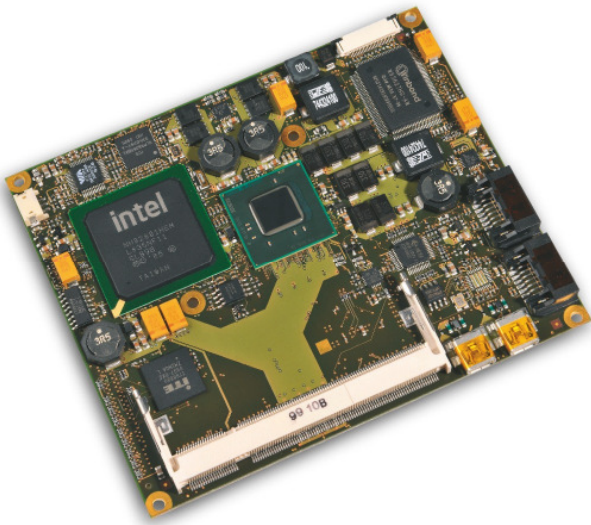


MSC ETE-PV510

Intel® Atom™ Dual Core






Description

The design of the MSC ETE-PV510 module is based on Intel's second generation embedded Atom™ CPU technology offering dual core computing performance at low power consumption for demanding applications.

The Intel® Atom™ D510 dual core processor with integrated graphics paired with the established ICH8M bridge in a 2-chip design offers high graphics performance and many I/O options.

The MSC ETE-PV510 optionally delivers hardware and BIOS based security to protect the customer's IP. The implemented security scheme is compliant with the requirements of the TCG (Trusted Computing Group).



95x114 
 8 / 15 W 
 High 

Highlights

- Intel® Atom™ D510 (1.66GHz, dual core), Intel® Atom™ N450 (1.66GHz, single core), with integrated Intel® GMA 3150 graphics core
- Intel® ICH8M I/O controller hub
- Up to 2GB DDR2 SDRAM
- LVDS interface (18 bit, single channel) up to 1366 x 768
- CRT interface up to 2048 x 1536
- Dual Independent Display supported
- Six USB 2.0 interfaces

Technical Data – MSC ETE-PV510

Module Standard

ETX® Standard 3.02

Core Logic, Memory

CPU

Intel® Atom D510 (dual core, 1.66 GHz, 1MB L2, 13W TDP),
Intel® Atom N450 (single core, 1.66 GHz, 512kB L2, 5.5W TDP)
with integrated graphics and memory controller

Intel® Technologies:
Hyper-Threading, Intel® 64, Execute Disable Bit

Chipset

Intel® ICH8M

Memory

200-pin SO-DIMM socket for up to 2GB PC5300 DDR2 SDRAM
(667MHz)

Storage Interfaces

SATA

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

PATA

2 x Enhanced IDE ports (ATA/UDMA100)

Floppy

Shared with parallel port

Solid State Disk

1x 4GB NAND Flash SSD on primary IDE channel (option, on request)

Bus Interfaces

ISA

Standard ISA interface (PCI/ISA Bridge ITE 8888)

PCI

32 Bit, 33MHz standard interface (PCI 2.3)

Serial Bus

I²C Bus
SMBus

Standard Interfaces

Parallel

Uni/EPP/ECP (shared with floppy I/F)

Serial

2 x TTL

Infrared

IrDA 1.1

Keyboard / Mouse

PS/2

USB

6 x USB 2.0 (two on on-board Mini-USB connectors)

Display Interface

Graphics Controller

Intel® GMA 3150 graphics accelerator integrated in Intel® Atom processor, 400MHz, DirectX 9

Video Memory

UMA, up to 384 MB

LCD Interface

LVDS 18 bit, single channel, resolution 1366 x 768

CRT Interface

Resolution 2048 x 1536

Miscellaneous

Watchdog Timer

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

Fan Supply

3-pin header (5V); speed controlled

Battery

on base board

System Monitoring

Voltage, temperatures (3 sensors), fan

Network Interface

Ethernet

10/100 Base-T (RTL 8103T)

Audio Interface

ETX compliant audio interface (VT 1708; Line In, Line Out, Mic)

Firmware, Software

Phoenix SecurCore

Boot Options

Quick Boot, MultiBoot XP (FD, HD, CD, LAN, USB)
Boot without keyboard, LAN Boot via PXE (RPL optional)

Power Management

ACPI (S3 cold, S4, S5 supported,
active/passive cooling)

USB

USB legacy support (keyboard, mouse, stick, HDD, CD, floppy)

Video

VGA BIOS with flat panel extensions (EDID/EPI)

HW Programming I/F

UspEpc (Universal board support package for embedded PCs)

Power Supply

Power Supply Voltage

+5V +/-5%, 5V Stby optional

Power Consumption

8W [N450] - 15W [D510] typ.

Environment

Ambient Temperature

0° ... 60° C (operating)
-25° ... 85° C (storage)

Humidity

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

Mechanical

Dimensions

95mm x 114mm x 12mm

Order Reference – MSC ETE-PV510

Order Number	Description	Reference
35295	Intel® Atom™ D510 Dual Core, 10/100/Base-TX	MSC ETE-PV510-001
37962	Intel® Atom™ N450 Single Core, 10/100/Base-TX	MSC ETE-PV510-004

Accessories

Order Number	Description	Reference
Cooling		
36629	Heatspreader for ETE-PV510, consisting of a specially formed aluminum plate with M2.5 distance holders, screws, grommets and two thermopads for the thermal contact to CPU and north bridge. 6 holes for countersunk screws allow mounting of a heatsink on top. No SO-DIMM cutout.	MSC ETE-PV510-01 HSP-001
38518	Heatspreader for ETE-PV510, consisting of a specially formed aluminum plate with pressed in distance holders (3mm inner diameter), screws, grommets and two thermopads for the thermal contact to CPU and north bridge. 6 holes for countersunk screws allow mounting of a heatsink on top. No SO-DIMM cutout.	MSC ETE-PV510-02 HSP-001
36627	Passive heatsink solution for ETE-PV510, consisting of a single-piece aluminum profile with fins, M2.5 distance holders, screws, grommets and two thermopads for the thermal contact to CPU and north bridge. No fan, no SO-DIMM cutout.	MSC ETE-PV510-01 HSI-001
36068	Fan kit - suitable for Heat sink MSC ETE-PV510-01 HSI-* and MSC ETE-A945GSE-02 HSI-*. The kit consists of a 60x60mm fan, spacers and screws.	MSC ETE-PV510-01 FKT-001
Carrier Boards		
31635	Base board in ATX form factor; with many debugging aids, Super-I/O controller and various interfaces	MSC ETE-MB-ATX
32351	Base board in PISA form factor, also usable as stand-alone base board for evaluation and small series production; floppy controller; many PC typical I/O interfaces; power connector	MSC ETE-MB-PISA
Memory Modules*		
1054514	DDR2 SODIMM,512MB,64Mx64,unb.,PC667,CL4, 1rank	HYMP164S64CP6-Y5-C
1051494	DDR2 SODIMM, 1GB, PC800, 128Mx64, 1.8V, 2rank	HYMP112S64CP6-S6
1051595	DDR2 SODIMM, 2GB PC800, 256Mx64, 128Mx8, CL5, 1.8V	HYMP125S64CP8-S6
*	Pre-qualified memory modules for the CPU product above	

Corporate Offices

MSC Vertriebs GmbH, Industriestraße 16, 76297 Stutensee, Tel. +49 7249 910 – 0, Fax +49 7249 7993 0
MSC Vertriebs GmbH, Design Center München-Neufahrn, Zeppelinstr. 1A, 85375 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, Internet: www.msc-ge.com/support-boards

Sales Offices Germany

München-Dornach · Tel. +49 89 945532 – 0 · **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 ·
Rodgau · Tel. +49 6106 26769 – 0 · **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 910-173

Sales Offices Europe

MSC Vertriebs GmbH · Leobersdorf · 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 · **Volketswil** · Tel. +41 43 355 33 66 ·
MSC Iberia S.L. · Barcelona · Tel. +34 931 505 505 · **Madrid** · Tel. +34 91 72169 - 51 ·
MSC France · Paris · Tel. +33 1 45128230 · **Strasbourg** · Tel. +33 3 88 651843 · **Lyon** · Tel. +33 4 72 756020 ·
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, **Weybridge** · Tel. +44 1932 268990 · **Milton Keynes** · Tel. +44 1908 263999 ·
MSC (Scotland) LTD. · Tel. +44 1506 460555 · **MSC Representative (DK) MK Nordic ApS** · Tel. +45 24 252745 ·
MSC-Vertriebs-CZ s.r.o. · Blansko · Tel. +420 516 411494 - 15, **Prague** · Tel. +420 251 261 130 ·
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

