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Products

CM-i686B (686CORE) module

Computer-On-Module's

- CM-X270
- CM-X255
- CM-iGLX
- CM-F82
- CM-i686M
- CM-i686B
- CM-iVCF
- CM-i886 (NFND)
- CM-i586 (NFND)

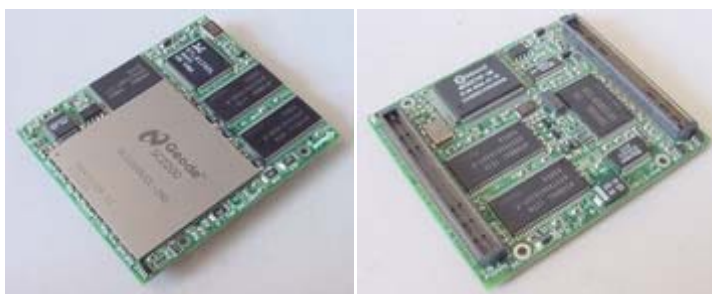
PC/104+ & ATX boards

- SBC-X270
- SBC-X255
- SBC-i686
- SBC-iVCF
- SBC-i886 (NFND)
- ATX

Related Topics:

- CoM Comparison
- PC/104 Comparison
- Linux Support
- Evaluation Kits
- Industrial Temperature
- RoHS Compliance

Important: CM-i686B module is for use only in combination with SB-i686 PC/104 board.
If you intend to design your own baseboard - select the newer [CM-i686M module](#).



Top View

Bottom View

CM-i686B Highlights

- **Powerful Computer-on-Module, for use with [SB-i686](#) PC/104+ SBC**
- **NS Geode CPU : x86 architecture, 266/300 MHz, 16 KB cache, FPU, MMX**
- **PCI and ISA expansion busses**
- **32 - 128 Mbyte SDRAM**
- **1 - 512 Mbyte Flash Disk**
- **Graphics Controller with interface for TFT panels, NTSC/PAL TV and RGB color monitors**
[see LCD panel support](#)
- **Host USB ports**
- **Sound codec with speaker and microphone support (optional)**
- **Standard peripherals: serial ports, LPT port, I/O ports, FDC, PS/2 keyboard and mouse, IrDA, HDD interface (optional)**
- **10/100BaseT Ethernet port (optional)**
- **Power consumption below 5W**

For more information see [Developer Resources](#) page.

The CM-i686B module is a tiny single board computer, designed to serve as the heart of SB-i686 PC/104+ board. The CM-i686B module has all the components needed to run operating systems such as Windows, Linux or VxWorks. Ready packages for these operating systems are available from CompuLab.

Based on AMD's Geode™ architecture, the CM-i686B provides excellent price / functions / performance ratios in comparison with any other PC-compatible embedded system.

The feature set of the CM-i686B module combines a 64-bit memory architecture, Flash Disk and essential computing peripherals. For embedded applications, the CM-i686B provides a 32-bit PCI bus, 100Mbit Ethernet, serial ports, general purpose I/O lines and many other essential functions.

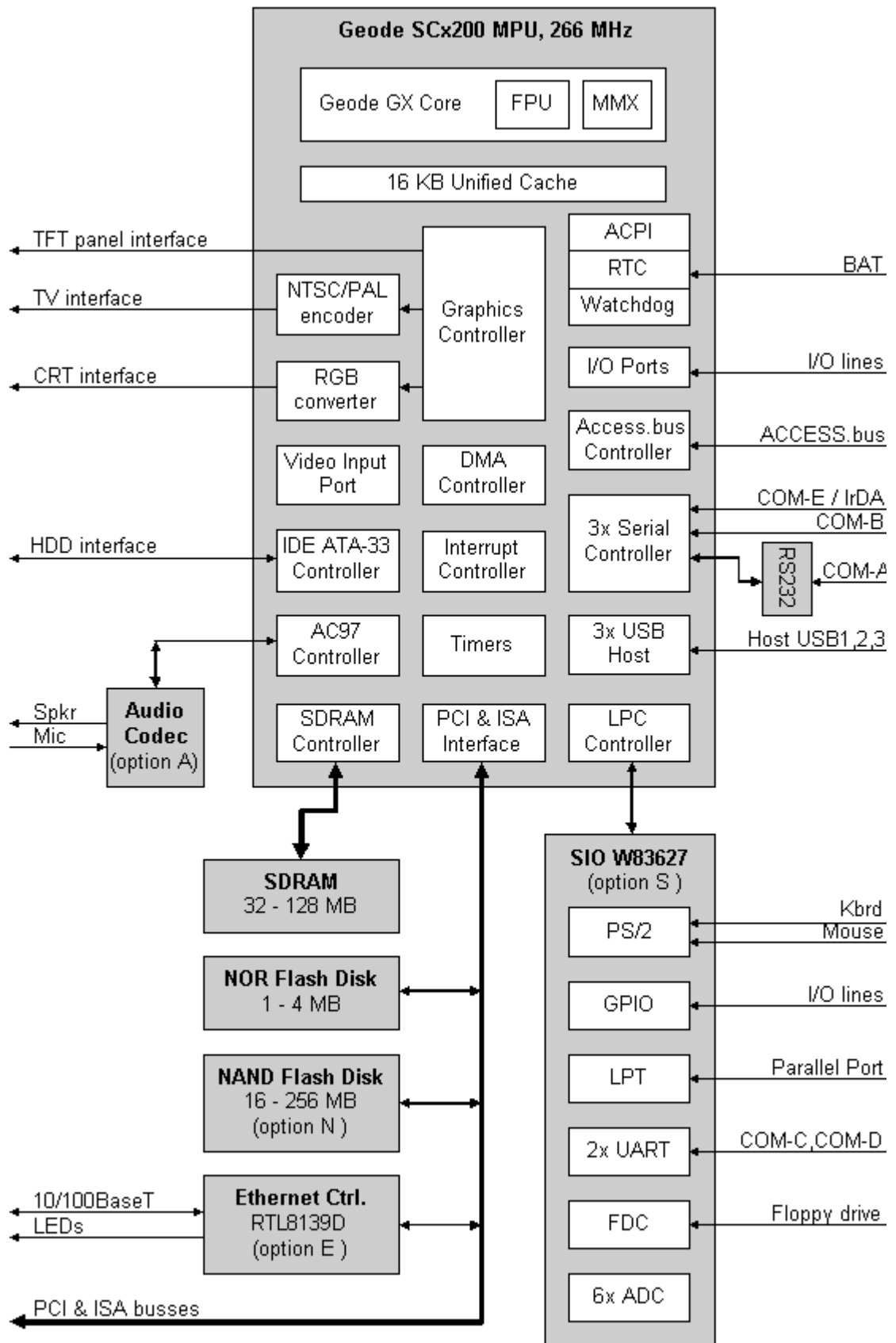
Software support for the CM-i686B includes ready-to-run packages for:

- * Linux
- * Windows CE, XP
- * VxWorks
- * DOS

[See O/S Support Coverage Map](#)

* Geode is registered trademark of AMD Corp.

Block Diagram



CM-i686B Features

The "Option" column specifies the P/N code required to have the particular feature. "+" means the feature is always available.

CPU & Core Logic

Feature	Specifications	Options
CPU Type	NS Geode SC1200 / SC2200 or SC3200	+
CPU Features	266 or 300 MHz, FPU, MMX, Pentium MMX instruction set	+
Internal Bus	64-bit, 100 MHz	+
Cache	16 KB unified L1 cache, WB	+
PC core logic	DMA controller, Interrupt controller, Timers	+
RTC	Real Time Clock, powered by external lithium battery	+
Power Management	ACPI 1.0 controller	+
Watchdog	Interfaces to INTR, SMI, Reset	+

Memory and Busses

Feature	Specifications	Options
DRAM	SDRAM 32 - 128 MB, 100 MHz, 64-bit, UMA	D
NOR Flash Disk	1 - 4 Mbytes	F
NAND Flash Disk	16 - 512 Mbytes, optional	N
I/O Tolerance	3.3 Volt on all lines except SIO, 5 Volt on Super-I/O lines	+
External Buses	PCI, ISA subset	+
PCI bus	32-bit, Rev 2.1 compliant, arbiter for 2 masters	+
ISA bus	Minimal essential ISA signals subset. Shared with PCI	+

Peripherals

Feature	Specifications	Options
Graphics Controller	Resolution up to 1280 x 1024, up to 16 bpp Frame buffer in system memory TFT, NTSC-M & PAL-M/B/D/G/H/I/N and RGB interface options Frame buffer driver for STN panels with built-in controller	G
USB	3 Host USB ports, 1.5 / 12 Mbps, OHCI v-1.0 compliant	+
Serial Port (UART)	16550 compatible, up to 1.5 Mbps COM-A - RS232 full, COM-B - TTL, Rx/Tx COM-E - TTL, Rx/Tx only, shared with IR COM-C, COM-D - TTL, full	+ + S
General Purpose I/O	26 lines, shared with other functions	S

Hard Disk Interface	IDE, UDMA-33, up to 2 devices	+
LPT - Parallel Port	Bi-directional with EPP mode. ESD protection and filters	S
Floppy Disk Interface	Options for direct interface or through parallel port (LPT)	S
Keyboard Interface	PS/2 or redirection from COM port	S
Mouse Interface	PS/2	S
Infrared Port	One or two ports, IrDA 1.1 & Consumer IR, up to 4 Mbps	+
Ethernet	Realtek 8139, MAC & PHY, 10/100BaseT, Activity LED's	E
Audio codec	AC97 interface, mono microphone input, stereo line input and 25 mW output for active speakers	A
ACCESS.bus	I2C	+

Electrical, Mechanical and Environmental Specifications

Supply Voltage	Single 3.3V or dual 3.3V / 5.0V (with Super-I/O)
Power consumption	1 - 5 watt, depending on configuration and CPU clock settings
Dimensions	68 x 58 x 8 mm
Weight	38 gram
MTBF	> 100,000 hours
Operation temperature (case)	Commercial: 0° to 70° C Extended: -20° to 70° C Industrial: -40° to 85° C. Click for availability note
Storage temperature	-40° to 85° C
Relative humidity	10% to 90% (operation) 05% to 95% (storage)
Shock	50G / 20 ms
Vibration	20G / 0 - 600 Hz
Connectors	2 x 180 pin, 0.5 mm
Connector insertion / removal	50 cycles

For more information see:

- [CM-i686 Reference Guide](#)
- [Developer Resources](#)

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