

1. General Description

The F71883 is the featured IO chip for PC system. Equipped with one IEEE 1284 parallel port, two UART ports, KBC, Serial Peripheral Interface (SPI), 80-Port, SIR and one FDC. The F71883 integrated with hardware monitor, 9 sets of voltage sensor, 4 sets of creative auto-controlling fans and 4 temperature sensor pins for the accurate dual current type temp. measurement for CPU thermal diode or external transistors 2N3906.

The F71883 provides flexible features for multi-directional application. For instance, supports 6/12 pins CPU VID controlling for VRM9.0/10.0/11* and CPU VID OTF (On The Fly), provides 32 GPIO pins (multi-pin), IRQ sharing function also designed in UART feature for particular usage and accurate current mode H/W monitor will be worth in measurement of temperature, provides 3 modes fan speed control mechanism included Manual Mode/Speed Mode/Temperature Mode for users' selection Additionally, provides easy voltage sensor input (VSI) function for sensing Vcore voltage, then output (VSO) the offset voltage for over/under voltage change use.

Further, the F71883 supports an automatic/dynamic over-voltage function for application of over-clocking or under-clocking. This function provides Turbo# pins by external trigger signal to improve the CPU's performance by voltage offset automatically when system is going to run over-clocking or under-clocking. Due to achieve this action, suggest F75133S Loading Gauge chip can be the part which detects system/CPU loading to decide when issues the over-clocking/under-clocking signal for system executing. Briefly, user can gain more features on motherboard by these two parts which improve performance and efficiency.

The F71883 also integrated SPI interface and 80-Port. The SPI interface is for BIOS usage, and the 80-Port is for engineering usage. Others, the F71883 supports newest AMDSI and Intel PECCI/SST interfaces for temperature use. These features will help you more and improve product value. Finally, the F71883 is powered by 3.3V voltage, with the LPC interface in the package of 128-QFP green package.

2. Feature List

● General Functions

- Comply with LPC Spec. 1.0
- Support DPM (Device Power Management), ACPI
- 6/12 VID pins for VRM9.0/10.0/11.0* and CPU VID OTF (On The Fly)
- Easy voltage sensor I/O (VSI/VSO) for Vcore change use.
- Support automatic and dynamic voltage change function (Turbo pins)
- Provides one FDC, two UARTs, KBC and Parallel Port
- H/W monitor functions

- SPI interface for BIOS use
- 80-Port interface.
- Support AMD SID/SIC interface and Intel SST/PECI interface
- 32 GPIO Pins for flexible application
- 24/48 MHz clock input
- Packaged in 128-PQFP green package and powered by 3.3VCC

● **FDC**

- Compatible with IBM PC AT disk drive systems
- Variable write pre-compensation with track selectable capability
- Support vertical recording format
- DMA enable logic
- 16-byte data FIFOs
- Support floppy disk drives and tape drives
- Detects all overrun and under run conditions
- Built-in address mark detection circuit to simplify the read electronics
- Completely compatible with industry standard 82077
- 360K/720K/1.2M/1.44M/2.88M format; 250K, 300K, 500K, 1M, 2M bps data transfer rate

● **UART**

- Two high-speed 16C550 compatible UART with 16-byte FIFOs
- Fully programmable serial-interface characteristics
- Baud rate up to 115.2K
- Support IRQ sharing

● **Infrared**

- Support IrDA version 1.0 SIR protocol with maximum baud rate up to 115.2K bps

● **Parallel Port**

- One PS/2 compatible bi-directional parallel port
- Support Enhanced Parallel Port (EPP) – Compatible with IEEE 1284 specification
- Support Extended Capabilities Port (ECP) – Compatible with IEEE 1284 specification
- Enhanced printer port back-drive current protection

● **Keyboard Controller**

- 8042 based with optional F/W from AMIKKEY™-2, with 2K bytes of programmable ROM, and 256 bytes of RAM

- Asynchronous Access to Two Data Registers and One status Register
- Software compatibility with the 8042
- Support PS/2 mouse
- Support both interrupt and polling modes
- Fast Gate A20 and Hardware Keyboard Reset
- 6 MHz, 8 MHz, 12 MHz, or 16 MHz operating frequency

● **Hardware Monitor Functions**

- 3 dual current type ($\pm 3^{\circ}\text{C}$) thermal inputs for CPU thermal diode and 2N3906 transistors
- Temperature range $-20^{\circ}\text{C}\sim 145^{\circ}\text{C}$ (One is from $-20\sim 127^{\circ}\text{C}$, two sets are from $0\sim 145^{\circ}\text{C}$)
- 9 sets voltage monitoring (6 external and 3 internal powers)
- High limit signal (SMI#) for Vcore level
- 4 fan speed monitoring inputs
- 4 fan speed PWM/DC control outputs(support 3 wire and 4 wire fans)
- Issue PME# and OVT# hardware signals output
- Case intrusion detection circuit
- WATCHDOG# comparison of all monitored values

● **Serial Peripheral Interface Compatible**

- Support SPI bridge function for BIOS use

● **80-Port Interface**

- Monitor 0x80 Port status and output the value via the signals defined for 7-segment display.
- High nibble and low nibble are outputted interleaved at 1KHz frequency.

● **Integrate AMD SI Interface**

● **Integrate Intel PECCI/SST Interface**

● **Package**

- 128-pin PQFP green package

Noted: Patented TW207103 TW207104 TW220442 US6788131 B1 TWI235231 TW237183 TWI263778

3. Key Specification

- Supply Voltage 3.0V to 3.6V
- Operating Supply Current ----- mA typ.

4. Block Diagram

