



1. General Description

The F71882 is the featured IO chip for PC system. Equipped with one IEEE 1284 parallel port, two UART ports, KBC, Serial Peripheral Interface (SPI), SIR and one FDC. The F71882 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 F71882 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 F71882 supports an automatic/dynamic over-voltage function for application of over-clocking or under-clocking. This function provides a pin 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 F71882 also integrated SPI interface. The SPI interface is for SPI BIOS usage. Others, the F71882 supports newest AMDSI and Intel PECI/SST interfaces for temperature use. These features as above description will help you more and improve product value. Finally, the F71882 is powered by 3.3V voltage, with the LPC interface in the package of 128-PQFP.

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
 (2 Turbo pins Turbo1# and Turbo2# for VID usage)
- > Provides one FDC, two UARTs, KBC and Parallel Port



- > H/W monitor functions
- > SPI interface for BIOS usage
- > 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 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 AMIKKEYTM-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 ($\pm 3^{\circ}$ C) thermal inputs for CPU thermal diode and 2N3906 transistors
- ➤ Temperature range -20°C ~145°C (One is from -20~127°C, others are from 0~ 145°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
- Support AMDSI interface

Serial Peripheral Interface Compatible

- > Support SPI bridge function for BIOS use
- Integrate AMD SI Interface
- Integrate Intel PECI/SST Interface

Package

> 128-pin PQFP Green Package

Noted: Patented TW207103 TW207104 TW220442 US6788131 B1 TWI235231 TW237183 TWI263778 CN ZL 2004 1 0043269.4



3. Key Specification

P	Supply Voltage	3.0V to 3.6V
2	Operating Supply Current	mA typ.

4. Block Diagram

