

# QDSP-2070

Digital Signage Player with Intel® Ivy Bridge Platform

## User's Guide



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Quanmax reserves the right to make changes without notice in product or component design as warranted by evolution in user needs or progress in engineering or manufacturing technology.

Changes which affect the operation of the unit will be documented in the next revision of this user's guide.

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# Safety Instructions

## ■ Before You Begin

Before handling the product, read the instructions and safety guidelines on the following pages to prevent damage to the product and to ensure your own personal safety. Refer to the “Advisories” section in the Preface for advisory conventions used in this user’s guide, including the distinction between Warnings, Cautions, Important Notes, and Notes.

- Always use caution when handling/operating a computer. Only qualified, experienced, authorized electronics service personnel should access the interior of a computer. The power supplies produce high voltages and energy hazards, which can cause bodily harm.
- Use extreme caution when installing or removing components. Refer to the installation instructions in this user’s guide for precautions and procedures. If you have any questions, please contact Quanmax Post-Sales Technical Support.
- Access can only be gained by service persons or by users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and access is through the use of a tool or lock and key, or other means of security, and is controlled by authority responsible for the location.

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### WARNING



High voltages are present inside the chassis when the unit’s power cord is plugged into an electrical outlet. Turn off system power, turn off the power supply, and then disconnect the power cord from its source before removing the chassis cover. Turning off the system power switch does not remove power to components.

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### ■ When Working Inside a Computer

Before taking covers off a computer, perform the following steps:

1. Turn off the computer and any peripherals.
2. Disconnect the computer and peripherals from their power sources or subsystems to prevent electric shock or system board damage. This does not apply when hot swapping parts.
3. Follow the guidelines provided in “Preventing Electrostatic Discharge” on the following page.
4. Disconnect any telephone or telecommunications lines from the computer.

In addition, take note of these safety guidelines when appropriate:

- To help avoid possible damage to system boards, wait five seconds after turning off the computer before removing a component, removing a system board, or disconnecting a peripheral device from the computer.
- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs. If you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before connecting a cable, make sure both connectors are correctly oriented and aligned.

---

#### CAUTION



Do not attempt to service the system yourself except as explained in this user's guide. Follow installation and troubleshooting instructions closely.

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### ■ Preventing Electrostatic Discharge

Static electricity can harm system boards. Perform service at an ESD workstation and follow proper ESD procedure to reduce the risk of damage to components. Quanmax strongly encourages you to follow proper ESD procedure, which can include wrist straps and smocks, when servicing equipment.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not

remove the component's antistatic packing material until you are ready to install the component in a computer. Just before unwrapping the antistatic packaging, be sure you are at an ESD workstation or grounded. This will discharge any static electricity that may have built up in your body.

- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all sensitive components at an ESD workstation. If possible, use antistatic floor pads and workbench pads.
- Handle components and boards with care. Don't touch the components or contacts on a board. Hold a board by its edges or by its metal mounting bracket.
- Do not handle or store system boards near strong electrostatic, electromagnetic, magnetic, or radioactive fields.

## ■ Instructions for Lithium Battery

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### WARNING

Danger of explosion when battery is replaced with incorrect type. Only replace with the same or equivalent type recommended by the manufacturer.

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Do not dispose of lithium batteries in domestic waste. Dispose of the battery according to the local regulations dealing with the disposal of these special materials (e.g. to the collecting points for disposal of batteries)

## ■ Voltage Ratings

The external power adaptor of the QDSP-2070 has the following voltage ratings:

- Input: 100-240 VAC
- Output: 75W, +19Vdc, 3.95A

# Preface

## ■ How to Use This Guide

This guide is designed to be used as step-by-step instructions for installation, and as a reference for operation, troubleshooting, and upgrades.

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### NOTE



Driver downloads and additional information are available under Downloads on our web site: [www.quanmax.com](http://www.quanmax.com).

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## ■ Unpacking

When unpacking, follow these steps:

1. After opening the box, save it and the packing material for possible future shipment.
2. Remove all items from the box. If any items listed on the purchase order are missing, notify Quanmax customer service immediately.
3. Inspect the product for damage. If there is damage, notify Quanmax customer service immediately. Refer to “Warranty Policy” for the return procedure.

## ■ Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices.

### **FCC Compliance Statement:**

This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radiofrequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause

interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by Quanmax could void the user's authority to operate the equipment.

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### NOTE



The assembler of a personal computer system may be required to test the system and/or make necessary modifications if a system is found to cause harmful interference or to be noncompliant with the appropriate standards for its intended use.

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## ■ Warranty Policy

### Limited Warranty

Quanmax Inc.'s detailed Limited Warranty policy can be found under Support at [www.quanmax.com](http://www.quanmax.com). Please consult your distributor for warranty verification.

The limited warranty is void if the product has been subjected to alteration, neglect, misuse, or abuse; if any repairs have been attempted by anyone other than Quanmax or its authorized agent; or if the failure is caused by accident, acts of God, or other causes beyond the control of Quanmax or the manufacturer. Neglect, misuse, and abuse shall include any installation, operation, or maintenance of the product other than in accordance with the user's guide.

No agent, dealer, distributor, service company, or other party is authorized to change, modify, or extend the terms of this Limited Warranty in any manner whatsoever.

Quanmax reserves the right to make changes or improvements in any product without incurring any obligation to similarly alter products previously purchased.

### Return Procedure

For any Limited Warranty return, please contact Support at [www.quanmax.com](http://www.quanmax.com) and login to obtain a Return Material Authorization (RMA) Number. If you do not have an

account, send an email to support@quanmax.com to apply for one.

All product(s) returned to Quanmax for service or credit must be accompanied by a Return Material Authorization (RMA) Number. Freight on all returned items must be prepaid by the customer who is responsible for any loss or damage caused by common carrier in transit. Returns for Warranty must include a Failure Report for each unit, by serial number(s), as well as a copy of the original invoice showing the date of purchase.

To reduce risk of damage, returns of product must be in a Quanmax shipping container. If the original container has been lost or damaged, new shipping containers may be obtained from Quanmax Customer Service at a nominal cost. Quanmax owns all parts removed from repaired products. Quanmax uses new and reconditioned parts made by various manufacturers in performing warranty repairs and building replacement products. If Quanmax repairs or replaces a product, its warranty term is not extended.

Shipments not in compliance with this Limited Warranty Return Policy will not be accepted by Quanmax.

### **Limitation of Liability**

In no event shall Quanmax be liable for any defect in hardware, software, loss, or inadequacy of data of any kind, or for any direct, indirect, incidental, or consequential damages in connection with or arising out of the performance or use of any product furnished hereunder. Quanmax's liability shall in no event exceed the purchase price of the product purchased hereunder. The foregoing limitation of liability shall be equally applicable to any service provided by Quanmax or its authorized agent.

## **■ Maintaining Your Computer**

### **Environmental Factors**

#### **■ Temperature**

The ambient temperature within an enclosure may be greater than room ambient temperature. Installation in an enclosure should be such that the amount of air flow required for safe operation is not compromised.

Consideration should be given to the maximum rated ambient temperature.

Overheating can cause a variety of problems, including premature aging and failure of chips or mechanical failure of devices.

If the system has been exposed to abnormally cold temperatures, allow a two-hour warm-up period to bring it up to normal operating temperature before

turning it on. Failure to do so may cause damage to internal components, particularly the hard disk drive.

### ■ **Humidity**

High-humidity can cause moisture to enter and accumulate in the system. This moisture can cause corrosion of internal components and degrade such properties as electrical resistance and thermal conductivity. Extreme moisture buildup inside the system can result in electrical shorts, which can cause serious damage to the system.

Buildings in which climate is controlled usually maintain an acceptable level of humidity for system equipment. However, if a system is located in an unusually humid location, a dehumidifier can be used to maintain the humidity within an acceptable range. Refer to the “Specifications” section of this user’s guide for the operating and storage humidity specifications.

## **Power Protection**

The greatest threats to a system’s supply of power are power loss, power spikes, and power surges caused by electrical storms, which interrupt system operation and/or damage system components. To protect your system, always properly ground power cables and one of the following devices.

### ■ **Surge Protector**

Surge protectors are available in a variety of types and usually provide a level of protection proportional with the cost of the device. Surge protectors prevent voltage spikes from entering a system through the AC power cord. Surge protectors, however, do not offer protection against brownouts, which occur when the voltage drops more than 20 percent below the normal AC line voltage level.

### ■ **Line Conditioner**

Line conditioners go beyond the overvoltage protection of surge protectors. Line conditioners keep a system’s AC power source voltage at a fairly constant level and, therefore, can handle brownouts. Because of this added protection, line conditioners cost more than surge protectors. However, line conditioners cannot protect against a complete loss of power.

### ■ **Uninterruptible Power Supply**

Uninterruptible power supply (UPS) systems offer the most complete protection

against variations on power because they use battery power to keep the server running when AC power is lost. The battery is charged by the AC power while it is available, so when AC power is lost, the battery can provide power to the system for a limited amount of time, depending on the UPS system.

UPS systems range in price from a few hundred dollars to several thousand dollars, with the more expensive units allowing you to run larger systems for a longer period of time when AC power is lost. UPS systems that provide only 5 minutes of battery power let you conduct an orderly shutdown of the system, but are not intended to provide continued operation. Surge protectors should be used with all UPS systems, and the UPS system should be Underwriters Laboratories (UL) safety approved.

# Chapter 1

## Introduction

### ■ Overview

The QDSP-2070 is a compact size Box PC ideal for space critical applications. This embedded hardware platform features 3rd Generation Intel® Core™ i5/i7 Processors, Intel® QM77 Express chipset, and DDR3 1066/1333/1600 SO-DIMM. It comes with a 2.5" SATA hard drive or SSD, Compact Flash slot, HDMI, DVI, 2x USB 2.0, 4x USB 3.0, eSATA, COM, and HD Audio. The QDSP-2070 provides high reliability for harsh environments, compact size, high performance and is highly suited to a wide range of industrial applications such as Digital Signage, Gaming, Transportation, Surveillance, and Thin Servers.

### Checklist

- QDSP-2070
- Power Adapter
- Power Cord
- Driver CD
- Quick installation Guide
- VESA Mounting Kit
- Optional wireless LAN, 3G

### Features

- Intel® Ivy Bridge Platform with QM77 Express chipset
- 2x DDR3 1066/1333/1600 SO-DIMM up to 16GB
- 1x DVI-I, 1x HDMI, 1x DP, 2x GbE and 5.1 channel audio output
- SATA HDD or SSD, 1x eSATA, 1x CF Slot, 2x USB2.0 and 4x USB 3.0
- Intel® iAMT 8.0 supported
- Optional Wireless Ethernet or 3G Module

## ■ Product Specifications

Dimensions	200 x 35 x 153.1 mm (WxHxD)
Weight	1.2 Kg
CPU/ Chipset	Intel® Ivy Bridge Platform 3rd Generation Intel® Core™ i5/i7 Processors Intel® QM77Express Chipset
RAM	2x DDR3 1066/1333/1600 SO-DIMM up to 16GB
Storage	1 x 2.5" SATA HDD or SSD
Front IO	3x 3.5mm Phone Jack, support 5.1 channel audio output 1x S/PDIF Output 1x eSATA 2x USB 2.0 , 4x USB 3.0 1x CF Slot 1x Power LED, 1x Storage status LED (HDD/CF) and 1x WiFi status LED 1x 3G external antenna
Rear IO	1x DC JACK 1x DVI-I for DVI-D or VGA output 1x HDMI 1x DP 2x RJ-45 GbE ports 1x COM Port support RS-232/422/485 2x WiFi external antenna
Expansion Slot	2 x mini PCIe slots (Optional for 3G/WiFi/Bluetooth module) 1x SIM card slot (for 3G appliance) support user accessible
Cooling	System Fan with Smart Fan Control
Power Unit	Input: 100-240 VAC Output: +19VDC, 3.95A, 75W
Temperature / Humidity	Operating: 0°C to 40°C, 0%-90%, non-condensing Storage: -20°C to 80°C, 0%-90%, non-condensing
OS Support	Windows Xp/XPe/Windows 7/ Windows 8 / Linux
Mounting	VESA-mount
Certifications	CE, FCC Class A

Table 1 QDSP-2070 product specifications

## ■ System tour

Refer to the diagrams below to identify the components of the system.

### ■ Front I/Os

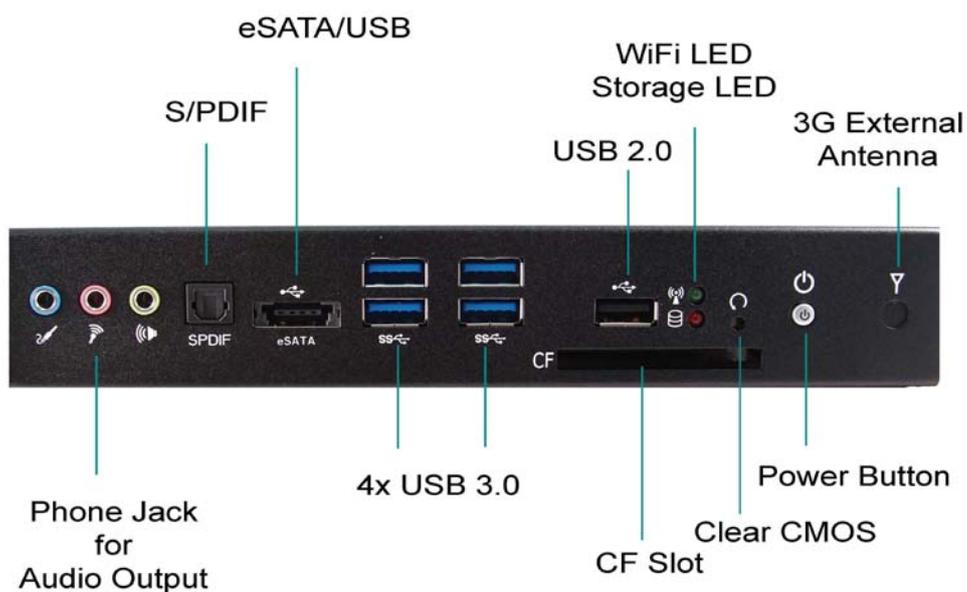


Figure 1 Front I/Os

#### Power Button

The power push button allows powering ON and OFF the system.

#### Clear CMOS Button

To clear the CMOS, use the tip of a pen to press the button briefly (for less than three seconds).

#### WiFi LED (Green)

The WiFi LED will light when the WiFi is on.

#### Storage LED (Red)

The hard disk/card reader LED blinks when data is being written into or read from the HDD/Card Reader.

### USB

The USB (Universal Serial Bus) port is compatible with USB devices such as keyboards, mouse devices, cameras, and hard disk drives. USB allows many devices to run simultaneously on a single computer, with some peripheral acting as additional plug-in sites or hubs.

### S/PDIF

S/PDIF output for carrying digital audio signals out to the device.

### eSATA/USB (combo)

This provides eSATA and USB connectivity as a combo connector.

### 3G External Antenna

Spared hole on the casing for connecting 3G external antenna

### CF Slot

CompactFlash Card Slot

### Phone Jack

#### Audio Out

The stereo headphone jack is used to connect the system's audio out signal to amplified speakers or headphones.

### MIC-IN

The microphone jack is designed to connect the microphone used for video conferencing, voice narrations, or simple audio recordings.

### Line-IN

The Line-in jack is designed to take input from a higher-powered sound source.



#### CAUTION

This connector do not support hot-swapping. Users should not connect or disconnect their eSATA/USB (combo) & CF devices from PC when the system is Working.

---

## ■ Rear I/Os

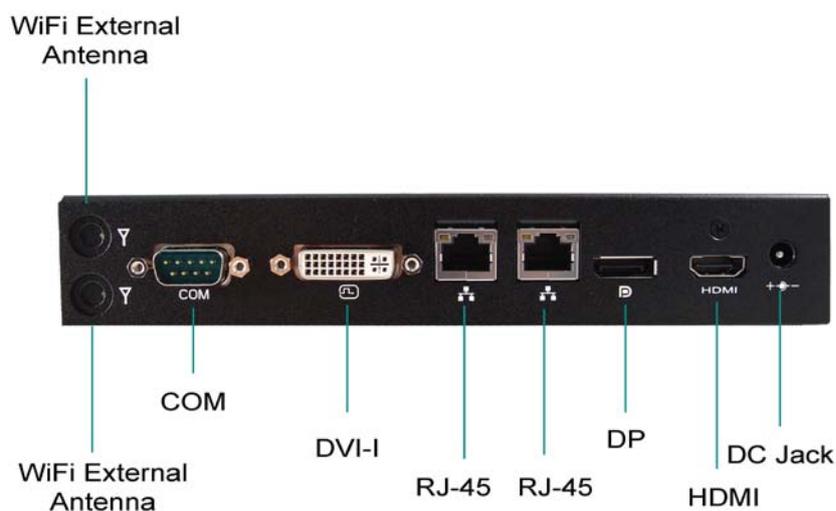


Figure 2 Rear I/Os

### DC Jack

The supplied power adapter converts AC power to DC for use with this jack. Power supplied through this jack supplies power to the PC. To prevent damage to the PC, always use the supplied power adapter.

### HDMI

HDMI connector for display output

### DP

Display Port

### Ethernet

The eight-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network.

### DVI-I

DVI-I connector for DVI-D or VGA output

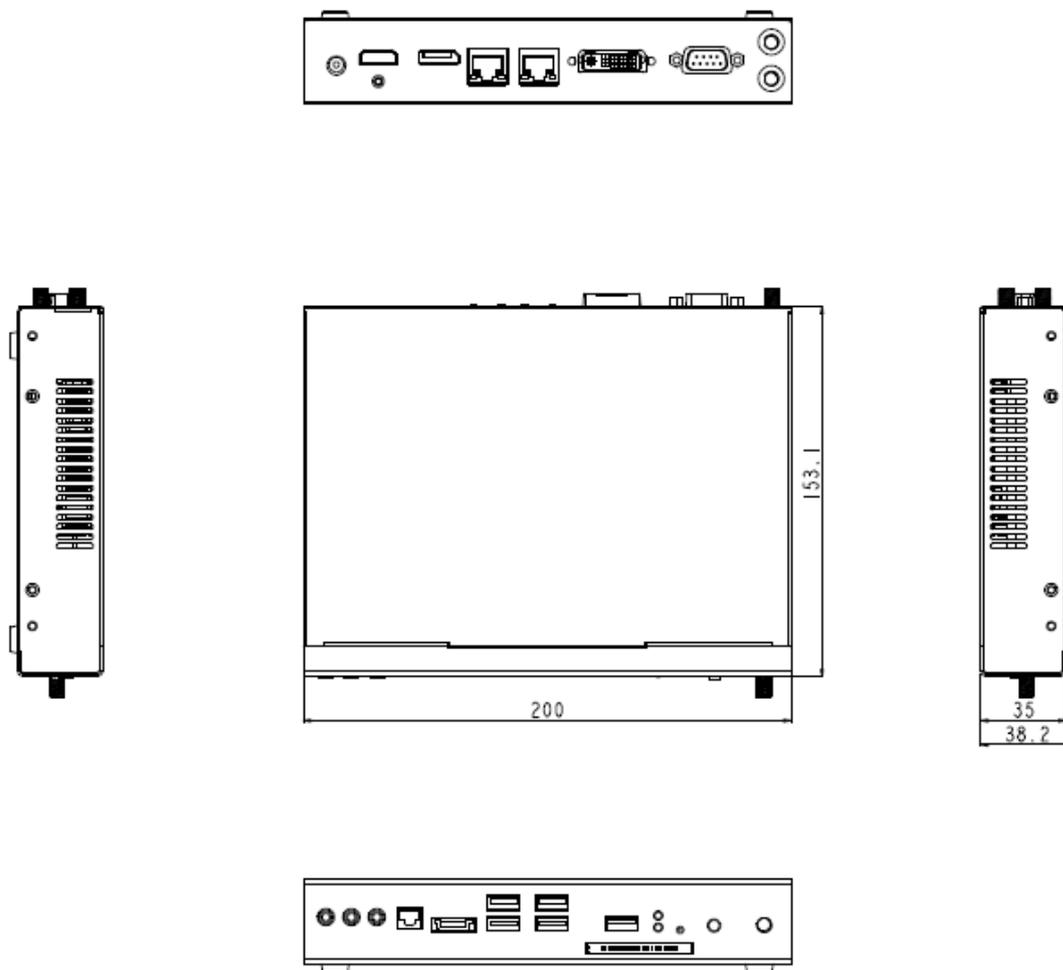
### COM

D-Sub 9 pin connector for RS-232 connection

### WiFi External Antenna

Spared hole on the casing for connecting WiFi external antenna

## ■ Mechanical Dimensions



200 x 35 x 153.1 mm (W x H x D)

Figure 3 Mechanical Dimensions

## Chapter 2

# Getting Started

### ■ Setting up your PC

#### ■ Connect the DVI-I

##### Connecting the monitor

Connect the DVI-I cable from your display to the DVI-I port.

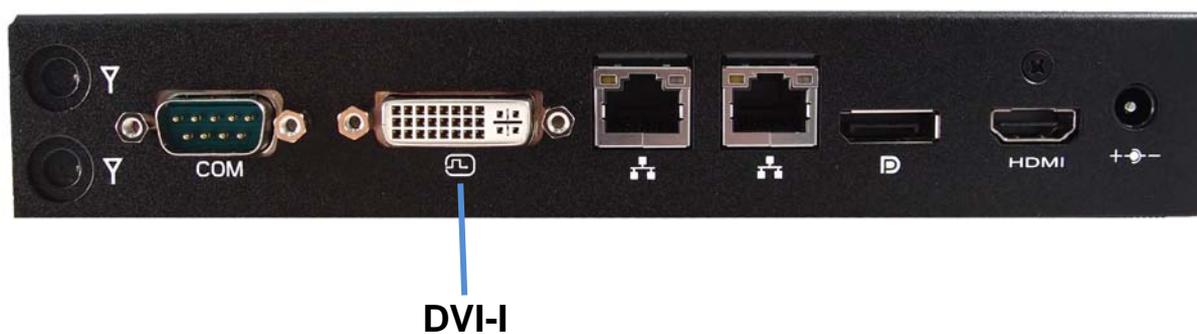


Figure 4 Connect the DVI cable

---

#### NOTE



When the system reboots without connecting the DVI, there might be no image on screen when you insert the DVI cable. Please pressing **<Ctrl>+<Alt>+<F4>** simultaneously to show the image on screen.

---

## ■ Connecting USB mouse & keyboard

Your QDSP-2070 does not come with a keyboard and mouse, but you can use any USB keyboard or mouse with your computer.

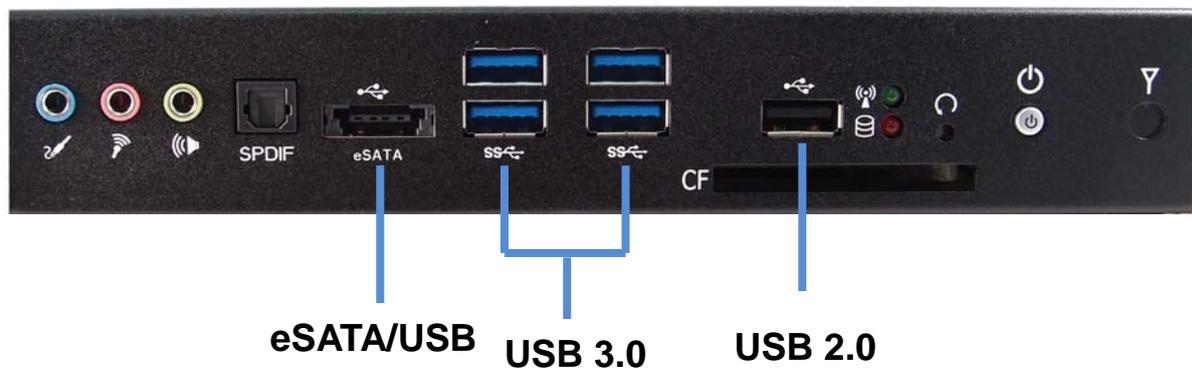


Figure 5 Connect USB mouse & keyboard

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### NOTE

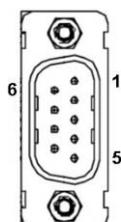


Using a third-party USB mouse or keyboard may require software drivers. Check the manufacturer's website for the latest software drivers.

---

■ **COM port**

COM port with the pin definitions.



Pin	RS-232	RS-422	Half Duplex RS-485	Full Duplex RS-485
1	DCD	TX-	DATA-	TX-
2	RXD	RX+	NA	RX+
3	TXD	TX+	DATA+	TX+
4	DTR	RX-	NA	RX-
5	GND	GND	GND	GND
6	DSR	NA	NA	NA
7	RTS	NA	NA	NA
8	CTS	NA	NA	NA
9	RI / +5V*	NA / +5V*	NA / +5V*	NA / +5V*

Figure 6 COM port

■ **Connecting to a network device**

Connect one end of a network cable to the LAN port on the system rear panel and the other end to a hub or switch.

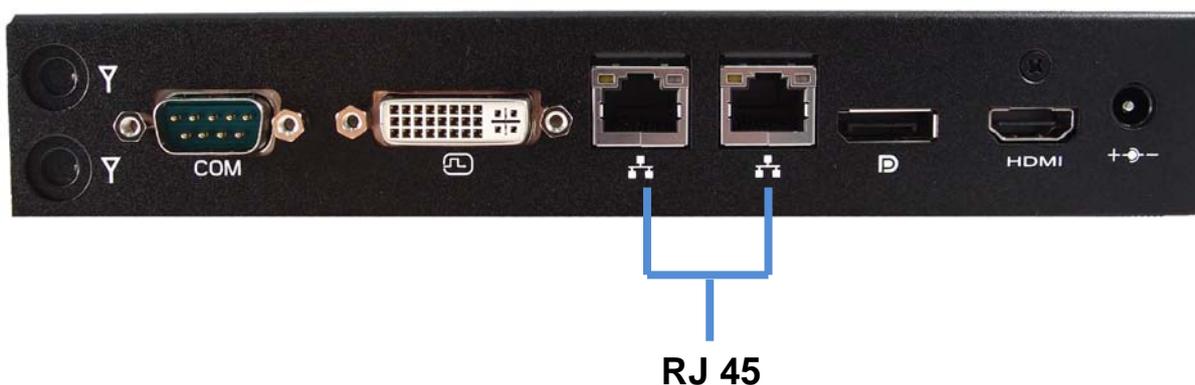


Figure 7 Network cable with RJ45 connector

## ■ Turning on the system

1. Connect the supplied AC power cord to the system AC power inlet.
2. Connect the other end of the AC power cord to a corresponding outlet.
3. Press the power switch to turn on the system



Figure 8 Turning on the system

## ■ Connecting VESA Mount on QDSP-2070

1. Take out the VESA mounting kit from your package and facing it onto the bottom of QDSP-2070; then tightening the screws on your QDSP-2070 as figures shown below.

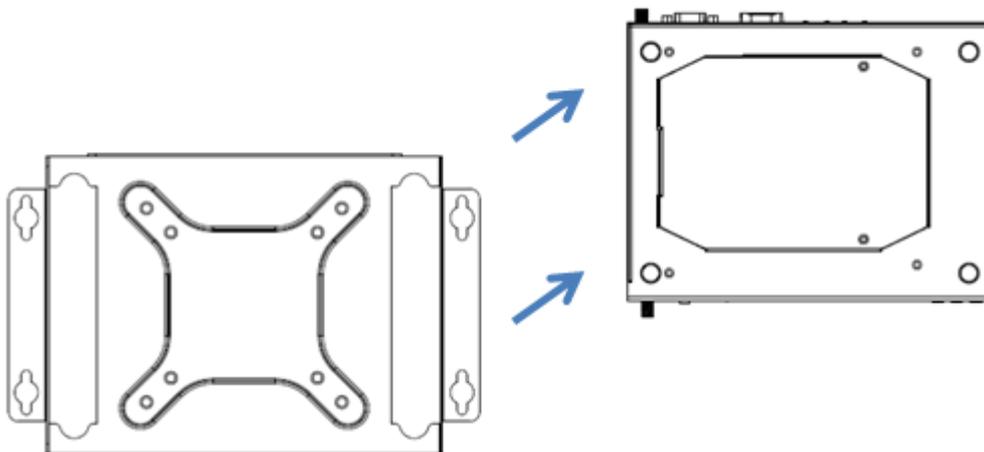


Figure 9 VESA Mount Assembly

2. Following figures are the complete status when you done.

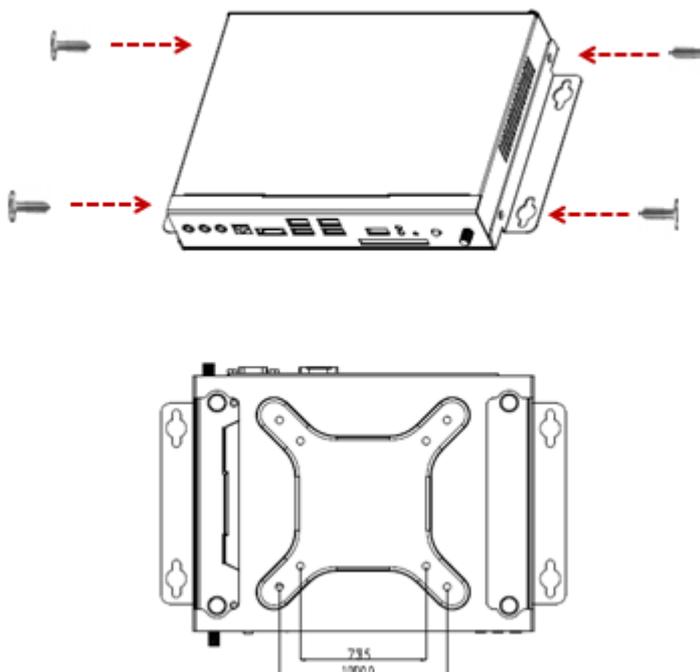


Figure 10 VESA Mount on QDSP-2070

## ■ Mounting your PC to a monitor

1. Firstly, mount your VESA kit on the backside of the monitor with four screws in the package.
2. Secondly, place the QDSP-2070 on the VESA mounting kit and then tightening the screws from the holes on both sides of the VESA bracket - make sure the computer is fitting well on the bracket.

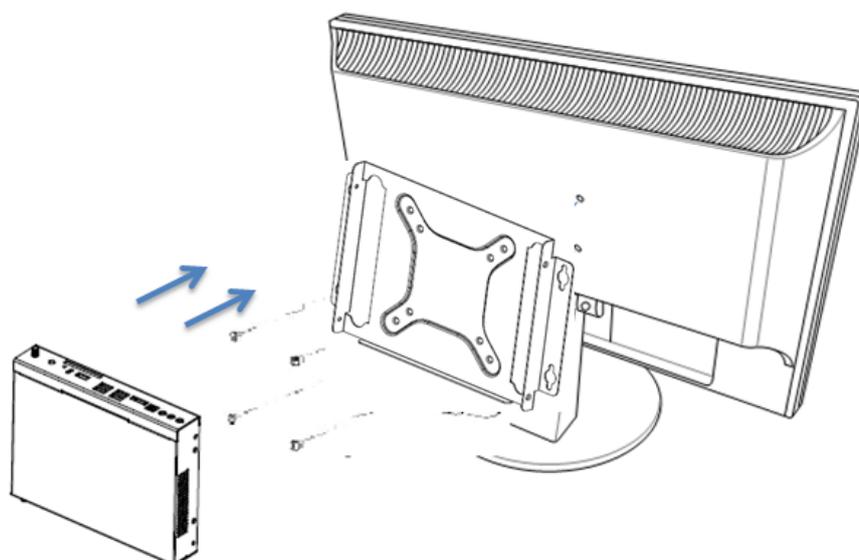


Figure 11 VESA mounting

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### NOTE



To fasten the metal shelf, your monitor must comply with VESA75 or VESA100 standard.

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Remarks: VESA mounting kit could be used as wall mounting kit as well.

## ■ Changing Memory and mini-PCle

Firstly, Opening the cover by loosening the two screws on the bottom of QDSP-2070 as shown below;

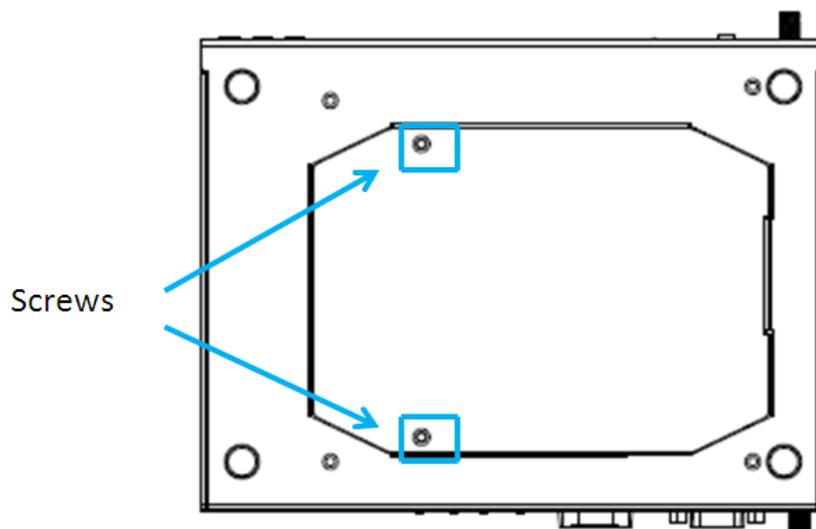


Figure 12 Opening the Cover on the Bottom

Then you may able to change the DDR SO-DIMM and/or mini-PCle modules.

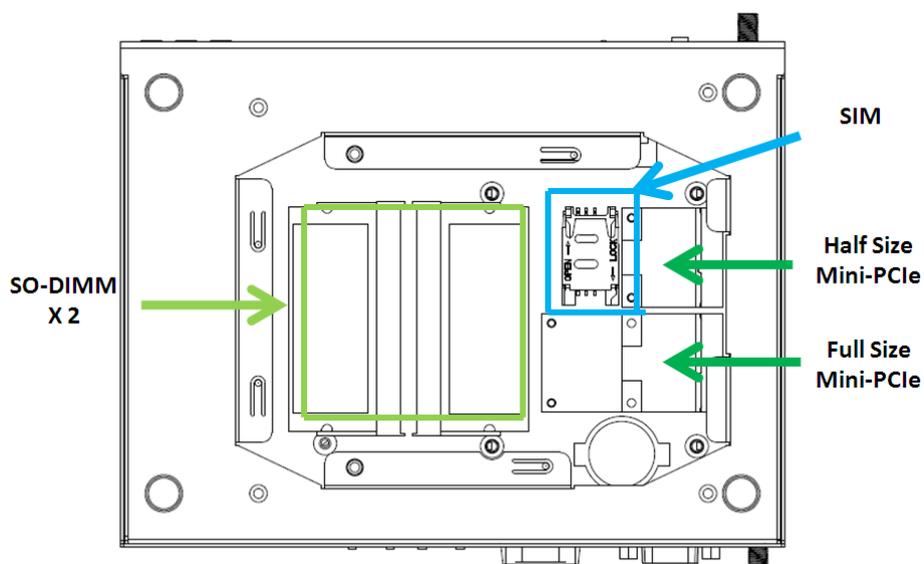


Figure 13 Bottom view of Main Board

Remarks: Please use Full Size Mini-PCle slot for expansion if you are using 3G module.

## Changing Memory

### Carefully follow the steps below in order to install the SO-DIMMs:

1. To avoid generating static electricity and damaging the SO-DIMM, ground yourself by touching a grounded metal surface or use a ground strap before you touch the SO-DIMM.
2. Do not touch the connectors of the SO-DIMM. Dirt or other residue may cause a malfunction.
3. Hold the SO-DIMM with its notch aligned with the memory socket of the board and insert it at a 30-degree angle into the socket.

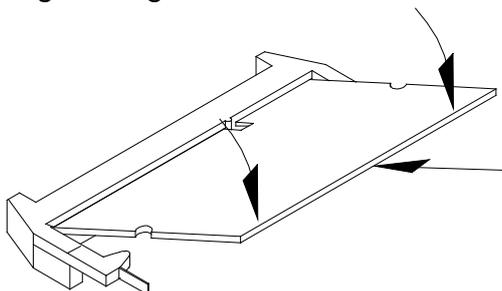


Figure 14 SO-DIMM Installation (1)

Align the SO-DIMM Memory Module with the onboard socket

4. Fully insert the module into the socket until a “click” is heard.
5. Press down on the SO-DIMM so that the tabs of the socket lock on both sides of the module

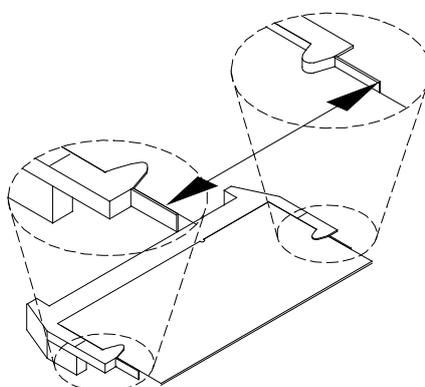


Figure 15 SO-DIMM Installation (2)

Press down on the SO-DIMM Memory Module to lock it in place

### Removing a SO-DIMM:

To remove the SO-DIMM, use your fingers or a small screwdriver to carefully push away the tabs that secure either side of the SO-DIMM. Lift it out of the socket.

*Make sure you store the SO-DIMM in an anti-static bag. The socket must be populated with memory modules of the same size and manufacturer.*

## Changing mini-PCle

(1) Place your mini-PCle module toward the mini-PCle socket.

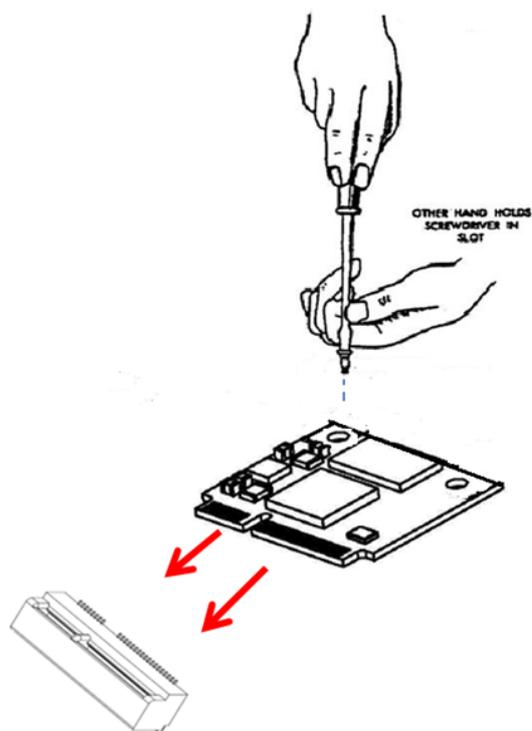


Figure 16 Mini-PCle Installation

(2) Tightening the screw on the hole of the mini-PCle module as shown above.

## Chapter 3

# AMI BIOS Setup

### ■ Overview

This chapter provides a description of the AMI BIOS. The BIOS setup menus and available selections may vary from those of your product. For specific information on the BIOS for your product, please contact Quanmax.



**NOTE:** The BIOS menus and selections for your product may vary from those in this chapter. For the BIOS manual specific to your product, please contact Quanmax

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AMI's ROM BIOS provides a built-in Setup program, which allows the user to modify the basic system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS, so that data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM will not need to be changed unless there is a configuration change in the system, such as a hard drive replacement or when a device is added.

It is possible for the CMOS battery to fail, which will cause data loss in the CMOS only. If this happens you will need to reconfigure your BIOS settings.

## ■ Main Menu

The BIOS Setup is accessed by pressing the DEL key after the Power-On Self-Test (POST) memory test begins and before the operating system boot begins. Once you enter the BIOS Setup Utility, the Main Menu will appear on the screen. The Main Menu provides System Overview information and allows you to set the System Time and Date. Use the “<” and “>” cursor keys to navigate between menu screens.

Table 2 BIOS Main Menu

BIOS SETUP UTILITY				
<b>M a i n</b>	<b>A d v a n c e d</b>	<b>B o o t</b>	<b>S e c u r i t y</b>	<b>S a v e &amp; E x i t</b>
Product Information				
Product Name		QDSP-2070		
BIOS Version		1.00		
BIOS Build Date		08/20/2012		
ME FW Version		8.0.13.1502		
CPU Information				
Intel® Core™ i7-3610QE CPU @ 2.30GHz				
Microcode Revision		12		
Processor Cores		4		
Memory Information				
Total Size		1024 MB (DDR3)		→ ← Select Screen
Frequency		1333 MHz		↑↓ Select Item
System date		[Wed 08/22/2012]		Enter: Select
System time		[09:43:19]		+ - Change Opt.
				F1: General Help
				F2: Previous Values
				F3: Optimized Defaults
				F4 Save & Exit
				ESC Exit
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## ■ Advanced Menu

Table 3 Advanced Menu

BIOS SETUP UTILITY		
Main	Advanced	Boot Security Server Mgmt Save & Exit
Onboard LAN1 Controller	[Enabled]	
Onboard LAN1 Boot	[Disabled]	
Onboard LAN2 Controller	[Enabled]	
Onboard LAN2 Boot	[Disabled]	→ ← Select Screen
Audio Controller	[Enabled]	↑↓ Select Item
> Display Configuration		Enter: Select
> Power Management Configuration		+ - Change Opt.
> CPU Advanced Configuration		F1: General Help
> Trusted Computing		F2: Previous Values
> SATA Configuration		F3: Optimized Defaults
> Intel(R) Rapid Start Technology		F4 Save & Exit
> Intel TXT(LT) Configuration		ESC Exit
> AMT Configuration		
> USB Configuration		
> Super IO Configuration		
> H/W Monitor		
> Intel(R) Smart Connect Technology		
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### Onboard LAN 1 Controller

Options: Disabled, Enabled

### Onboard LAN 1 Boot

Options: Disabled, Enabled

### Onboard LAN 2 Controller

Options: Disabled, Enabled

### Onboard LAN 2 Boot

Options: Disabled, Enabled

### Audio Controller

Options: Disabled, Enabled

Table 4 Advanced Menu – Display Configuration

BIOS SETUP UTILITY		
Main	<b>Advanced</b>	Boot Security Server Mgmt Save & Exit
Display Configuration		
Aperture Size	[256 MB]	→ ← Select Screen
DVMT Pre-Allocated	[64M]	↑↓ Select Item
DVMT Total Gfx Mem	[256 M]	Enter: Select
IGFX – Boot Type	[VBIOS Default]	+ - Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4 Save & Exit
		ESC Exit
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**Aperture Size**

Options: 128MB, 256MB, 512MB

**DVMT Pre-Allocated**

Options: 32M, 64M, 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M, 416M, 448M, 480M, 512M, 1024M

**DVMT Total Gfx Mem**

Options: 128M, 256M, MAX

**IGFX – Boot Type**

Options: VBIOS Default, CRT, DVI, HDMI, DP

Table 5 Advanced Menu –Power Management Configuration

BIOS SETUP UTILITY					
Main	<b>Advanced</b>	Boot	Security	Server Mgmt	Save & Exit
Power Management Configuration					
ACPI Sleep State		[S3 (Suspend to RAM)]			
Restore AC Power Loss		[Power Off]			
Resume By PCIE Device		[Disabled]			
Resume By RTC Alarm		[Disabled]			
EUP Power Saving Mode		[Disabled]			
>Watchdog Timer Configuration					
					→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit
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**ACPI Sleep State**

Options: Suspend Disabled, S1 (CPU Stop Clock), S3 (Suspend to RAM)

**Restore AC Power Loss**

Options: Power Off, Power On, Last State

**Resume By PCIE Device**

Options: Disabled, Enabled

**Resume By RTC Alarm**

Options: Disabled, Enabled

**EUP Power Saving Mode**

Options: Disabled, Enabled

**Watchdog Timer Configuration**■ **WDT Function** [Disabled]

Options: Disabled, Enabled

Table 6 Advanced Menu –CPU Advanced Configuration

BIOS SETUP UTILITY					
Main	Advanced	Boot	Security	Save & Exit	
CPU Advanced Configuration					
EIST		[Enabled]		→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit	
Turbo Mode		[Enabled]			
Hyper Threading		[Enabled]			
VT-d		[Enabled]			
Active Processor Cores		[All]			
Limit CPUID Maximum		[Disabled]			
Execute Disable Bit		[Enabled]			
Intel © Virtualization Tech		[Disabled]			
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**EIST**

Options: Disabled, Enabled

**Turbo Mode**

Options: Disabled, Enabled

**Hyper Threading**

Options: Disabled, Enabled

**VT-d**

Options: Disabled, Enabled

**Active Processor Cores**

Options: All, 1, 2, 3

**Limit CPUID Maximum**

Options: Disabled, Enabled

**Execute Disable Bit**

Options: Disabled, Enabled

**Intel © Virtualization Tech**

Options: Disabled, Enabled

Table 7 Advanced Menu –Trusted Computing

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Configuration			→ ← Select Screen	
Security Device Support		[Disable]	↑↓ Select Item	
Current Status Information			Enter: Select	
SUPPORT TURNED OFF			+- Change Opt.	
			F1: General Help	
			F2: Previous Values	
			F3: Optimized Defaults	
			F4 Save & Exit	
			ESC Exit	
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**Security Device Support**

Options: Disabled, Enabled

Table 8 Advanced Menu –SATA Configuration

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
SATA Controller(s)		[Enabled]		→ ← Select Screen
SATA Mode Selection		[ AHCI]		↑↓ Select Item
SATA Controller Speed		[ Gen 3]		Enter: Select
Serial ATA Port 1		Empty		+ - Change Opt.
Software Preserve		Unknown		F1: General Help
Port		[ Enabled ]		F2: Previous Values
SATA Device Type		[ Hard Disk Driver]		F3: Optimized Defaults
SATA Port fo CF		Empty		F4 Save & Exit
Software Preserve		Unknown		ESC Exit
Port		[ Enabled ]		
Hot Plug		[Disabled]		
SATA Port fo ESATA		Empty		
Software Preserve		Unknown		
Port		[ Enabled ]		
External SATA		[Enabled]		
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**SATA Controller(s)**

Options: Disabled, Enabled

**SATA Mode Selection**

Options: IDE, AHCI

**SATA Controller Speed**

Options: Gen 1, Gen 2, Gen 3

**Port**

Options: Disabled, Enabled

**SATA Device Type**

Options: Hard Disk Driver, Solid State Driver

**Hot Plug**

Options: Disabled, Enabled

**External SATA**

Options: Disabled, Enabled

Table 9 Advanced Menu – Intel Rapid Start Technology

BIOS SETUP UTILITY	
Main	<b>Advanced</b>
Intel® Rapid Start Technology	[Disabled]
→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit	
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**Intel® Rapid Start Technology**

Options: Disabled, Enabled

Table 10 Advanced Menu –Intel TXT (LT) Configuration

BIOS SETUP UTILITY	
Main	<b>Advanced</b>
Intel Trusted Execution technology Configuration	
Intel TXT support only can be enabled / disabled if SMX is enabled. VT and VT-d support must also be enabled prior to TXT.	
Secure Mode Extensions (SMX)	[Enabled]
Intel TXT (LT) Support	[Disabled]
→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit	
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Table 11 Advanced Menu –AMT Configuration

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
	Intel AMT	[Enabled]		→ ← Select Screen
	BIOS HotKey Pressed	[Disabled]		↑↓ Select Item
	MEBx Selection Screen	[Disabled]		Enter: Select
	Hide Un-Configure ME Confirmation	[Disabled]		+ - Change Opt.
	MEBx Debug Message Output	[Disabled]		F1: General Help
	Un-Configure ME	[Disabled]		F2: Previous Values
	AMT Wait Timer	0		F3: Optimized Defaults
	Disable ME	[Disabled]		F4 Save & Exit
	ASF	[Enabled]		ESC Exit
	Activate Remote Assistance Process	[Disabled]		
	USB Configure	[Enabled]		
	PET Progress	[Enabled]		
	AMT CIRA Timeout	0		
	Watchdog	[Disabled]		
	OS Timer	0		
	BIOS Timer	0		
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**Intel AMT**

Options: Disabled, Enabled

**BIOS Hotkey Pressed**

Options: Disabled, Enabled

**MEBx Selection Screen**

Options: Disabled, Enabled

**Hide Un-Configure ME Confirmation**

Options: Disabled, Enabled

**MEBx Debug Message Output**

Options: Disabled, Enabled

**Un-Configure ME**

Options: Disabled, Enabled

**AMT Wait Timer**

Options: 0

**Disable ME**

Options: Disabled, Enabled

**ASF**

Options: Disabled, Enabled

**Activate Remote Assistance Process**

Options: Disabled, Enabled

**USB Configure**

Options: Disabled, Enabled

**PET Progress**

Options: Disabled, Enabled

**Watchdog**

Options: Disabled, Enabled

Table 12 Advanced Menu –USB Configuration

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
USB Configuration  USB Devices: 1 Drive, 1 Keyboard, 1 Mouse, 2 Hubs  Legacy USB Support [Enabled] USB 3.0 Support [Enabled] XHCI hand-off [Enabled] EHCI Hand-off [Disabled]  XHCI Pre-Boot Driver [Enabled] XHCI Mode [ Smart Auto]  Mass Storage Devices: San Disk [Auto]				→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit
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**Legacy USB Support**

Options: Disabled, Enabled, Auto

**USB 3.0 Support**

Options: Disabled, Enabled

**XHCI hand-off**

Options: Disabled, Enabled

**EHCI hand-off**

Options: Disabled, Enabled

**XHCI Pre-Boot Driver**

Options: Disabled, Enabled

**XHCI Mode**

Options: ,Auto, Smart Auto, Disabled, Enabled

**San Disk**

Options: Auto, Floppy, Forced FDD, Hard Disk, CD-ROM

Table 13 Advanced Menu – Super IO Configuration

BIOS SETUP UTILITY	
Main	<b>Advanced</b>
Main <b>Advanced</b> Boot    Security    Server Mgmt    Save & Exit	
Super IO Configuration	
>Serial Port 1 Configuration	
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Table 14 Advanced Menu –Super IO Configuration – Serial Port 1 Configuration

BIOS SETUP UTILITY	
Main	<b>Advanced</b>
Main <b>Advanced</b> Boot    Security    Server Mgmt    Save & Exit	
Serial Port 1 Configuration	→ ← Select Screen
Serial Port	↑↓ Select Item
Device Settings	Enter: Select
Change Settings	+ - Change Opt.
Serial Port 1 Type	F1: General Help
COM1 Pin9 Definition	F2: Previous Values
	F3: Optimized Defaults
	F4 Save & Exit
	ESC Exit
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**Serial Port**

Options: Disabled, Enabled

**Change Settings**

Options: Auto,

IO=3F8h; IRQ=4;

IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;

**Serial Port Type**

Options: RS232, RS422, RS485

Table 15 Advanced Menu –H/W Monitor

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
PC Health Status				
CPU Warning Temperature		[Disabled]		→ ← Select Screen
CPU Temperature		: +53 C		↑↓ Select Item
Bottom Side System Temperature		: +33 C		Enter: Select
Top Side System Temperature		: +32 C		+ - Change Opt.
CPU FAN Speed		+2018RPM		F1: General Help
+3.3V		: +3.360 V		F2: Previous Values
+VCORE		: +0.864 V		F3: Optimized Defaults
+1.05V		: +1.056 V		F4 Save & Exit
+1.5V		: +1.546 V		ESC Exit
+5VDUAL		: +5.120 V		
+VIN		: +19.272 V		
+3.3VSB		: +3.376		
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### CPU Warning Temperature

Options: Disabled, 80 C, 85 C, 90 C, 95 C

Table 16 Advanced Menu –Intel® Smart Connect

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
ISCT Configuration		[Disabled]		
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### ISCT Configuration

Options: Disabled, Enabled

## ■ Boot Menu

Table 17 Boot Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Boot Configuration				
Full Screen LOGO Display		[Disabled]	→ ← Select Screen	
Setup Prompt Timeout		1	↑↓ Select Item	
Bootup NumLock State		[On]	Enter: Select	
Boot Option Priorities			+- Change Opt.	
Boot Option #1		[SanDisk]	F1: General Help	
Boot Option#2		[UEFI: SanDisk]	F2: Previous Values	
Hard Drive BBS Priorities			F3: Optimized Defaults	
			F4 Save & Exit	
			ESC Exit	
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### Full Screen LOGO Display

Options: Disabled, Enabled

### Bootup Numlock State

Options: On, Off

### Boot Option #1

Options: San Disk, UEFI: San Disk, Disabled

### Boot Option #2

Options: San Disk, UEFI: San Disk, Disabled

### Hard Drive BBS Priorities

#### ■ Boot Option #1 [San Disk]

Options: San Disk, Disabled

## ■ Security Menu

Table 18 Security Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	<b>Security</b>	Save & Exit
<p>Password Description</p> <p>If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup</p> <p>If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights</p> <p>The password length must be in the following range:</p> <p>Minimum Length      3</p> <p>Maximum length      20</p> <p>Administrator Password</p> <p>User Password</p>		<p>→ ← Select Screen</p> <p>↑↓ Select Item</p> <p>Enter: Select</p> <p>+ - Change Opt.</p> <p>F1: General Help</p> <p>F2: Previous Values</p> <p>F3: Optimized Defaults</p> <p>F4 Save &amp; Exit</p> <p>ESC Exit</p>		
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## ■ Save & Exit Menu

Table 19 Save &amp; Exit Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Discard Changes and Reset			→ ← Select Screen	
Discard Changes and Reset			↑↓ Select Item	
Save Options			Enter: Select	
Save Changes			+- Change Opt.	
Discard Changes			F1: General Help	
Restore Defaults			F2: Previous Values	
			F3: Optimized Defaults	
			F4 Save & Exit	
			ESC Exit	
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### **Save Changes and Exit**

Exit system setup after saving the changes. Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. The CMOS RAM is sustained by an onboard backup battery and stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select [Yes] to save changes and exit.

### **Discard Changes and Exit**

Exit system setup without saving any changes. Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than system date, system time, and password, the BIOS asks for a confirmation before exiting.

### **Discard Changes**

Discards changes done so far to any of the setup values. This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select [Yes] to discard any changes and load the previously saved values.

### **Load Optimal Defaults**

Load Optimal Default values for all the setup values. This option allows you to load optimal default values for each of the parameters on the Setup menus, which will provide the best performance settings for your system. The F9 key can be used for this operation.

### **Load Failsafe Defaults**

Load Optimal Default values for all the setup values. This option allows you to load failsafe default values for each of the parameters on the Setup menus, which will provide the most stable performance settings. The F8 key can be used for this operation.

## Chapter 4

# Driver Installation

If your QDSP-2070 does not come with an operating system pre-installed, you will need to install an operating system and the necessary drivers to operate it. After you have finished assembling your system and connected the appropriate power source, power it up using the power supply and install the desired operating system. You can download the drivers for the QDSP-2070 from the Quanmax website at [www.quanmax.com](http://www.quanmax.com) and install as instructed there. For other operating systems, please contact Quanmax.