1. General Description

The F71808E which is the featured IO chip for PC system equippes one UART Port, Hardware Keyboard Controller, Hardware Monitor, ACPI management function and some GPIO pins. The F71808E integrated with hardware monitor, 8 sets of voltage sensor, 3 sets of creative auto-controlling fans and temperature sensor pins for the accurate dual current type temperature measurement for CPU thermal diode or external for temperature sensing. Besides, HWM also integrated AMD TSI interface and Intel PECI/Ibex SMBus interfaces for new platform temperature reading. For AMD platform, the F71808E provides the power sequence controller function which is selected by pin power on strapping.

The F71808E provides flexible features for multi-directional application. For instance, provides GPIO pins which can be programmed by register setting, accurate current mode H/W monitor will be worth in measurement of temperature, provides 3 modes fan speed control mechanism included Auto-Linear, Auto-Stage and Manual Mode for users' selection.

A power saving function which is in order to save the current consumption when the system is in the soft off state is also integrated a power saving function. The power saving function supports that system boot-on not only by pressing the power button but also by the wake-up event. When the system enters the S4/S5 state, F71808E can cut off the VSB power rail which supplies power source to the devices like the LAN chip, the chipset, the SIO, the audio codec, DRAM, and etc. The PC system can be simulated to G3-like state when system enters the S4/S5 states. At the G3-like state, the F71808E consumes the 5VSB power rail only. The integrated two control pins are utilized to turn on or off VSB power rail in the G3-like status. The turned on VSB rail is supplied to a wake up device to fulfil a low power consumption system which supports a wake up function.

The F71808E is powered by 3.3V and 5VSB voltage, with the LPC interface in 64-TQFP green package.

2. Feature List

- **General Functions**
  - Comply with LPC Spec. 1.1
  - Support DPM (Device Power Management), ACPI
  - Support AMD power sequence controller
  - Provides one UART, Hardware KBC
  - H/W monitor functions
  - Watch Dog Timer function
  - LED blink funciton
  - Support AMD TSI interface
  - Intel PECI interface and Ibex SMBus interface

- 28 GPIO pins for flexible application
- GPIO22-25 supports High/Low/Pulse/Level mode option
- GPIO22-25 supports interrupt event by PME/SERIRQ
- 24/48 MHz clock input
- Packaged in 64-TQFP and powered by 3.3VCC

UART

- High-speed 16C550 compatible UART with 16-byte FIFOs
- Fully programmable serial-interface characteristics
- Baud rate up to 115.2K

Keyboard Controller

- LPC interface support serial interrupt channel 1, 12.
- Two 16bit Programmable Address fully decoder, default 0x60 and 0x64.
- Support two PS/2 interface, one for PS/2 mouse and the other for keyboard.
- Keyboard's scan code support set1, set2.
- Programmable compatibility with the 8042.
- Support both interrupt and polling modes.
- Hardware Gate A20 and Hardware Keyboard Reset.

Hardware Monitor Functions

- 2 dual current type (±3℃) thermal inputs for CPU thermal diode and 2N3906 transistors
- Temperature range -40℃~127℃
- Integrate AMD TSI interface
- Integrate PECI 1.1a spec.
- Integrate Ibex SMBus interface
- 8 sets voltage monitoring (5 external and 3 internal powers)
- Voltage monitor supports Over Voltage Protection
- 3 fan speed monitoring inputs
- 3 fan speed PWM/DC control outputs(support 3 wire and 4 wire fans)
- Auto Stage mode (2-Limit and 3-Stage)/Auto Linear mode/Manual mode
- Issue PME# and OVT# hardware signals output
- WATCHDOG comparison of all monitored values

Watch Dog Timer

- Time resolution minute/second by option
- Maximum 256 minutes or 256 seconds
- Output signal from WDTRST# pin

Support AMD Power Sequence Controller

- **Power Saving Controller**
  - ACPI Timing and Power Control
  - Wake-up Supported

- **Package**
  - 64-pin TQFP Green Package

3. Key Specification

Supply Voltage	3.0V to 3.6V
Average Operating Supply Current	8 mA typ.

4. Block Diagram