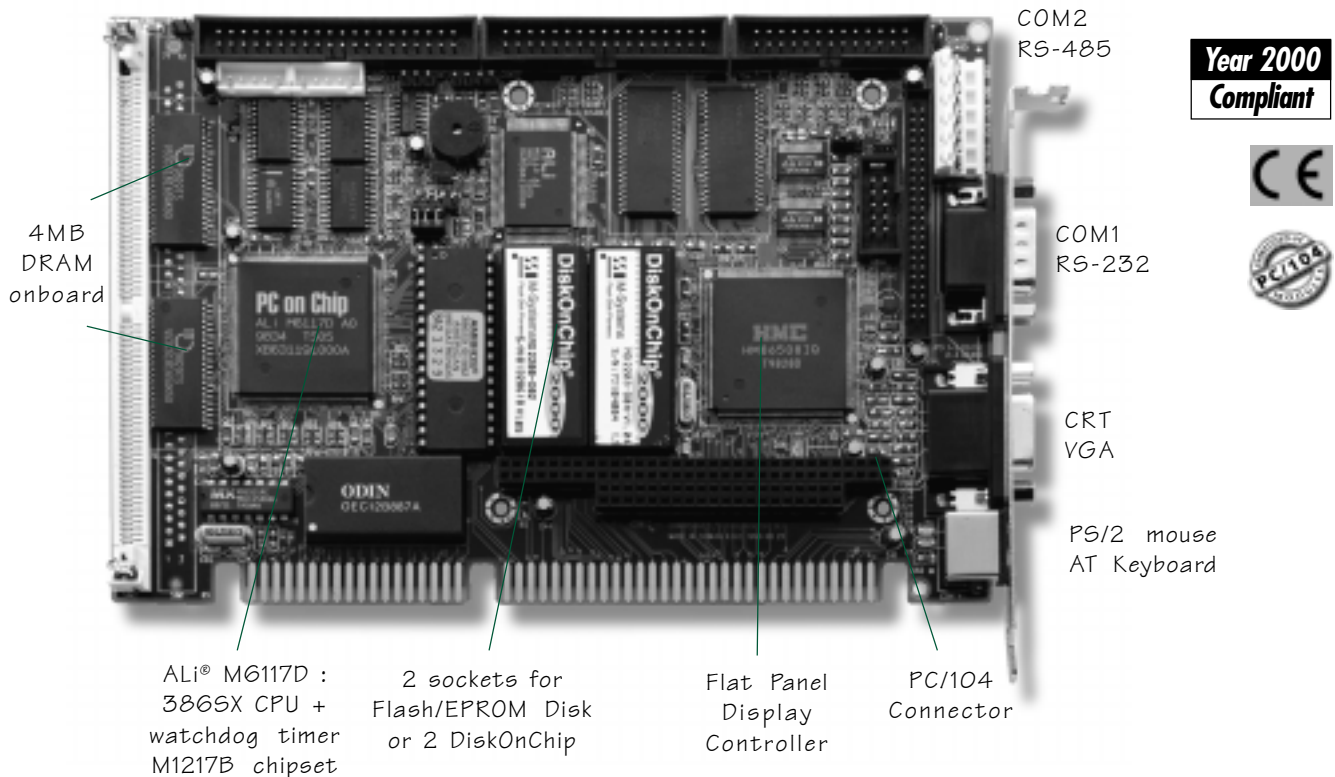


PIA-638

Embedded 386SX-40 CPU Card

with Flat Panel / CRT SVGA, Flash/ROM Disk or 2 DiskOnChip



Special Features

- Low power consumption by using embedded chipset ALI M6117D => chipset + CPU + watchdog
- Flat Panel Display Controller
- EDO DRAM 1~16 MB in single SIMM socket (bank 1), 4 MB EDO onboard (bank 0)
- 2 Onboard Flash/EPROM Disks or DiskOnChip Flash disk
- Enhanced IDE and high speed Multi I/O supports RS-232/485 and a PS/2 mouse
- AMI 386SX BIOS
- PC/104 connector

The PIA-638 is all-in-one 386SX-40 single board computer with Flat Panel Display Controller. Based on the ALI's M6117D microprocessor optimized for embedded designs, the board is suitable for simple control tasks that require a graphical interface.

ALI's M6117D combines an 386SX-40 compatible processor, a watchdog timer and ALI's M1217B on a single chip. Together with its PC/104 bus and onboard Flash/ROM or dual DiskOnChip disk the card easily qualifies for low power SBC applications.

FLAT PANEL DISPLAY

The board has an ISA-based Flat Panel controller with HMC HM86508 chipset supporting standard SVGA. A large variety of displays are supported by a 8/16-bit, a 18-bit and a 24-bit universal panel interface.

ENHANCED IDE, HIGH SPEED I/O

In addition, the PIA-638 has one PS/2 mouse port, two serial ports (RS-232 x 1, RS-232/485 x 1), one bi-directional printer port that supports SPP, ECP and EPP modes, an enhanced IDE HDD interface that supports PIO mode 4, and a floppy disk controller.

FLASH/EPROM DISK OR DISKONCHIP

Two onboard sockets can accept up to 2 MB EPROM or 1 MB Flash memory. Both sockets can by jumper setting be assigned to hold a DiskOnChip of up to 72 MB.

WATCHDOG TIMER

The watchdog timer optionally monitors system operation. The watchdog timer is programmable by software. It can either generate an NMI or Reset or can be assigned to a user specified IRQ.

Specifications

- **CPU + Chipset** : Ali M6117D is an implementation of an INTEL compatible 386SX-40 CPU a watchdog timer and Ali's M1217B chipset
- **BIOS** : AMI system BIOS
- **Green Function** : power saving options supported in BIOS. DOZE / STANDBY / SUSPEND modes
- **DRAM Memory**: 4 MB up to 20 MB of EDO DRAM, 4 MB EDO onboard, 1 sockets for 72-pin single side SIMM
- **Bus Interface** : ISA and PC/104
- **Data Bus** : 16-bit
- **Bus Speeds** : ISA - 8 MHz, PC/104 - 8 MHz (above values are defaults, bus speeds are programmable up to 16 MHz)
- **DMA Controllers** : 8237 x 2
- **DMA Channels** : 7
- **Interrupt Controllers** : 8259 x 2
- **Interrupt Levels** : 15
- **Enhanced IDE** : supports one port and up to two hard drives or Enhanced IDE devices of PIO mode 4. BIOS enabled/disabled
- **Watchdog Timer** : generates a system RESET or NMI when your application loses control over the system. Optionally the watchdog can trigger a user specified IRQ. The watchdog is configurable from 30.5 μ s to 512 seconds (in 30.5 μ s segments)
- **Real-time Clock** : Dallas DS-12887 or compatible with lithium battery backup for 10 years of data retention. CMOS data backup of BIOS setup and BIOS default.
- **Keyboard and Mouse Connectors**:
Mini DIN connector for AT-keyboard and PS2 Mouse
Internal 5-pin header for AT-keyboard
Internal 5-pin header for PS/2-mouse

HIGH SPEED MULTI I/O

- **Chipset** : Ali 5113 (jumper enable/disable)
- **Serial ports**: one external high speed RS-232 port, one external high speed RS-232/485 port (jumper selectable). Both with 16C550 UART and 16 byte FIFO. BIOS enabled/disabled
- **Floppy Disk Drive Interface**: supports up to two floppy drives, 5¼" (360 KB or 1.2 MB) and 3½" (720 KB, 1.44 MB). BIOS enabled/disabled
- **Bi-directional Parallel Port**: supports SPP, EPP and ECP mode. BIOS enabled/disabled

FLAT PANEL DISPLAY CONTROLLER

- **Chipset** : HMC HM86508
- **Memory** : 1 MB onboard
- **System Bus** : 16-bit ISA bus
- **Panel Data Bus** : 24-bit
- **Display** : CRT and Flat Panel Mono/TFT/DSTN/EL
- **Supported Flat Panels** :

NEC	NL-6448AC26-04	TFT 10.4" 640X480
NEC	NL-6448AC30-10	TFT 9.4" 640X480
NEC	NL-6448AC30-03	TFT 9.4" 640X480
NEC	NL-6448AC33-10	TFT 10.4" 640X480
NEC	NL-6448AC33-13	TFT 10.4" 640X480
NEC	NL-6448AC33-18	TFT 10.4" 640X480
NEC	NL-8060BC31-09	TFT 12" 800X600
NEC	NL-8060AC31-02	TFT 10.4" 800X600
NEC	NL-8060AC31-01	TFT 10.4" 800X600
SHARP	LQ10D42	TFT 10.4" 640X480
SHARP	LQ10D421	TFT 10.4" 640X480
SHARP	LM64C35P	MONO 10.4" 640X480
Planar	EL640.480-AA1	EL color 10.4" 640X480

Check for other displays.
- **Compatibility** : IBM VGA hardware

ONBOARD FLASH/ROM DISK

- **Sockets** : 2 (DIP type)
- **Capacity** : 2 MB (EPROM), 1 MB (Flash)
- **Memory support** :
Flash : SST28SF040 or AT29C040A
EPROM : 27010, 27020, 27040 or 27080

FLASH DISK DISKONCHIP®

- **Package** : Single Chip FlashDisk in 32-pin DIP JEDEC
- **Capacity** : 1-72 MByte capacity (future capacities: 144 MByte and up)
- **Data Reliability** : ECC/EDC error correction
- **Memory Window** : 8 KByte

ENVIRONMENTAL AND POWER

- **Power Requirements**: single voltage +5 V @ 800 mA with 4 MB DRAM and 1 MB Flash disk installed
- **Board Dimensions** : 185 (L) x 122 (W) mm.
- **Board Weight** : 0.24 Kg
- **Operating Temperature**: -10~+70 °C

Ordering

- ❑ **PIA-638DV**: Embedded 386SX-40 CPU Card with EDO support, Flat Panel Display Controller and 2 sockets for Flash/ROM or DiskOnChip including 4 MB EDO onboard