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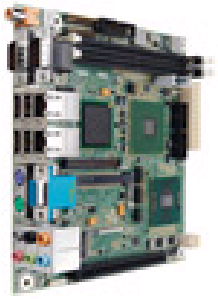
DATASHEET



FEATURE SUMMARY

- Enables customers to quickly develop next-generation systems with high performance, low power consumption and long life.
- The Mobile Intel 945GM Express chipset has a 667MHz front side bus and supports up to 4GB of dual channel, DDR2-667 memory for enhanced performance.

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Endura TP945GM

Endura TP945GM Long-life Mini-ITX Express Motherboard

HIGH PERFORMANCE

The Endura TP945GM mini-ITX delivers exceptional performance with Intel's latest Core™ Duo T2500 2.0GHz embedded processor. Support for Intel® Celeron® M, LV and ULV processors also provides cost effective and ultra-low power options.

The Intel® 945GM Express chipset has a 667MHz front-side bus and supports dual-channel DDR2-667 DIMM memory which enables a 25% higher data rate compared to the previous generation. The integrated Intel® Graphics Media Accelerator 950 delivers exceptional 3D graphics performance, 2X that of the previous generation.

LOW POWER

The Endura TP945GM is optimized for use with the Intel® Core® Duo processor T2500 with a thermal design power (TDP) of 31W and the Intel® Core® Duo processor L2400 with a TDP of 15W. Use of the Intel® Celeron® M ULV 423 BGA processor enables an even lower TDP of just 5.5W. This delivers up to 28% less average power consumption compared to the previous generation. With extended temperature operation up to 70ºC, the Endura TP945GM is ideal for use in rugged, space constrained applications with demanding thermal performance characteristics. Components are also selected for a more ruggedized design to support embedded applications running 24 / 7.

HIGHLY INTEGRATED

With the integrated Intel® GMA 950 graphics controller, dual independent video support, Intel® High Definition Audio with 7.1 surround sound and interfaces for VGA, LVDS, DVI (via a Media Expansion Card), TV-out (composite, component, S-video) and S/PDIF digital audio output, the Endura TP945GM is well suited to all types of multi-media applications.

LONG LIFE

With a projected life time of up to 7 years, the Endura TP945GM is designed for the needs of embedded system designers. This is backed up by strong engineering support, sustaining and full product life cycle management from RadiSys.

ROHS COMPLIANT

The Endura TP945GM is fully RoHS 6 compliant to meet the latest legislative and environmental standards.

Endura TP945GM Specifications

FEATURE	FUNCTION	SPECIFICATION
FORM FACTOR	Size	Mini-ITX motherboard, 6.7” x 6.7”, 170mm x 170mm, 10-layer PCB
PROCESSOR	Type	Supports Intel® Core Duo™ and Celeron® M, LV, and ULV processors
	Socket	PGA-478 CPU socket and support for BGA-479 CPUs
	FSB	667MHz and 533MHz system bus
CHIPSET	Type	Intel® 945GM Express chipset with Intel® ICH7M
MEMORY	Type	Two sockets for DDR2-667, DDR2-553 and DDR2-400 DIMM modules
	Capacity	Up to 4GB of system memory (3.2GB approx available for system memory)
	Performance	Dual-Channel memory support
VIDEO	Type	Intel® Graphics Media Accelerator 950 integrated video
		Supports dual independent video outputs
	Resolution	VGA: 2048 x 1536 at 75Hz and 32-bit color, LVDS: 1600 x 1200
	Graphics Acceleration	x16 PCI Express graphics slot with support for Media Expansion Cards (ADD2+)
	Video Outputs	VGA, 18-bit dual channel LVDS, TV output header
	TV Output	Header for Composite, Component and S-Video outputs
AUDIO	Type	Intel® High Definition Audio using Sigmatel STAC9220 eight channel CODEC
	Connectors	6 audio jacks for 7.1 surround sound
	On-board CD-ROM audio input header	
	S/PDIF digital audio output	
ETHERNET	Controller	Single or dual Broadcom BCM5789 Gigabit Ethernet controllers
EXPANSION	PCI Express	x16 PCI Express graphics slot – supports x1 PCI Express cards
	PCI	Mini-PCI Type IIIA card socket
	CompactFlash	Type I socket

	PCMCIA	Type II socket
POWER MANAGEMENT	ACPI	ACPI 3.0 supporting states S0, S3 (suspend to RAM), S4 and S5
SYSTEM MANAGEMENT	System Monitoring	Voltage, temperature and fan monitoring (3 fans)
	Lithium cell voltage monitoring	
	Automatic fanspeed control based on thermal monitoring	
	Watchdog	Programmable watchdog timer
	SMbus	SMbus header
POWER SUPPLY	Type	Support for hard- and soft- switched power supplies
	Connector	Standard 24-pin ATX power supply connector with an additional 4-pin ATX 12V connector
BATTERY	Lilthium coin cell (5 years operating life typical)	
BIOS	Phoenix BIOS TrustedCore™ - includes network boot and PXE	
	Customizable logo and BIOS settings	
I/O	USB	Eight USB 2.0 ports – four on rear I/O panel and four on headers
	GPIO	13-bit General Purpose I/O header with an additional PWM signal
	Serial Ports	Four RS232 serial ports – two on rear I/O panel and two on headers
	IrDA	IrDA compliant infrared interface with support for SIR and ASK
DISKS	SATA	Two SATA 1.5Gbps ports
	IDE	One Ultra ATA100 interface with 44-way slim type header
SECURITY	TPM	Header connector for a Trusted Platform Module (TPM) 1.2
OPERATING SYSTEMS	Windows XP	
	Windows XPe	
	Windows Vista	
	Linux	
SAFETY COMPLIANCE	Evaluated in accordance with UL60950, EN60950 and IEC60950	
EMC COMPLIANCE	Evaluated in accordance with EN55022, EN55024 and FCC Part 15 Class B	

PHYSICAL SPECIFICATIONS

ENVIRONMENT	Temperature	Operating	0°C to 70°C
		Storage	-40°C to 85°C
	Relative Humidity	5% to 95% non-condensing	

Ordering Information

DESCRIPTION:

TP945GM with single Gigabit Ethernet
PRODUCT CODE: TP1G03-0-0

TP945GM with dual Gigabit Ethernet
PRODUCT CODE: TP2G03-0-0

TP945GM with dual Gigabit Ethernet and CompactFlash socket
PRODUCT CODE: TP2GC03-0-0

TP945GM with single Gigabit Ethernet, ULV Celeron M 423 and passive heatsink
PRODUCT CODE: TP1G03-423-0

Dual DVI Media Expansion Card
PRODUCT CODE: MEC-DUAL-DVI

I/O shield for TP945GM with single GbE
PRODUCT CODE: IOSHLD-TP1G

I/O shield for TP945GM with dual GbE
PRODUCT CODE: IOSHLD-TP2G

Standard fansink with aluminium heatsink
PRODUCT CODE: FNSNK-TPSTD

Higher performance fansink with copper heatsink
PRODUCT CODE: FNSNK-TPXT