

WADE-8071

Mini-ITX Board

User's Manual

Version 1.0

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Appendix A

Appendix B

How to Use This Manual

The manual describes how to configure your system board to meet various operating requirements. It is divided into five chapters, with each chapter addressing a basic concept and operation of Single Host Board.

Chapter 1 : System Overview. Presents what you have in the box and give you an overview of the product specifications and basic system architecture for this series model of single host board.

Chapter 2 : Hardware Configuration. Shows the definitions and locations of Jumpers and Connectors that you can easily configure your system.

Chapter 3 : System Installation. Describes how to properly mount the CPU, main memory and Compact Flash to get a safe installation and provides a programming guide of Watch Dog Timer function.

Chapter 4 : BIOS Setup Information. Specifies the meaning of each setup parameters, how to get advanced BIOS performance and update new BIOS. In addition, POST checkpoint list will give users some guidelines of trouble-shooting.

Chapter 5 : Troubleshooting. Provides various useful tips to quickly get its running with success. As basic hardware installation has been addressed in Chapter 3, this chapter will basically focus on system integration issues, in terms of backplane setup, BIOS setting, and OS diagnostics.

The content of this manual is subject to change without prior notice. These changes will be incorporated in new editions of the document. **Portwell** may make supplement or change in the products described in this document at any time.

Updates to this manual, technical clarification, and answers to frequently asked questions will be shown on the following web site : <http://www.portwell.com.tw/>

Chapter 1

System Overview

1.1 Introduction

Portwell Inc., a world-leading innovator in the Industrial PC (IPC) market and develop a new Intel® Mini-ITX board with latest Intel® platform for embedded application. The Portwell WADE-8071 takes advantage of Intel® 45-nanometer Hi-k process technology – the first generation of low-power IA-32 microarchitecture specially designed for Embedded Platform and can support Intel® 945GSE chipset with the ICH7-M, can provide the low power consumption for low profile fanless applications such as POS, ATM, Kiosk, Medical, Panel PC and Digital Signage.

WADE-8071 supports dual display by VGA and 24-bit LVDS. With its display-enriched interface, WADE-8071 can support various multimedia devices and enriched IO interfaces that can supply various USB and COM devices.

WADE-8071 supports SO-DIMM memory slot for DDR2 SDRAM up to 2GB, and comes with PS/2 Keyboard and Mouse header, 2 x RS232, 2 x SATA, 1 x IDE, 1 x Gigabit Ethernet, 6 x USB2.0 ports. It also support CompactFlash Socket and one PCIEx1 Slot for embedded application usage.

1.2 Check List

The WADE-8071 package should cover the following basic items

- ✓ One WADE-8071 Mini ITX Main Board
- ✓ One Serial ATA Cable
- ✓ One SATA Power Cable
- ✓ One I/O Shield bracket
- ✓ One Installation Resources CD-Title

If any of these items is damaged or missing, please contact your vendor and keep all packing materials for future replacement and maintenance.

1.3 Product Specification

- **Main processor**
 - Support Intel Atom processor N270
 - CPU bus clock: 667/533 MHz
- **Chipset**
Intel® 945GSE and ICH7-M
- **Main Memory**
 - Support signal channel DDR2 memory interface
 - Up to 2GB DDR2 533 SDRAM on SO-DIMM socket
- **System BIOS**
AWARD BIOS
- **Expansion Interface**
One PCI Express x1 slot
- **SATA Interface**
Two SATA ports
- **Serial Ports**
Support two RS-232 serial ports
- **IR Interface**
N/A
- **Parallel Port**
N/A
- **USB Interface**
Support six USB (Universal Serial Bus) ports (four at rear, two on-board for internal devices)
- **PS/2 Mouse and Keyboard Interface**
Support on board pin header for PS/2 keyboard/mouse
- **Audio Interface**
Connector of Mic-in/Line-out
- **Real Time Clock/Calendar (RTC)**
Support Y2K Real Time Clock/Calendar
- **Watchdog Timer**
 - Support WDT function through software programming for enable/disable and interval setting
 - Generate system reset
- **On-board VGA**
 - Intel 945GSE Integrated GMA950 Graphics device
 - Intel DVMT 3.0 supports up to 128MB video memory

- **On-board Ethernet LAN**
One Gigabit Ethernet (10/100/ 1000 Mbits/sec) LAN ports
- **High Driving GPIO**
Onboard programmable 8-bit Digital I/O interface
- **Cooling Fans**
Support one 3-pin power connector for system fan
- **System Monitoring Feature**
Monitor system temperature and major power sources, etc
- **Outline Dimension (L X W):**
170mm (6.69") X 170mm (6.69")
- **Power Requirements:**
+12V(Board)@1.25A

Configuration:

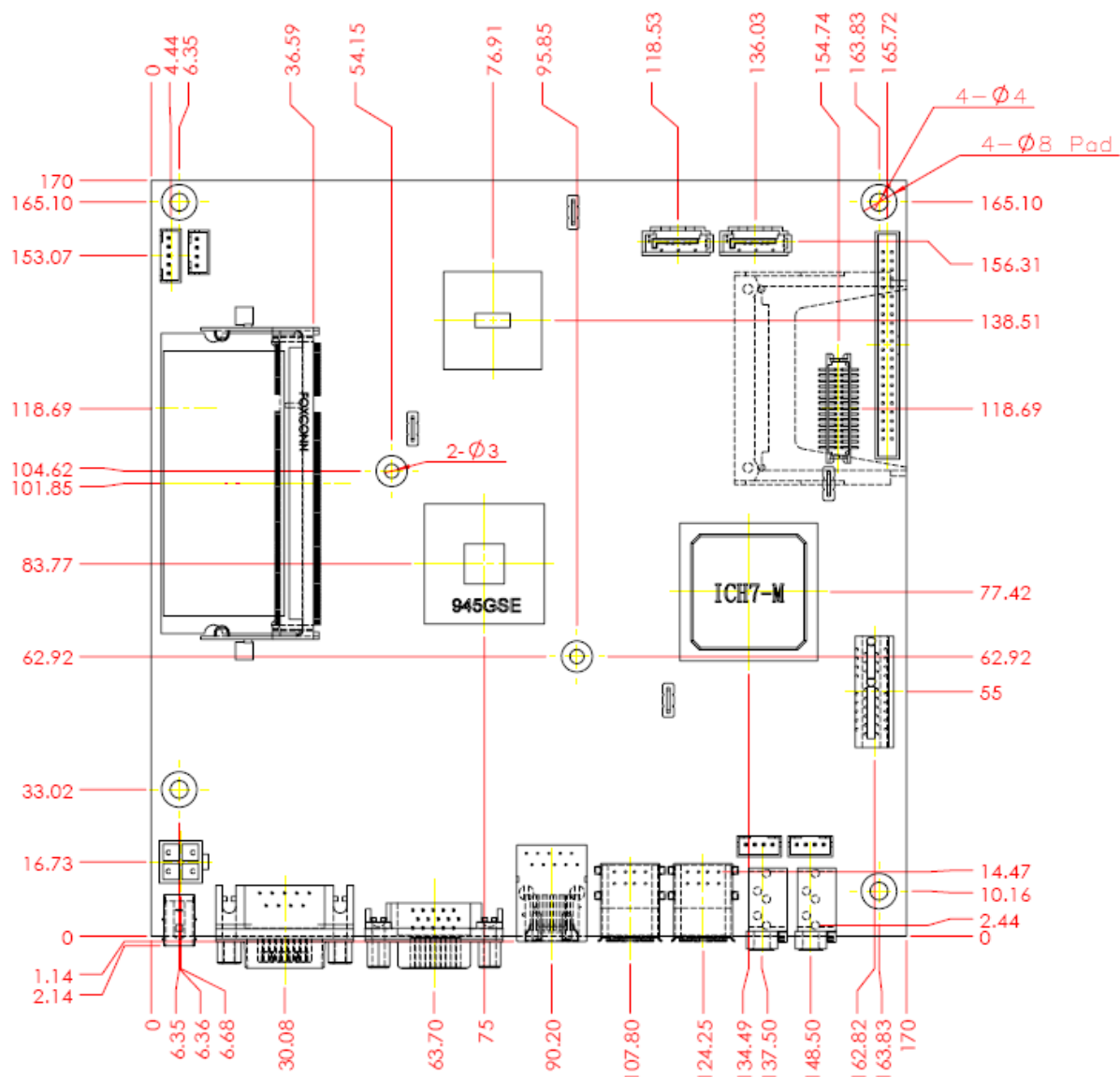
System Configuration	
CPU Type	Intel® Atom™ N270 1.60GHz (133*12) L2:512K FSB:533MHz
SBC BIOS	Portwell, Inc. WADE-8071 BIOS Rev.: R1.00.W0.T0 (02192009)
Memory	Transcend DDR2 533MHz 2GB (Micron 7WE17 D9HNL)
VGA Card	Onboard Mobile Intel® 845 Express Chipset Family
VGA Driver	Mobile Intel® 845 Express Chipset Family Version 6.14.10.4926
LAN Card	Onboard Realtek RTL8111C PCI-E Gigabit Ethernet NIC
LAN Driver	Realtek RTL8168C/8111C(P) PCI-E Gigabit Ethernet Version 5.698.701.2008
Audio Card	Onboard Realtek ALC662 Audio Chipset
Audio Driver	Realtek High Definition Audio Version 5.10.0.5735
Chip Driver	Intel® Chipset Device Software Version 8.3.0.1013
USB 2.0 Driver	Intel® 8201G (ICH7 Family) USB2 Enhanced Host Controller Version 8.2.0.1008
SATA HDD	Seagate ST3120813AS 120GB
Compact Flash	Apacer 64MB
CDROM	LITE-ON LH20A1S DVD-ROM
Power Supply	Portwell,Inc PW-330ATXE-12V

Programs for loading both CPU & VGA: Run Burning Test V5.3
RUN time: 10/ 30 Minutes.

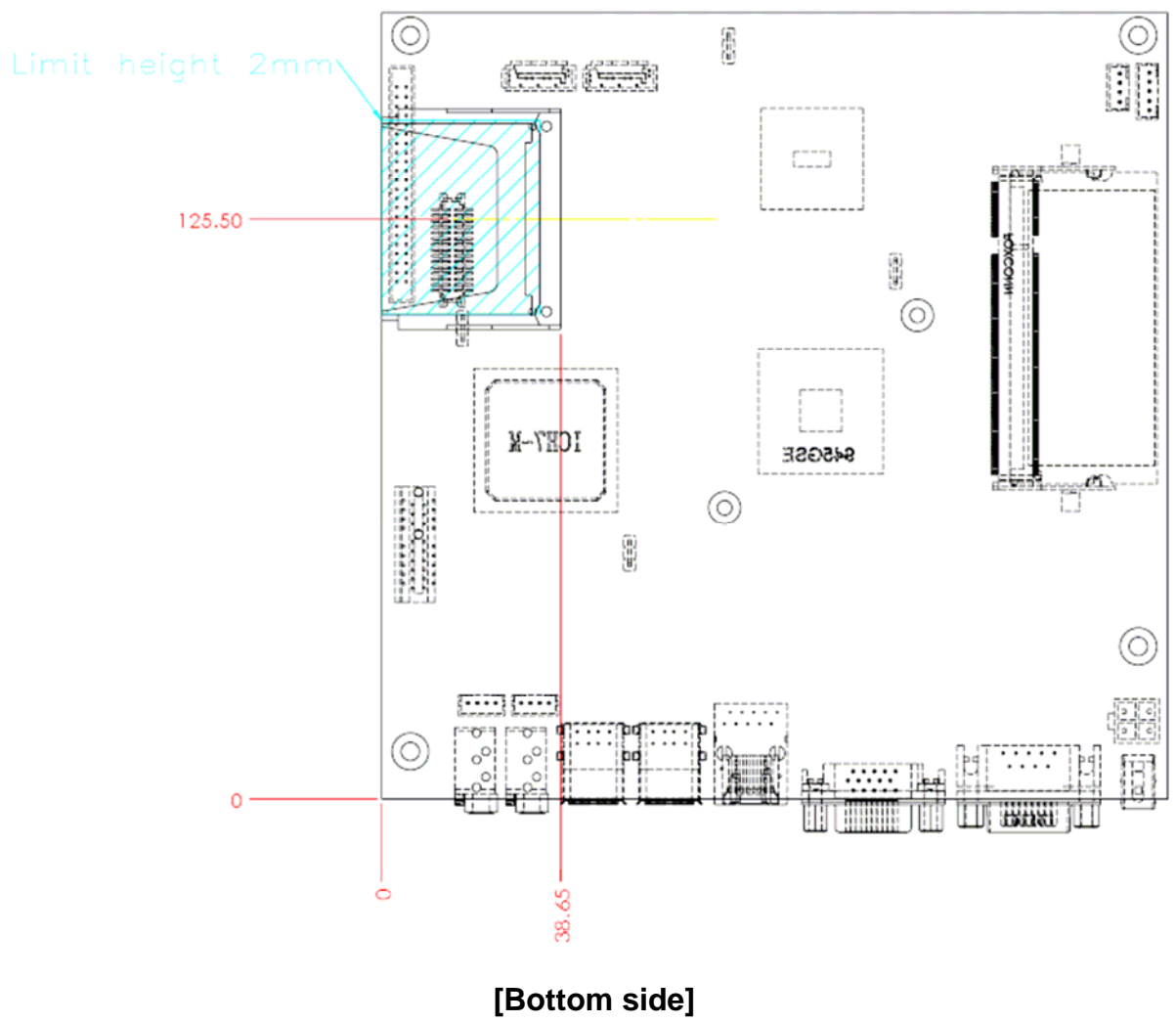
Item	Power ON	Full Loading 10Min	Full Loading 30Min
System +12V	1.25A	1.80A	1.85A
USB Loading Test	<u>5.2</u> V/ <u>0.6</u> A	N/A	N/A

- **Operating Temperature:**
0°C ~ 55°C
- **Storage Temperature:**
-20°C ~ 80°C
- **Relative Humidity:**
5% ~ 90%, non-condensing

1.3.1 Mechanical Drawing

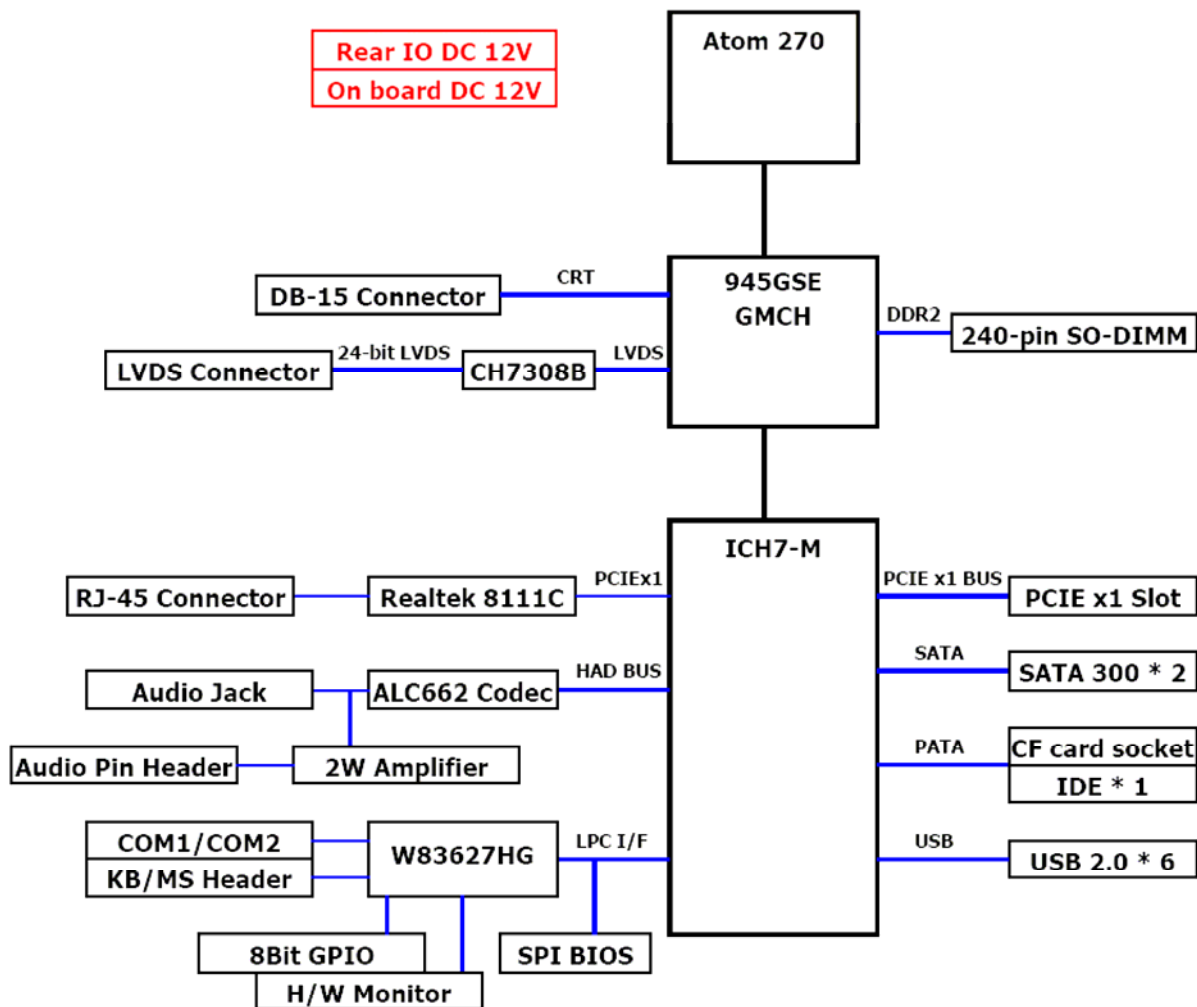


[TOP side]



1.4 System Architecture

All of details operating relations are shown in WADE-8071 series System Block Diagram



WADE-8071 System Block Diagram

