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Data Sheet

August 13, 2026

RTD EMBEDDED TECHNOLOGIES

RTD Embedded Technologies CMC16686GX300HR-128 / D32X PC / 104 CPU Module

The RTD Embedded Technologies CMC16686GX300HR-128 / D32X is a PC/104 CPU module engineered for rugged embedded applications requiring high integration and modularity. Based on the National Semiconductor Geode GX1 MMX processor, this compact board consolidates essential PC/AT functions into a single stackable unit. The modular PC/104 architecture enables system expansion through additional modules without requiring external backplanes or card cages, delivering flexibility for demanding field deployments. Typical Applications Field data acquisition, industrial process control, remote monitoring stations, embedded automation systems. Compatibility & Integration Supports ROM-DOS, MS-DOS, and Windows operating systems. Compatible with PC-compatible real-time operating systems; custom drivers may be required for SSD and watchdog timer functionality on some RTOS platforms. Aumictech offers



MODEL

**RTD Embedded
Technologies
CMC16686GX300HR-
128 / D32X**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

**CMC16686GX300HR-
128 / D32X**

LISTING

<https://aumictechlabs.com/products/cmc16686gx300hr-128-d32x-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

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Technical Specifications

Processor: National Semiconductor Geode GX1 MMX microprocessor
Memory: 32, 64, 128, or 256 MB SDRAM (this unit ships with 128 MB)
Power Supply: 5V +/- 5%, 10 W typical
Operating Temperature: -40°C to +85°C (case temperature)
Operating Humidity: 0% to 95%, non-condensing
Storage Temperature: -55°C to +125°C

Interfaces: PC/104 ISA Bus (16-bit) Two RS-232/422/485 serial ports IEEE 1284 parallel port (switchable to 16-bit digital I/O) Two 8-bit TTL-compatible programmable digital I/O ports PS/2 keyboard and mouse interfaces 10/100 Base-T Ethernet Onboard Real-Time Clock SSD socket Speaker port

Key Features

- Integrated watchdog timer for system reliability
- RTD Enhanced Award BIOS supporting ROM-DOS, MS-DOS, and Windows Fail-Safe Boot ROM with ROM-DOS, configurable via jumper JP5
- Multi-media boot capability: floppy disk, hard disk, SSD, boot block flash, DiskOnChip
- Flexible I/O architecture with bit and byte programmable digital ports

Typical Applications

Field data acquisition, industrial process control, remote monitoring stations, embedded automation systems.

Compatibility & Integration

Supports ROM-DOS, MS-DOS, and Windows operating systems. Compatible with PC-compatible real-time operating systems; custom drivers may be required for SSD and watchdog timer functionality on some RTOS platforms.

Features & description

From manufacturer datasheet

Features

- Geode GX1 300 MHz, 2.0 V core, 16 KB L1, math coprocessor • 128 MB SDRAM this SKU; family 32/64/128/256 MB • 32 MB flash (D32X); fail-safe boot ROM with ROM-DOS • Two serial RS-232/422/485 to 115200 baud (1.5 Mbaud extended UART) • multiPort: ECP/EPP parallel or 16 bits digital I/O • Watchdog 1.2 s; PC/104 plus PC/104-Plus PCI

CMC16686GX300HR128D32X Characteristics / Specifications

PARAMETER	VALUE
Model	CMC16686GX300HR-128 / D32X
Manufacturer	RTD Embedded Technologies
Instrument Type	PC/104 cpuModule
Series	CMC16686GX
Alias	CMC16686GX300HR-128; CMC16686GX300HR; CMC16686GX300
Processor	National Semiconductor Geode GX1 MMX enhanced
Clock Speed	300 MHz
Processor Supply	2.0 V provided on board
L1 Cache	16 KB
Math Coprocessor	internal
SDRAM This SKU	128 MB
Flash This SKU	32 MB (D32X)
Family RAM Options	32 MB, 64 MB, 128 MB, 256 MB
DMA Channels	6 (8237 compatible)
Interrupt Channels	15 (8259 compatible)
Timer Counters	3 (8254 compatible)
Digital I/O Ports	two 8 bit TTL; one bit-direction, one byte-direction programmable
Serial Ports	two, software RS232/422/485
Serial Baud Standard	50 to 115200 baud, 16450 and 16550A compatible
Serial Baud Extended	1.5 Mbaud Extended UART mode
Parallel multiPort	SPP, ECP, EPP with selectable IRQ and DMA, or 16 bits digital I/O
Keyboard Port	PC/AT standard
Mouse Port	PS/2
Speaker Port	PC speaker
Real Time Clock	yes (external battery for date/time backup)

PARAMETER	VALUE
Watchdog Timeout	1.2 seconds
BIOS	RTD Enhanced Award BIOS 4.51.xx family
Boot Devices	floppy, hard disk, SSD, fail-safe boot ROM, DiskOnChip
Fail Safe Boot ROM	surface-mount flash holding ROM-DOS
SSD Socket	Atmel 5 V flash, SRAM, NOVRAM, EPROM, AMD 5 V flash per size table
DiskOnChip Support	1 MB / 2 MB (DOC2000) and 16 MB to 1 GB class (later)
Bus PC1	64-pin CN1 plus 40-pin CN2
Bus PC104 Plus	120-pin CN16 PCI
Typical Power 300 MHz	5.8 W (32 to 256 MB RAM, no SSD, internal coprocessor)
Board Supply	5 V +/-5 percent, 10 W class budget
Dimensions	3.55 × 3.775 × 0.6 in (90.2 × 95.9 × 16 mm)
Mass	4.16 oz (118 g)
PCB Construction	12-layer mixed SMT and through-hole
Operating Case Temperature	-40 to +85 C Geode GX1 case with proper cooling
Operating Humidity	0 to 95 percent noncondensing
Storage Temperature	-55 to +125 C
HR Suffix	high-reliability / extended-temperature build
OS Support	ROM-DOS, MS-DOS, Windows; most PC real-time OS Notes Specs from RTD CMC16686GX cpuModule User Manual BDM-610000020 Rev. B. This listing is the 300 MHz HR board with 128 MB RAM and 32 MB flash (D32X). Confirm jumper termination, thermal management, and SSD population on the installed module.
multiPort	ECP/EPP parallel or 16 bits digital I/O
Humidity	0 to 95 percent noncondensing

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	55 to +125 C
HR Suffix	high-reliability / extended-temperature build
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Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Speaker Port	PC speaker
Real Time Clock	yes (external battery for date/time backup)
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Boot Devices	floppy, hard disk, SSD, fail-safe boot ROM, DiskOnChip
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Notes

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Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

NIST-traceable calibration · SAM registered ·
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.