

APPLICATIONS:•
Internet Appliance

SM8521 Single-Chip Microcomputer

FEATURES

- SHARP original 8-bit CPU core
- Interrupts
 - Eight maskable interrupts
 - Three non-maskable interrupts
- Internal memory
 - 4KB ROM
 - 1KB RAM
- External memory
 - Maximum 2MB external memory can be accessible
- MMU
 - In each 8KB unit, external memory can be expanded up to 2MB MAX.
- LCD controller
 - Display sizes, 160 × 100 dots, 160 × 160 dots, 160 × 200 dots, 200 × 100 dots, 200 × 160 dots
 - Black and white, four gradations (interframe elimination)
 - VRAM, 160 × 200 dot × 2 phases or 200 × 160 dot × 2 phases (required externally)
- DMA
 - Transmission mode: ROM to VRAM, VRAM to VRAM, Extend RAM to VRAM, VRAM to Extend RAM
 - Transmission data: Rectangle (arbitrary size)

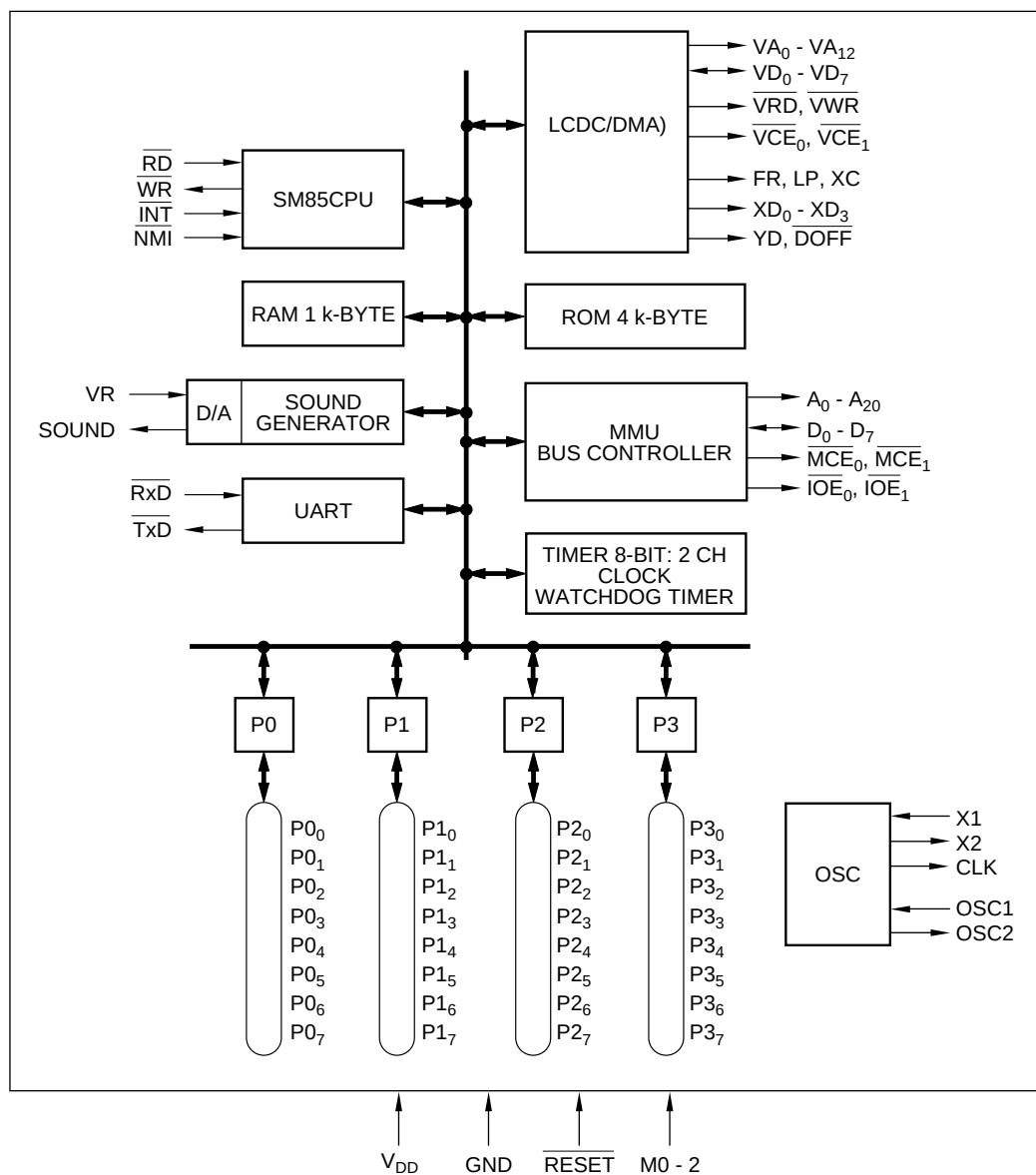
- Sound generator
 - Arbitrary waveform × 2 channels (16 gradations, 32 steps)
 - Noise × 1 channel
- Timer
 - 8-bit × 2 channels (with 8-bit prescaler)
 - Clock timer × 1 channel (1 second or 1 minute)
 - Watchdog timer
- PIO
 - I/O 8-bit × 4 channels
 - In each 2-bits, I/O, pull-up and open-drain can be set
 - IR carrier generator built-in
- UART
 - One channel
 - Baud rate: Timer 0 output only (Timer 0 output/32)
- Halt and stop standby modes
- Oscillation circuit
 - Main clock 4 MHz, 8 MHz, 10 MHz
 - Sub-clock 32.768 kHz
- Operating voltage 5 V ±10%
- 128-pin FQFP package

DESCRIPTION

The SM8521 is a single-chip microcomputer containing a SHARP original SM85CPU core and the required peripheral functions for dot matrix LCD display system.

The peripheral functions and memory of the SM8521 contain ROM, RAM, MMU, LCD controller, DMA, sound generator, timer, serial interface (UART) and PIO.

BLOCK DIAGRAM



8521-2