



## **NORMAL OPERATION UNDER ABNORMAL CONDITIONS**

*MAY WE INTRODUCE THE WORLD'S FIRST PENTIUM-BASED, PC/104-PLUS INDUSTRIAL SBC FOR OUTDOOR & MOBILE APPLICATIONS?*

- ▲ Low power consumption
- ▲ Extended operating temperature  
-40°C to +80°C
- ▲ Intel Pentium MMX™ or AMD K6
- ▲ Processor speeds up to 266 MHz
- ▲ Intel 82430HX chipset
- ▲ Up to 64 MB EDO DRAM  
soldered on-board
- ▲ Up to 72 MB of on-board Flash
- ▲ 10/100 Base-T Ethernet interface  
on PCI local bus
- ▲ Full PC/104-Plus bus
- ▲ Dual EIDE Interfaces
- ▲ Flat Panel / CRT SVGA interface  
with LVDS
- ▲ Small footprint 5" x 8"

TME has once again combined a high level of integration with up-to-date microprocessor technology for use in its PC-compatible SBCs. Utilizing the Intel Pentium MMX processor, TME has created a high-performance and space-efficient solution for an array of embedded applications. With a footprint of only 5" x 8", The **2111** provides an excellent platform for mobile and outdoor applications, where shock, vibration, temperature and humidity are main concerns. Multimedia Kiosk, Intelligent Terminal, Process Control, Flight Simulator, Telecomm Switching, and Ruggedized Military Equipment are a few applications in which the **2111** makes an excellent choice. Contact your local representative or TME today for current pricing and availability.



# 2111 Technical Specifications

## CPU

Supports Intel Pentium MMX™ and AMD K6  
Processor speeds of 133, 166, 200, 233 or 266 MHz

## CHIPSETS

Intel 82430HX  
C&T 65548/50 video  
Intel 82558 10/100Base-T  
NS87306 super I/O

## DRAM

Soldered on-board EDO memory in 16, 32 MB or 64 MB configurations

## CACHE

Standard 512KB Synchronous Burst Cache Memory

## FLASH / SOLID STATE DRIVE

Optional 2 to 72 MB of Flash configured as Solid State Drive on-board  
M-System Flash Disk-on-Chip (DOC) with built-in EDC / ECC  
Supports DOS, Windows 95, WindowsNT, QNX, pSOS and VxWork OS\*

\* Contact TME for availability of drivers supporting these and other Operating Systems

## BUS

Full 16-bit ISA and PC/104 bus  
32-bit PCI on PC/104-Plus

## DC SUPPLY

On-board High Efficiency Switch Mode DC/DC converter provides  
3.3V output  
Standard 5V regulated supply input only  
Optional unregulated 10-26V supply input only for direct battery-operated applications

## DIMENSIONS

5" x 8" x 0.7"

## THERMAL MANAGEMENT

Over-heat protection and over-heat slow down  
Thermal-controlled CPU fan connectors  
Supports temperature sensing with digital output

## I/O

### STANDARD I/O PACKAGE

7 DMA Channels (8237 compatible)  
15 Interrupt channels (8259 compatible)

### Floppy

Floppy controller includes 2.88 MB support on 2x17 shrouded header

### Serial ports

Two 16C550 RS-232C COM port with FIFO buffering and 15 KV ESD protection

### Parallel port

Parallel printer port with ECP / EPP support

### Enhanced IDE

Dual EIDE on PCI local bus supporting up to 4 drives on 2x22 shrouded header for direct connection to 2.5" IDE drives

### Keyboard & mouse ports

AT-compatible PS/2 mouse and keyboard ports

### Universal Serial Bus

Two USB ports

### OPTIONAL I/O FEATURES

#### VIDEO INTERFACE

On-board Flat Panel & CRT display interface  
LVDS interface capable of driving Flat Panel display at a distance of 30'  
Support for LCD monochrome, S/S and D/D STN, TFT, EL and gas plasma  
Flat Panel displays to 1280x1024 resolution  
1 MB display memory  
Supports 3.3V or 5V Flat Panel display

#### NETWORK FEATURES

Intel 82558 with 32-bit PCI local bus interface  
10/100Base-T/TX Ethernet on-board  
Supports PCI bus Master  
Supports Remote Boot-ROM for diskless system  
Supports IEEE 802-3; ANSI 8802-3 and Ethernet standards  
Configuration information stored in SEEPROM for jumperless configuration

## OPERATING SYSTEMS

WindowsCE, Windows NT, Windows95, Windows98, SCO UNIX, UNIX, LINUS, LYNX, VxWorks, Novell, OS/2, LANtastic and more\*

\* Contact TME for complete list of available Operating Systems

## EMBEDDED PC SYSTEM FEATURES

Small and rugged form factor 5" x 8"  
Watchdog Timer with software or hardware disable  
128 bytes of SEEPROM for CMOS data backup  
128 bytes of SEEPROM for manufacturing information  
256 bytes of SEEPROM of user system parameters  
64 KB of extension ROM using on-board programmable Flash for user firmware

AT-compatible Real Time Clock with 50 PPM accuracy

15 KV ESD protection on serial ports

Power Failure detection circuitry

7-year Lithium battery for Battery-Backed SRAM

5-year product availability support (subject to component availability)

Warranty of product consistency

## EMBEDDED SYSTEM BIOS FEATURES

Full AT-compatible BIOS

BIOS stored in Flash EPROM to facilitate remote firmware update capability

Optional no-fail boot, Fast Boot and Secured-boot

Optional batteryless operation

Optional customer sign-on message boot up

Advanced firmware setup utility for system parameters and I/O configuration

Power saving mode with "green PC"

## MTBF

Estimated at over 250,000 hours

## ENVIRONMENTAL

### OPERATION

Temperature: 0°C to 60°C @ 166 MHz operation / 200 LFM minimum airflow

Optional extended temperature: -40°C to 80°C\*

Humidity: 5% to 90% non-condensing

Shock: 30 G / Vibration: 10 G

\* With 3.3V EDO DRAM, 166 MHz MMX running 100 MHz and special heatsink only

### STORAGE

Temp: -40°C to 95°C

Humidity: 5% to 95% non-condensing

Shock: 50 G / Vibration: 10 G

## POWER REQUIREMENTS

Pentium MMX (MHz)	133	166	200	233	266
ICC 5V ±5% Typical *	2.3A	2.7A	3.1A	3.5A	3.8A
ICC 5V ±5% Sleep	0.8A	0.8A	0.8A	0.8A	0.8A

\*Power consumption measured with 133 MHz Pentium MMX processor, 32 MB EDO DRAM, LCD, network interface and all standard I/O

## SELECTION GUIDE

To order use 2111C-XX-V-N-M-RV

<b>C</b>	4 - Pentium 133 MHz B - Pentium 133 MHz MMX C - Pentium 166 MHz MMX D - Pentium 200 MHz MMX E - Pentium 233 MHz MMX G - AMD K6 266 MHz
<b>XX</b>	00 - No Flash disk installed XX - Contact TME for highest configurations
<b>V</b>	0 - No video / Flat Panel interface installed 4 - PCI video interface for CRT and Flat Panel, with 1 MB video, C&T 65548 5 - PCI video interface for CRT and Flat Panel, with 1 MB video, C&T 65550
<b>N</b>	0 - No network interface installed 1 - 10/100Base-T network interface 2 - 10/100Base-T network interface with remote Boot-ROM
<b>M</b>	16 - 16 MB of EDO DRAM 32 - 32 MB of EDO DRAM 64 - 64 MB of EDO DRAM
<b>RV</b>	XX - Contact TME for current revision information

Specifications subject to change without notice. TME reserves the right to make changes in these specifications without notice.

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5149 Brasco Boulevard Mississauga, Ontario Canada L4W 2A6 - Tel: 905-625-3203 - Fax: 905-625-3717 - Email: sales@tme-inc.com - Web: www.tme-inc.com

