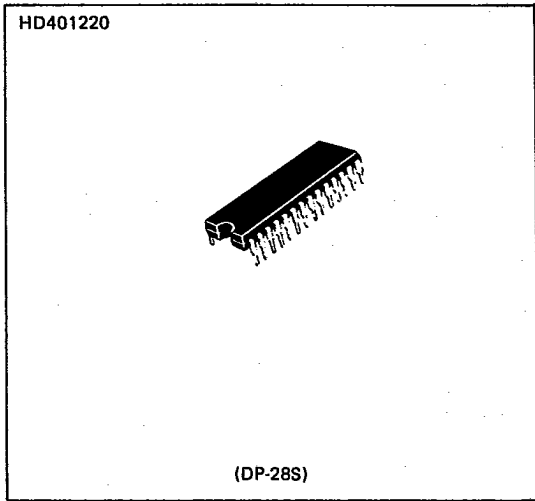
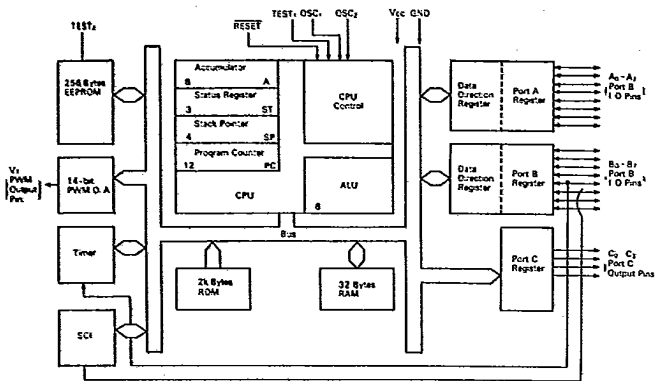
■ **HARDWARE FEATURES**

- 8-bit architecture
- 2,048 bytes of ROM
- 32 bytes of RAM
- 256 bytes of EEPROM
(data retention: > 10 years;
write/erase cycles: > 10⁴ times)
- 20 I/O lines (16 input/output, 4 output only)
- 4-bit timer (event counter)
- Clock synchronous serial interface
- D/A converter: 14-bit PWM type
- On-chip oscillator (crystal or ceramic filter)
- Interrupt sources: timer, SCI, software interrupt (SWI)
- Minimum instruction time: 2 μs
- Single power supply: V_{CC} = 5 V ± 10%
- 28-pin shrink-type dual-inline plastic package (DP-28S)

■ **SOFTWARE FEATURES**

- 29 simple instructions
- Direct memory access
- Bit manipulation instructions for I/O pins, registers, RAM bits
- Up to 7 nesting levels, including interrupts

■ **BLOCK DIAGRAM**



■ **PIN ARRANGEMENT**

TEST ₁	1	28	OSC ₂
TEST ₂	2	27	OSC ₁
A ₀	3	26	GND
A ₁	4	25	V _T
A ₂	5	24	RESET
A ₃	6	23	B ₀ /SCR
A ₄	7	22	B ₁ /SI
A ₅	8	21	B ₂ /SO
A ₆	9	20	B ₃ /EVENT
A ₇	10	19	B ₄
C ₀	11	18	B ₅
C ₁	12	17	B ₆
C ₂	13	16	B ₇
V _{CC}	14	15	C ₃

(Top view)