

## MSC ETE-A945GSE

Intel® Atom™ Module




### Description

The design of the MSC ETE-A945GSE module is based on Intel's embedded Atom™ CPU technology enabling to lower the power consumption for embedded applications to a minimum while maintaining high graphics performance.

The Intel® Atom™ N270 processor with its low power consumption of only 2.5 W is ideally suited for fanless designs. Paired with the successful Intel 82945GSE the design offers high graphics performance and many I/O options.

95x114 

10W 

Entry/Mid 

### Highlights

- Intel®Atom™ N270 (1.6GHz)
- Mobile Intel®945GSE Chipset with integrated Intel®Graphics Media Accelerator 950
- Up to 2GB DDR2 SDRAM
- LVDS interface (24 Bit, dual channel) up to 1920 x 1200
- 2nd LVDS interface via on-board connector (optional)
- CRT interface up to 2048 x 1536
- Dual Independent Display supported
- Six USB 2.0 interfaces

# Technical Data – MSC ETE-A945GSE

## Module Standard

ETX® Standard 3.02 compliant

## Core Logic, Memory

### CPU

Intel® Atom N270 (1.6GHz)

### Chipset

Intel® 82945GSE, ICH7DH

### Memory

200-pin SO-DIMM sockets for up to 2 GB PC4200 DDR2 SDRAM

## Storage Interfaces

### SATA

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

### EIDE

2 x Enhanced IDE port (ATA/UDMA100)

### Floppy

Shared with parallel port

## Bus Interfaces

### ISA

Standard ISA interface (via PCI/ISA bridge ITE 8888)

### PCI

32 Bit, 33MHz standard interface (PCI 2.3)

### Serial

I<sup>2</sup>C Bus

SMBus

## Standard Interfaces

### Parallel

Uni/EPP/ECP (shared with Floppy Port)

### Serial

2x TTL

### Infrared

1x IrDA 1.1 SIR interface

### Keyboard / Mouse

PS/2 interface

### USB

4 x USB 2.0 to ETX connector

2 x USB 2.0 to onboard Mini-USB connector

## Display Interface

### Graphics Controller

Intel® Graphics Media Accelerator 950 (integrated in Intel® 945GSE chipset)

### Video Memory

UMA, up to 384 MB

### LCD Interface

LVDS 24 Bit, dual channel, resolution 1920 x 1200;

2<sup>nd</sup> LVDS interface 18 Bit, dual channel on on-board connector (option)

### CRT Interface

Resolution 2048 x 1536

## Miscellaneous

### Watchdog Timer

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

### Fan Supply

3-pin header (5V)

### RTC

Part of ICH7DH, battery external

### System Monitoring

Voltage, Temperature, Fan

## Network Interface

### Ethernet

10/100 Base-TX (part of Intel® ICH7DH)

## Audio Interface

AC'97 Audio Interface (Via 1612A)

## Firmware, Software

### Boot Options

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

### Power Management

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

### USB

USB legacy support (Keyboard, Mouse, Hub)

### Video

VGA BIOS with flat panel extensions (EDID/EPI)

### Setup

CMOS configuration backup in EEPROM

## Software Support

### HW Programming I/F

UspEpc (Universal board support package for embedded PCs)

### BSP Support

Microsoft Windows XP (e), Linux

## Power Supply

### Power Supply Voltage

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

### Power Consumption

10W typ. (N270, 1.6GHz)

## 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 x12mm

## Order Reference – MSC ETE-A945GSE

Order Number	Description	Reference
32391	Intel® Atom™ N270, 10/100/Base-TX	MSC ETE-A945GSE-N270-0300

## Accessories

Order Number	Description	Reference
	<b>Cooling</b>	
1073444	Heatspreader for ETE-A945GSE, specially formed aluminum plate with M2.5 distance holders, screws, grommets and two thermopads. 6 holes for countersunk screws. No SO-DIMM cutout.	MSC ETE-A945GSE-01 HSP-001
1073643	Heatspreader for ETE-A945GSE, specially formed aluminum plate with pressed in distance holders (3mm inner diameter), screws, grommets and two thermopads. 6 holes for countersunk screws. No SO-DIMM cutout.	MSC ETE-A945GSE-02 HSP-001
1073416	Passive heat sink solution for ETE-A945GSE, single-piece aluminum profile with fins, M2.5 distance holders, screws, grommets and two thermopads. No fan, no SO-DIMM cutout.	MSC ETE-A945GSE-02 HSI-001
	<b>Carrier Boards</b>	
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
	<b>Memory Modules*</b>	
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
	* Pe-qualified memory modules for the CPU product above	

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