



MESA ELECTRONICS

FPWX FLAT PANEL PC

FEATURES:

- Tiny user interface PC
- 128 x 64 pixel backlit LCD display
- 9.2 MHz PC compatible CPU
- Built-in ROM-DOS
- 128K or 512K bytes of RAM
- Up to 512K flash or EPROM disk
- RS-232 / RS-485 serial port
- 16 bits of parallel I/O
- 16 display-labeled soft-keys
- Low cost

The FPWX is a tiny PC compatible CPU with integrated LCD graphic display and a thin, flat form factor (2.6"H x 4.5"W x 1.0"D). The FPWX is a complete OEM embedded system user interface CPU with display, keyboard, serial and parallel I/O, flash disk, and power supply.

Since the FPWX is PC compatible, most standard PC development tools and languages can be used for application programming.

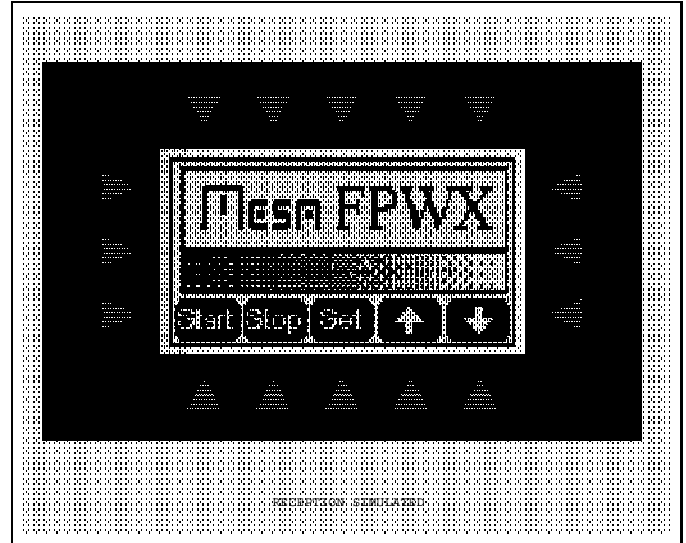
The FPWX has ROM-DOS pre-installed in its BIOS EPROM, and needs only your application program to make a complete user interface.

The FPWX display is a 128 by 64 resolution monochrome, graphic, backlit or reflective LCD. Display dot pitch is .52 mm.

Text display modes include a 16 character by 8 line mode (8X8 font) and a 21 character by 8 line mode (5X7 font).

Graphics are handled directly by the FPWX BIOS (drawdot, drawline, and bitblt.) A BGI graphics driver is supplied to support Borland compilers. Blinking graphics and 3 level gray scale are possible by using multiple frame buffers.

FPWX display contrast can be adjusted via built-in software commands. The optional EL backlight can be turned on and off under software control.



The keyswitch array surrounds the display area so that the keys can be labeled in the display. Each key can return a user selectable scan code. The FPWX BIOS provides support for soft-key graphic and text labels.

The FPWX requires only +5V power for operation, since display and RS-232 interface power are generated on card. The low operating power and small size of the FPWX make it well suited to portable applications. Maximum operating current is 160 mA. with backlight off. FPWX Power can be reduced to approximately 50 mA. by halting the CPU.

The FPWX CPU is a 9.2 MHz PC compatible processor (NEC V40) with 128K or 512K of system RAM, a 128K or 256K BIOS EPROM, and a socket for one 128 to 512K byte disk emulator EPROM or flash EEPROM.

The on card flash disk is supported by the FPWX BIOS, and appears to the system as a standard hard disk. All utilities for using the flash disk are provided with the FPWX.

On card I/O includes a RS-232 / RS-485 serial port capable of up to 115K baud, 16 bits of parallel I/O (2/3 82C55), an eight input, 8 bit (optionally 10 bit) A-D converter, and an optional battery backed clock calendar.

A 64 pin XT bus pin-out compatible header is provided for user expansion.

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PROCESSOR: The FPWX uses a 9.216 MHz NEC V40 processor. This processor has about 3 to 4 times the processing speed of PC-XT. The V40 has a built in 82C59A compatible interrupt controller, and an 82C54 compatible timer counter.

MEMORY: The system RAM can be either 128K byte or 512K byte depending on FPWX model. BIOS socket can accommodate 128K byte or 256K byte PLCC EPROMs or EEPROMS (stock BIOS is 128K EPROM.) A 128K flash EEPROM BIOS is suggested for development use.

Disk emulator socket can be used as additional ROM space if disk emulator is not needed.

DISPLAY: 128H by 64V pixel transfective LCD display with optional EL backlight. Display is always used in graphics mode, but BIOS has various text output formats. Multi-plane screen buffer allows blinking graphics and overlays without redrawing the display. BIOS support for drawing graphic objects at arbitrary pixel boundaries (bitblt, drawdot, and line drawing.) Tools are supplied for embedding custom graphics in BIOS. Graphic objects can be created with standard PC paint type programs that output .PCX files.

KEYBOARD: 16 key membrane switch surrounds display area, allowing display labeled keys. BIOS scans keyboard and allows dynamic reassignment of keyboard generated characters. BIOS supports labeled key graphics. On card speaker provides audible feedback (key click).

DISK EMULATOR: one 32 pin PLCC socket for 128K byte to 512K byte EPROM or 5V flash EEPROM. Emulated drive appears exactly as normal hard drive. All tools for using flash EEPROM and EPROM disks provided.

POWER SUPPLY: the FPWX requires 4.5 to 5.5 VDC for operation. LCD and RS-232 power is generated on card. Maximum current is 200 mA with backlight on. Maximum current is 160 mA with backlight off. Current can be reduced to approximately 50 mA by halting CPU. Display and keyboard scan remain active in halt state.

SERIAL PORT: RS-232 / RS-485 serial port uses built-in V40 serial port. Interrupt driven, and capable of baud rates of up to 115.2K baud. RS-485 mode has driver disable capability for multi-drop applications. In RS-232 mode, serial port has one handshake in and one handshake out line. Higher baud rates match PC baud rates. Connector is 10 pin dual row 2 mm header, FPWX power is supplied on same header.

BUS EXPANSION CONNECTOR: 64 pin 2 mm header with provision for mounting daughter cards. Connector matches XT bus pin-out.

PARALLEL PORT: 16 bits of parallel I/O. Uses port A and B of 82C55 (port C is used for membrane switch scanning but is also available on connector). Can be configured as 16 in, 16 out, or 8 in 8 out. Pull-up resistors provided on port B. Connector is 26 pin dual row 2 mm header.

REMOTE LOAD: Application program can be loaded over serial port for quick application development. Host for remote load is any PC with serial port and hard disk.

ANALOG IN: 8 input A-D converter with 10 or optionally 12 bits of resolution. 2.5V full scale input. Connector is 10 pin dual row 2 mm header.

CLOCK CALENDAR: Optional Lithium cell backed clock calendar. Minimum 2 year power off Lithium cell life.

ORDERING INFORMATION:

FPWX-R128K	128K SYSTEM RAM
FPWX-R512K	512K SYSTEM RAM

ADD -EB for EL Backlight -CC for battery backed clock calendar -FB for flash BIOS