PCM-9375

AMD Geode™ LX800 3.5" SBC, VGA, LVDS, LCD, 2 Ethernet, IDE, SATA, PC/104

TFT LCD · Printer · COM2, 3, 4 · Stand-by Power · Power · Audio · GPIO · SATA · ATX Power button · LCD Inverter · PC/104 · LAN2 · COM 1 · LAN 1 · KB/MS · USB · VGA · USB · Reset button
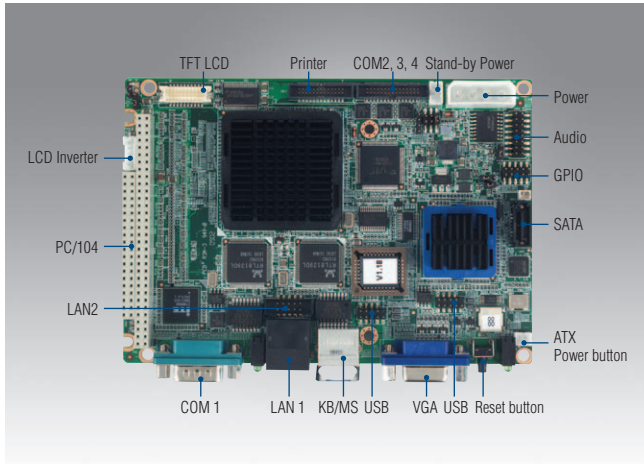
Features

- AMD Geode™ low power LX800 500 MHz processor
- 24-bit TFT LCD interface, 18-bit LVDS LCD display
- Dual 10/100 Mbps Fast Ethernet
- Supports up to 4 COM ports, 4 USB ports, PC/104 expansion
- Supports embedded software APIs and utilities

**Software APIs:** GPIO · H/W Monitor · Watchdog · Brightness · SMBus · Backlight On/Off

Utilities: BIOS flash · Monitoring

VxWorks® · Windows Embedded · Linux · QNX · CE · FCC

Specifications

Processor System	CPU	AMD Geode LX800 processor, up to 500 MHz
	Frequency	500 MHz
	L2 Cache	128 KB
	System Chipset	AMD Geode LX800
	BIOS	Award 4 Mb Flash ROM BIOS
Memory	Technology	DDR 333/400 MHz
	Max. Capacity	512 MB
	Socket	1 x 200-pin SODIMM
Display	Chipset	AMD Geode LX800
	VRAM	Optimized shared memory architecture up to 64 MB system memory
	Graphics Engine	AMD CS5536 2D engine
	LVDS	1 x Single channel 18-bit LVDS (PCM-9375E), up to 1600 x 1200 x 32 bpp at 60 Hz
	VGA	VGA: up to 1920 x 1440 @ 32 bpp (85 Hz)
	TTL LCD	1 x 24-bit TTL (PCM-9375F), up to 1600 x 1200 x 32 bpp at 60 Hz
	Dual Display	VGA+TTL, VGA+LVDS
Ethernet	Speed	10/100 Mbps (Supports Wake on LAN)
	Controller	Ethernet1 Realtek RTL3139 10/100 Mbps Ethernet2 Realtek RTL8139 10/100 Mbps
	Connector	RJ-45 on Ethernet1, box header on Ethernet2
Audio	Chipset	Realtek ALC203 AC97, Line-in, Line-out, Mic-in
WatchDog Timer		Output System reset, Programmable counter from 1 ~ 255 minutes/ seconds
Storage	CompactFlash	1
	SATA	1 x SATA (Max. Data Transfer Rate 150 MB/s) (only for PCM-9375S)
	IDE	1 (only for PCM-9375F/9375E)
	Floppy	1 (Shared with LPT)
Rear I/O	Serial	1 (COM1 supports RS-232) (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)
	Ethernet	1 (10/100 Mbps)
	PS/2 KB/Mouse	1
	VGA	1
	Reset Button	1
Internal I/O	USB	4 x USB 2.0
	Serial	3 x COM (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV) COM3/COM4 supports RS-232 COM2 supports RS-232/422/485 (Supports RS-485 auto flow control)
	IDE	1 UDMA 33/66
	Parallel (LPT)	1 (Shared with LPT)
	FDD	1 (Shared with LPT)
	GPIO	8-bit GPIO
	I2C	optional
Expansion	PC/104 Slot	PC/104 Expansion(8/16-Bit ISA)
Power	Power Type	AT/ATX
	Power Supply Voltage	5V + 5% (+12V option for LCD, PC/104)
	Power Consumption (Typical)	Typical: 0.6 A @ 5 V, 0.03 A @ 12 V
	Power Consumption (Max, test in HCT)	MAX: 1.2 A @ 5 V, 0.23 A @ 12 V
	Power Management	APM 1.2, ACPI
	Battery	Lithium 3 V/196 mAH
Environment	Operational	0 ~ 60° C (32 ~ 140° F) (Operating humidity: 40° C @ 95% RH non-condensing)
	Non-Operational	-40° C ~ 85° C and 60° C @ 95% RH non-condensing
Physical Characteristics	Dimensions (L x W)	146 x 102 mm (5.7" x 4")
	Weight	0.85 kg (1.87 lb), weight of total package
	Total Height	25.2mm

Board Diagram
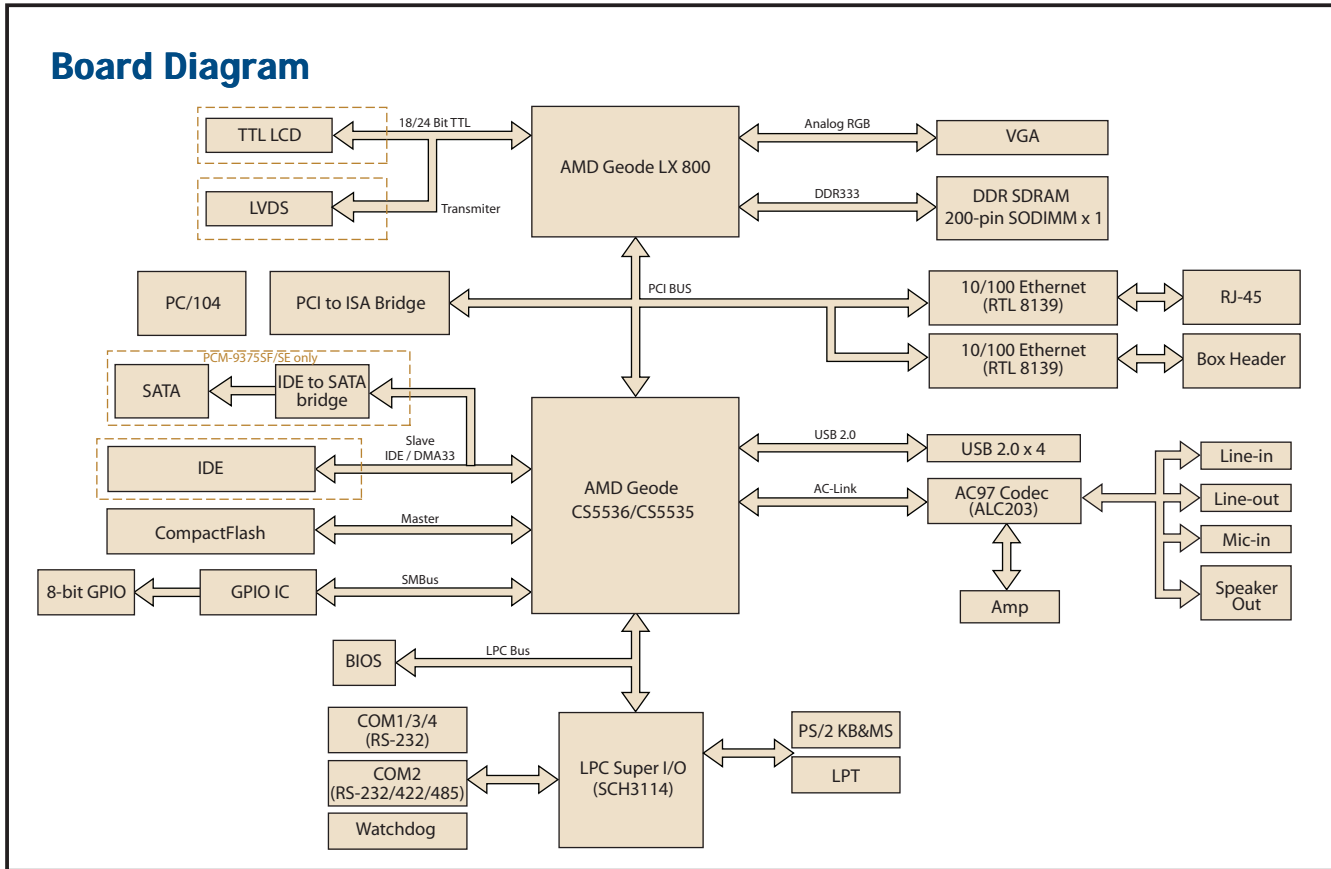
Ordering Information

Part No.	CPU	VGA	LVDS	TTL	10/100 Ethernet	IDE/SATA	USB2.0	RS-232	RS-232/ 422/485	LPT	GPIO	CF	PC/104	Thermal Solution	Operating Temp.
PCM-9375F-J0A1E	AMD LX800	1	-	1	2	1 IDE	4	3	1	1	8-bit	1	1	Passive	0 ~ 60° C
PCM-9375E-J0A1E	AMD LX800	1	1	-	2	1 IDE	4	3	1	1	8-bit	1	1	Passive	0 ~ 60° C
PCM-9375SF-J0A1E	AMD LX800	1	-	1	2	1 SATA	4	3	1	1	8-bit	1	1	Passive	0 ~ 60° C
PCM-9375SE-J0A1E	AMD LX800	1	1	-	2	1 SATA	4	3	1	1	8-bit	1	1	Passive	0 ~ 60° C
PCM-9375FZ-J0A1E	AMD LX800	1	-	1	2	1 IDE	4	3	1	1	8-bit	1	1	Passive	-20 ~ 80° C
PCM-9375EZ-J0A1E	AMD LX800	1	1	-	2	1 IDE	4	3	1	1	8-bit	1	1	Passive	-20 ~ 80° C
PCM-9375FZ2-J0A1E	AMD LX800	1	-	1	2	1 IDE	4	3	1	1	8-bit	1	1	Passive	-40 ~ 85° C
PCM-9375EZ2-J0A1E	AMD LX800	1	1	-	2	1 IDE	4	3	1	1	8-bit	1	1	Passive	-40 ~ 85° C

Packing List

Part No.	Description	Quantity
	PCM-9375 SBC	
	Startup Manual	
	Utility CD	
1701440351	IDE cable (44p/44p) 35cm (PCM-9375F/E series only)	1
1700060202	KB/MS cable 20cm	1
1701100202	LAN cable 20cm	1
1700001971	COM 2/3/4 RS-232 cable 21 cm	1
1700001977	Parallel Port cable 25cm	1
1703160160	Audio cable 16 cm	1
1703100121	USB cable (2 ports) w/ bracket 12cm	1
1700008894	SATA data cable 30cm (PCM-9375SF/SE only)	1
1703150102	SATA power cable 10cm (PCM-9375SF/SE only)	
1960004868	LX800 heatsink for PCM-9375 39.5 x 39.6 x 9.8 mm	
1960004869	CS5536 heatsink for PCM-9375 22.6 x 22.6 x 14.5 mm	

Optional Accessories

Part No.	Description
1703040157	COM2 cable for RS-422/485
1703200201	ATX power control cable

Embedded OS/API

Embedded OS/API	Part No.	Description
WinCE	2070000729	Image PCM-9375 CE 5.0 Pro Plus Eng
	2070001612	CE 6.0 Pro GX3 4Com V1.0 ENG
	2070007509	CE 6.0 Pro PCM-9375_4COM V1.1 JPN
	2070007810	CE 6.0 Pro GX3 4COM V1.2 ENG
Win XPE	2070007790	WES2009 ENG V4.0
	2070007910	WES2009 24MUI V4.0
QNX		QNX 6.3.2, QNX 6.4.1
Vxwork		V5.5
Linux	205E375000	Linux WDT Driver Ubuntu8.04 PCM-9375 V1.0 ENG
Software API	2066002300	CD SUSI Library V1.0

Rear I/O View

Value-Added Software Services

Software API: An interface that defines the ways by which an application program may request services from libraries and/or operating systems. Provides not only the underlying drivers required but also a rich set of user-friendly, intelligent and integrated interfaces, which speeds development, enhances security and offers add-on value for Advantech platforms. It plays the role of catalyst between developer and solution, and makes Advantech embedded platforms easier and simpler to adopt and operate with customer applications.

Software APIs

Control

GPIO

General Purpose Input/Output is a flexible parallel interface that allows a variety of custom connections. It allows users to monitor the level of signal input or set the output status to switch on/off a device. Our API also provides Programmable GPIO, which allows developers to dynamically set the GPIO input or output status.

SMBus

SMBus is the System Management Bus defined by Intel® Corporation in 1995. It is used in personal computers and servers for low-speed system management communications. The SMBus API allows a developer to interface a embedded system environment and transfer serial messages using the SMBus protocols, allowing multiple simultaneous device control.

I²C

I²C is a bi-directional two wire bus that was developed by Philips for use in their televisions in the 1980s. The I²C API allows a developer to interface with an embedded system environment and transfer serial messages using the I²C protocols, allowing multiple simultaneous device control.

Display

Brightness Control

The Brightness Control API allows a developer to interface with an embedded device to easily control brightness.

Backlight

The Backlight API allows a developer to control the backlight (screen) on/off in an embedded device.

Monitor

Watchdog

A watchdog timer (WDT) is a device that performs a specific operation after a certain period of time if something goes wrong and the system does not recover on its own.
A watchdog timer can be programmed to perform a warm boot (restarting the system) after a certain number of seconds.

Hardware Monitor

The Hardware Monitor (HWM) API is a system health supervision API that inspects certain condition indexes, such as fan speed, temperature and voltage.

Hardware Control

The Hardware Control API allows developers to set the PWM (Pulse Width Modulation) value to adjust fan speed or other devices; it can also be used to adjust the LCD brightness.

Power Saving

CPU Speed

Make use of Intel SpeedStep technology to reduce power power consumption. The system will automatically adjust the CPU Speed depending on system loading.

System Throttling

Refers to a series of methods for reducing power consumption in computers by lowering the clock frequency. These APIs allow the user to lower the clock from 87.5% to 12.5%.

Software Utilities
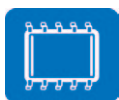
BIOS Flash

The BIOS Flash utility allows customers to update the flash ROM BIOS version, or use it to back up current BIOS by copying it from the flash chip to a file on customers' disk. The BIOS Flash utility also provides a command line version and API for fast implementation into customized applications.

Embedded Security ID

The embedded application is the most important property of a system integrator. It contains valuable intellectual property, design knowledge and innovation, but it is easily copied! The Embedded Security ID utility provides reliable security functions for customers to secure their application data within embedded BIOS.

Monitoring

The Monitoring utility allows the customer to monitor system health, including voltage, CPU and system temperature and fan speed. These items are important to a device; if critical errors happen and are not solved immediately, permanent damage may be caused.

eSOS

The eSOS is a small OS stored in BIOS ROM. It will boot up in case of a main OS crash. It will diagnose the hardware status, and then send an e-mail to a designated administrator. The eSOS also provides remote connection: Telnet server and FTP server, allowing the administrator to rescue the system.

Flash Lock

Flash Lock is a mechanism that binds the board and CF card (SQFlash) together. The user can "Lock" SQFlash via the Flash Lock function and "Unlock" it via BIOS while booting. A locked SQFlash cannot be read by any card reader or boot from other platforms without a BIOS with the "Unlock" feature.