

# Cool XpressRunner-GS45 PCI/104 Express SBC with Intel® Core™-2 Duo Processor



## Features

- Intel® Core™ 2 Duo Processor, 2 GByte soldered DDR3-1066 RAM max.
- SXGA: 2048 x 1536 pixels, dual channel LVDS and VGA
- Gigabit Ethernet, 8x USB 2.0
- 2x RS-232, RS-485
- 2x SATA
- Optional extended temperature range: 1.2 GHz
- Supports Smart Embedded Management Agent (SEMA) functions

## Specifications

### Core System

CPU	Intel® Core™2 Duo SP9300, 6 MB cache Intel® Celeron® M 722, 1 MB cache
BIOS	Phoenix FirstBIOS BIOS parameters also saved in EPROM
Memory	2 GB soldered DDR3 (max.)
Watchdog Timer	Yes
Status LEDs	Power, Watchdog, Ethernet, IDE and life signal
PCI Bus	5 V compliant
Board Format	PCI/104-Express, 115.6 mm x 95.9 mm
Core Logic	Mobile Intel® GS45 Express Chipset
PCI Express Bus	4 PCIe x1 lanes, configurable as x4, 1 PCIe x16 lane, usable for graphics, also configurable as x8, x4, x2 lanes

### Video

LVDS Interface	Dual channel
Graphics	Up to 256 MB RAM, Up to 2048 x 1536 pixels at 75 Hz, supports 3D, DirectX and OpenGL
VGA	VGA
Sound	High definition audio, 5+1 Input, output, mic.

### I/O Interfaces

USB	8 USB 2.0 host ports, with boot device support
SATA	2 SATA ports
Serial Ports	2 RS-232 or RS-485 ports, selectable in BIOS

### Ethernet

Speed	SP9300: 2.26 GHz M722: 1.2 GHz
FSB	1066 MHz
Ethernet	1000 BASE-T with i82567

### Power

Power Consumption	Maximum 11W with Celeron® M722, up to 33W with Core™2 Duo SP9300
RTC Backup	Battery
Power Supply	+5 V only; all necessary voltages are generated onboard
Power Management	BIOS supports ACPI power saving modes

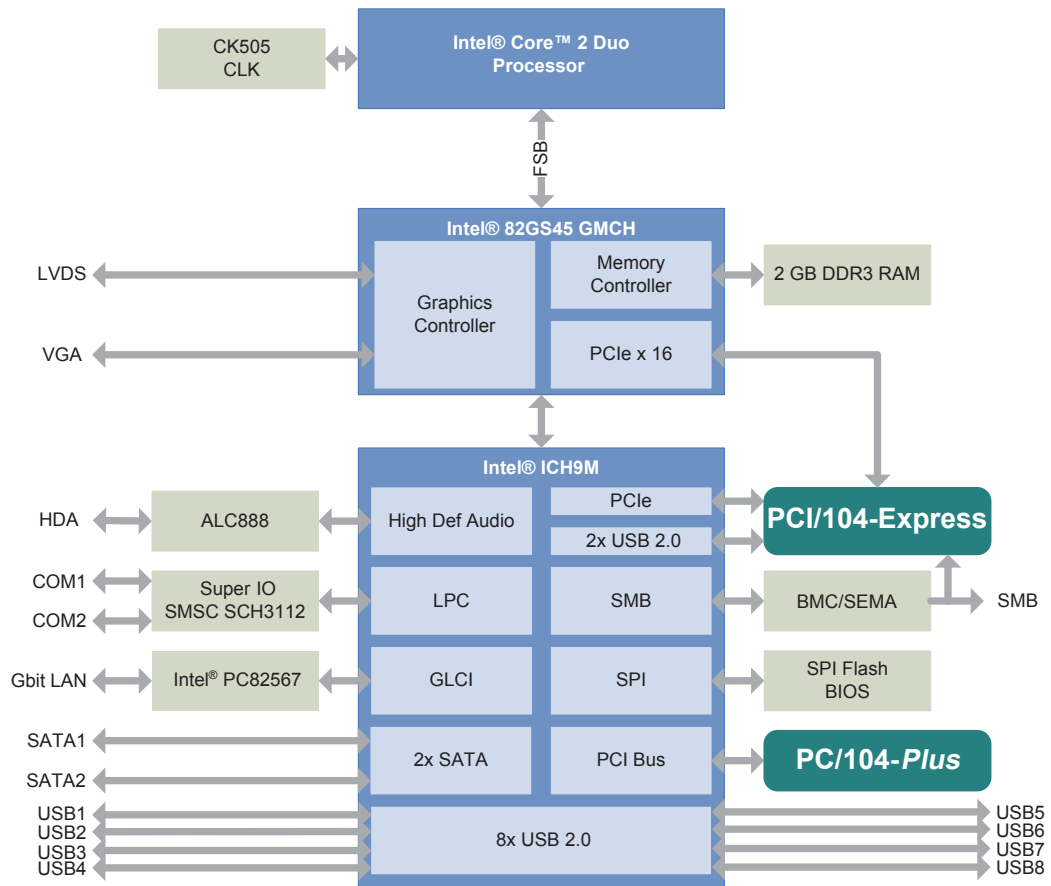
### Mechanical and Environmental

Operating Temperature	Standard: 0°C to +60°C (all versions) Industrial: -20°C to +60°C (all versions) Extended: -40°C to +85°C (optional)
Cooling	- The Cool XpressRunner-GS45 must always be operated with sufficient cooling measures - A heat spreader is delivered with the board - Warranty will be void if operated without cooling
MTBF	166,504 hours @ 25 °C
SEMA	Yes

### Operating Systems

Standard Support	Windows, Linux
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## Functional Diagram



## Ordering Information

### Modules

Model Number	Description/Configuration
712-0001-10	CXR-GS45 CPU module with Celeron® M 722 processor, 1.2GHz and 1GB DDR3 RAM, including heat spreader, 0°C to +60°C
712-0004-10	Like 712-0001-10 but with Core 2 Duo SP9300, 2.26 GHz, 0°C to +60°C
812-0001-10	CPU Module with Celeron® M722, 1.2 GHz, -20°C to +60°C
812-0004-10	Like 812-0001-10 but with Core 2 Duo SP9300, 2.26 GHz, -20°C to +60°C
912-0001-10	CPU Module with Celeron® M722, 1.2 GHz, -40°C to +85°C using suitable cooling measures optional