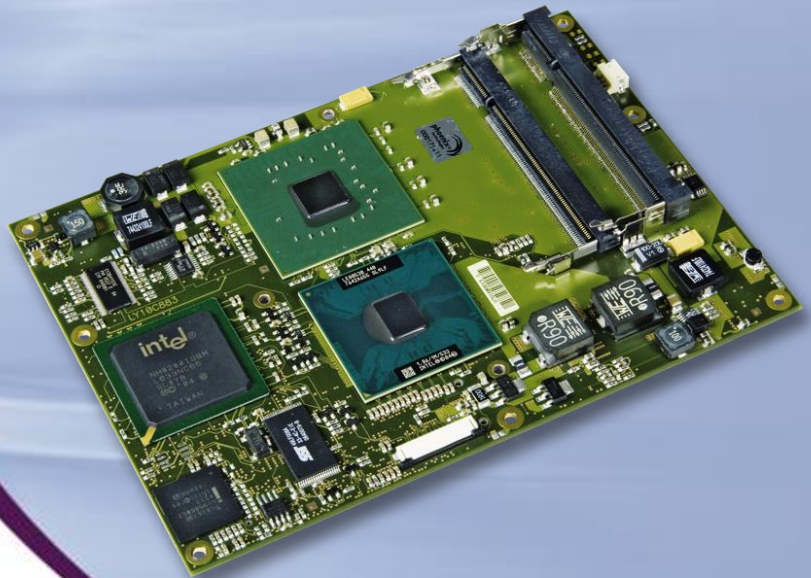


Product Sheet



COM Express™ Family

Intel® Core™ Duo Extended

COM Express™, an open specification of the PICMG (PCI Industrial Computer Manufacturer Group), is a module concept to bring PCI Express and other latest technologies like SATA, USB 2.0 and LVDS on a COM (Computer On Module).

COM Express is plugged onto an application-specific base board similar to the ETX concept, but offers more options and a growth path to future CPU technologies. The design of the **MSC CXE-CD945** module is based on Intel's dual core CPU technology enabling you to boost your embedded application to highest performance levels.

Even more, it supports up to 4GByte of memory on two sockets to achieve better graphics and computer performance.

Features

- Intel® Celeron M 440 (1.86GHz), Intel® Core™ Duo L2400 (1.66GHz) or Intel® Core™ 2 Duo L7400 (1.5GHz)
- Mobile Intel® 945GM Chipset with integrated Intel® Graphics Media Accelerator 950
- PCI Express™ x16 (PEG) Support
- Up to 4GB DDR2 SDRAM, dual channel access
- Two SATA-300 mass storage Interfaces
- 10/100/1000 Base-TX Ethernet interface
- LVDS interface (18 / 24 / 36 / 48 Bit)
- Resolution up to 2.048 x 1.536
- CRT interface up to 2.048 x 1.536
- Dual Independent Display supported
- Four PCI Express™ x1 lanes
- Eight USB 2.0 interfaces
- AC'97, HD audio interface
- Infineon TPM 1.2
- Phoenix TrustedCore BIOS
- System monitoring, watchdog
- ACPI power management including Suspend-to-RAM support
- Fully COM Express™ Type 2 compliant
- Windows XP (embedded) and Linux supported

Different Core Duo and Core 2 Duo processors are supported by this design.

Besides an extensive set of interfaces and features, the **MSC CXE-CD945** offers hardware and BIOS based security compliant to the requirements of TCG (Trusted Computing Group).

For evaluation and design-in of the COM Express™ modules we provide evaluation baseboards and develop motherboards providing the interface infrastructure for the COM Express™ module offering PC type connectors for external access.

Starter kits for Linux are available on request.

Product description (more options upon request)	Order No.
MSC CXE-CD945-440-065000, 1 intel® Celeron M 440, 10/100/1000Base-TX, TPM	32236
MSC CXE-CD945-L2400-162000, Intel® Core™ Duo L2400, 10/100/1000Base-TX, TPM	32235

Technical Data – MSC CXE-CD945

Core Logic, Memory

Com Express: Intel® Celeron M 423 (1,06GHz), Intel® Celeron M 440 (1.86 GHz), Intel® Core™ Duo L2400 (1.66 GHz) or Intel® Core™ 2 Duo L7400 (1.5 GHz)

Chipset: Intel® 82945GM(E), ICH7-M

Memory: Two 200-pin SO-DIMM sockets for up to 4GB PC4200 DDR2 SDRAM, dual channel memory support

Drives

SATA: 2 x SATA-2 channels (up to 300MB/s)

EIDE: 1 x Enhanced IDE port (ATA/UDMA100)

Standard Interfaces

USB: 8 x USB 2.0

Bus Interfaces

COM Express™: Type 2 interface, fully compliant

PCI Express™: Four channels PCI Express x1, one channel shared with Gbit Ethernet option, one PCI Express Graphic (PEG) x 16

PCI Bus: 32 Bit, 33MHz standard interface (PCI 2.3)

LPC: Low Pin Count bus for heritage interfaces

Flat Panel/ CRT Interface

Graphics Controller: Intel® Graphics Media Accelerator 950 (integrated in Intel® 945GM chipset)

Video Memory: UMA, up to 224 MB

LCD Interface: LVDS 24/48 Bit, dual channel, Resolution 1600 x 1200, External PCIe x16 graphics support

CRT Interface: Resolution 2048 x 1536

Miscellaneous

Watchdog Timer: Initiates system reset, (programmable, 1s ... 255h)

Fan Supply: 3-pin header (5V)

Battery: External

System Monitoring: Voltage, Temperature, Fan

LAN Interface

Ethernet: 10/100/1000Base-TX (Intel® 82573L)

Sound Interface

AC'97 2.3 Audio Interface or Intel® High Definition Audio

Security Device

Infineon Trusted Platform Module 1.2 SLB 9635

Bios

Phoenix TrustedCore

Boot Options: Quick Boot, MultiBoot XP (FD, HD, CD, LAN, USB), Boot without keyboard, LAN Boot via PXE (RPL optional), Wake on LAN (WOL) supported

Security: Phoenix StrongROM technology, TPM 1.2 support, Pre-Boot-Authentication, Phoenix SecureFlash for safe BIOS updates

Power Management: ACPI (S3, S4, S5 supported), Enhanced Intel SpeedStep® technology supported, Active/passive cooling

USB: USB legacy support (Keyboard, Mouse, Hub)

Video Setup: VGA BIOS with flat panel extensions (EPI)

Setup: CMOS configuration backup in EEPROM

HW Programming I/F: UspEpc (Universal board support package for embedded PCs)

Power Supply

Power: Power +12V +/-10%, 5V Stby optional

Power Consumption: 15W typ. (L2400, 1.66GHz), 25W typ. (L440, 1.86GHz), 25W typ. (L7400, 1.5GHz)

Environment

Ambient: 0° ... 60° C (operating)

Temperature: -25° ... 85° C (storage)

Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)

Mechanical

Dimensions: 155mm x 110mm x 13mm

Sales Offices Germany

München · Neufahrn · Tel. +49 8165 906 - 100 · e-mail: boards@msc-ge.com · **Technical Support COM:** Tel. +49 8165 906 - 200 · e-mail: support.boards@msc-ge.com; www.msc-ge.com/support-boards
Dornach · Tel. +49 89 945532 - 0 · Eching · Tel. +49 8165 9995 - 300 · Berlin · Tel. +49 30 720089 - 0 · Hamburg · Tel. +49 4106 7764 - 0 · Hannover · Tel. +49 511 616847 - 0 ·
Braunschweig · Tel. +49 5341 2999 - 0 · Düsseldorf · Tel. +49 211 92593 - 0 · Aachen · Tel. +49 2408 709 - 0 · Koblenz · Tel. +49 2630 96239 - 11 · Wiesbaden · Tel. +49 611 97320 - 0 ·
Frankenthal · Tel. +49 6233 344 - 0 · Stuttgart · Tel. +49 711 78336 - 0 · Freiburg · Tel. +49 761 8819 - 819 · Nürnberg · Tel. +49 911 43970 - 0 · Jena · Tel. +49 3641 6825 - 0 · Stutensee · Tel. +49 7249 910 - 0

Sales Offices Europe

MSC Vertriebs GmbH · Wiener Neudorf · Tel. +43 2236 205066 - 0 · Velden · Tel. +43 4274 23222 - 17 · MSC Schweiz AG · Biel/Bienne · Tel. +41 32 366 8565 · Montreux · Tel. +41 21 965 3500 ·
Rotkreuz · Tel. +41 41 785 8200 · MSC Iberia S.L. · Barcelona · Tel. +34 931 505 505 · Madrid · Tel. +34 91 72169 - 51 · MSC France · Paris · Tel. +33 1 45128230 · MSC Italia Srl · Tel. +39 039 63089-1 ·
MSC Nederland BV · Tel. +31 78 6920 - 150 · MSC Belgium Office · Tel. +32 2 452 6451 · MSC (UK) LTD. · Brighton · Tel. +44 1273 622446 · Chertsey · Tel. +44 1932 796335 ·
MSC (Scotland) LTD. · Tel. +44 1506 460555 · MSC Representative (DK)Emcomp Nordic Area · Tel. +45 49193854 · MSC-Vertriebs-CZ s.r.o. · Blansko · Tel. +420 516 411494 - 15 ·
Prague · Tel. +420 296 580260 · MSC-Vertriebs-SK s.r.o. · Zilina · Tel. +421 41 5001243 · MSC Budapest Kft. · Tel. +36 1250 90 - 40 · MSC Polska Sp. z o.o. · Tel. +48 323 3054 - 50 ·
MSC-Mibatron s.r.l. · Bucharest · Tel. +40 31 1023466 · Tel. +40 21 2302530 · MSC Vertriebs GmbH · Istanbul · Tel. +90 216 411 2333

Head Office Stutensee

MSC Vertriebs GmbH · Industriestraße 16 · 76297 Stutensee · Tel. +49 7249 910 - 0 · Fax +49 7249 7993 0 · Stutensee@msc-ge.com

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