General Description

The MSU3132 is a monolithic talking microcomputer that can memorize voice up to 90 seconds using MOSEL qualified coding method (MPCM-5). It's an integration of traditional 4-bit microcotroller and voice chip with minimal external components.   Miscellaneous interface by 20-bit i/o are provided for versatile applications. With more than bit 10K bits ROM/RAM inside, this chip meets every intelligent novelty. Customer requested function and voice data will be built in by changing masks during fabrication.

Hardware Features

- Low current consumption
- Maximal function with minimal cost
- Current output could drive 8 ohm speaker with a transistor, Vout could drive buzzer directly.
- The voice content is stored up to 90 seconds at 6 KHz (81000h) and can be separated to 256 sections.
- Duration of each section can be different and is multiples of 100h.
- Duration of section with appended memory-less mute is up to 40 seconds (100000h).
- Each trigger can access a sentence, up to 256 sentences could be access. 1024 entry count are provided.

- Working at 2.4V through 6.0V
- Precise voice sample rate 8 KHz is provided.
- Auto ramp up and ramp down.
- Halt mode is provided.
  Very low current consumption at Halt mode.
- No LCD driver provided

- Built-In clock generator
- Built-In doubler, halver, tripler
- Internal program ROM : 1024 x 15 bits;
- Internal program RAM : 64 x 4 bits
- Internal stack RAM: 4x10 bits.
- Two 4-bit input ports
- Two 4-bit input/output ports
- One 4-bit output port

Software Features

- 76 instructions, in 39 mnemonics
- 4-level subroutine nesting (also used for interrupt)
- Two external factors (INT, S&M) for interrupt
- Two internal factors (timer, divider) for interrupt

Mask Options

- either open or hold transistor on S port & M port
- either pull down or pull up on Interrupt switch
- either leading edge or trailing edge on Interrupt edge
- either power back-up activated or not when power on
- either with reset or not when power on
- either 8 ms or 2 ms chattering removal time on S port & M port
- either slow (by 15.625 ms) or fast (by 224.14 us) set time timer
- either fast system clock (Fosc) or slow system clock (Fosc / 2)
- either Rosc or 32768 Hz crystal to play voice

Sample Applications

- handy game without LCD
- versatile timepiece without LCD
- talking timer without LCD
- intelligent calculator without LCD
- smart stationery without LCD
- talking home electronics without LCD
- talking education kit withot LCD

Development Supports

- Pid321 Voice Smart Programmer's Guide
- Pid345 Voice Smart ICE M9068 User's Manual

Development Supports

- Development tools are provided
- Software / Hardware programming guide is provided
- Evaluation chip U3040 is to be available soon

MSM9068   Developing Card
MSM9088   Program code emulation board
MSM9018   120" Sound emulation board

Specifications subject to change without notice, contact your sales representatives for the most recent information.