UbiQ-100 Series

IoT Gateway with Intel® Bay Trail SoC Processor

User's Guide

Content

Figures

Tables

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 our 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.

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.

The product chassis may be hot when the system is working. Please do not touch the surface before turn off the system power and wait for about 5 minutes until the system cools down.

■ 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.

■ 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. We strongly encourage 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

WARNING

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

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)

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.

■ 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 our customer service immediately.
3. Inspect the product for damage. If there is damage, notify our customer service immediately.

■ Regulatory Compliance Statements

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

FCC Compliance Statement for Class A Devices
The product(s) described in this user's guide has been tested and found to comply with the 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense. 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 are not expressly approved by us which could void the user's authority to operate the equipment.

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.

■ 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 over voltage 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

UbiQ-100 Series is a fanless IoT gateway integrating Intel® BayTrail Atom™ E3815/E3825 / Celeron® N2930 SoC Processor into a small footprint. Combining two GbE LAN ports and two mPCIe slots for wireless expansion, it enables flexible connections between edge devices and data center through the wired or wireless networks.

Checklist
- UbiQ-100 Series
- Power Adapter
- Power Cord
- Driver CD
- Quick installation Guide
- Optional wireless LAN antennas

Features
- Intel® BayTrail SoC Processor
- 2GB/4GB DDR3L memory onboard
- 16GB/32GB eMMC onboard, 1x Micro SD Card Cage for storage
- 1x HDMI for video output
- 2x USB2.0, 1x USB3.0, 2x COM, 1x Audio for peripheral connection
- 2x LAN for wired network connection
- 2x mPCIe for wireless network expansion
- Built-in management software by request
- Fanless design
- Extended temperature model available: -20°C ~ 70°C

■ Product Specifications

Processor	UbiQ-100/T: Intel® Atom™ E3815 (Single Core, 512K Cache, 1.46 GHz) UbiQ-110/T: Intel® Atom™ E3825 (Dual Core, 1M Cache, 1.33 GHz) UbiQ-120: Intel® Celeron® N2930 (Quad Core, 2M Cache, up to 2.16 GHz)
Memory	2GB DDR3L memory onboard (UbiQ-100/T) 4GB DDR3L memory onboard (UbiQ-110/T/120)
Storage	16GB eMMC onboard (UbiQ-100/T) 32GB eMMC onboard (UbiQ-110/T/120) 1x Micro SD Card Cage (on front)
Display Interfaces	1x HDMI (on rear)
Audio Chipset	Realtek ALC662
Audio Interfaces	1x Line-out/Mic-in (on front)
Ethernet	2x LAN (on rear, 1x Intel® I210-AT, 1x Intel® I211-AT)
USB	1x USB3.0 (Type A on front) 2x USB2.0 (Type A on rear)
Serial Port	2x RS-232/422/485 (DB9 on rear)
Expansion	2x mPCIe Socket (full size)
Power Supply	Connector: Lockable DC Jack (on rear) Input Voltage: DC 12V
Firmware	BIOS: AMI uEFI BIOS w/ 64Mb SPI Flash Watchdog: Programmable WDT to generate system reset event H/W Monitor: Voltages, Temperatures Real Time Clock: SoC integrated RTC
Button & Switch	1x Power Button (on front, w/ Power LED) 1x Reset Button (on front)
Status Indicators	1x Power LED (on front, w/ Power Button) 1x HDD LED (on front) 1x Wireless LED (on front) 3x User-defined LED (on front)
Cooling	Fanless
Construction	Aluminum Chassis
Dimension	170 x 89.5 x 39.8 mm / 6.69" x 3.52" x 1.57" (W x D x H)
Weight	0.5 kg / 1.10 lb
Environmental Characteristics	Operating Temperature: 0°C ~ 60°C / 32°F ~ 140°F (Standard) -20°C ~ 70°C / -4°F ~ 158°F (Extended) Storage Temperature: -20°C ~ 80°C / -4°F ~ 176°F Humidity: 0% ~ 90%
Certifications	CE, FCC Class A

Table 1 UbiQ-100 Series Specification

■ System Tour

Refer to the figure below to identify the components of the gateway.

■ Front Panel
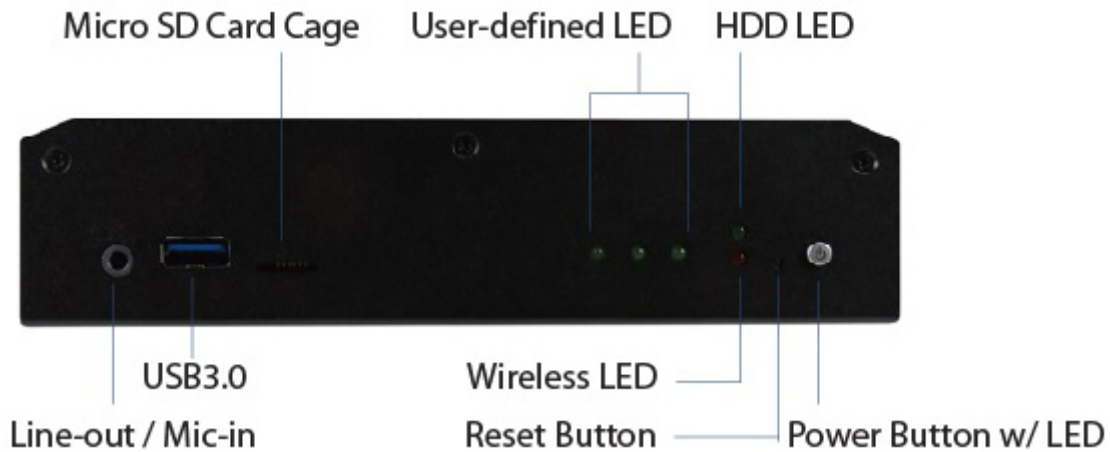
Figure 1 Front Panel

Power Button w/ LED

    The power button allows powering ON and OFF the gateway.

    The Power LED will light when the gateway is on.

Reset Button

    1x reset button for clear CMOS.

HDD LED (Red)

    The hard disk LED blinks when data is being written into or read from the HDD.

WiFi LED (Green)

    The WiFi LED will light when the WiFi is on.

User-defined LED

    The user-defined LED can be configured by the user via SoC GPIO.

Micro SD Card Cage

    The Micro SD Card Cage provides users with expandable memory space suitable for multimedia file retrieval, including images, animations and movie

clips, as well as data logging applications.

Line-out / Mic-in

The headphone / microphone combo jack is designed (1) to connect the system's audio out signal to amplified speakers or headphones and (2) to connect the microphone used for video conferencing, voice narrations, or simple audio recordings.

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 gateway, with some peripheral acting as additional plug-in sites or hubs.

■ Rear Panel
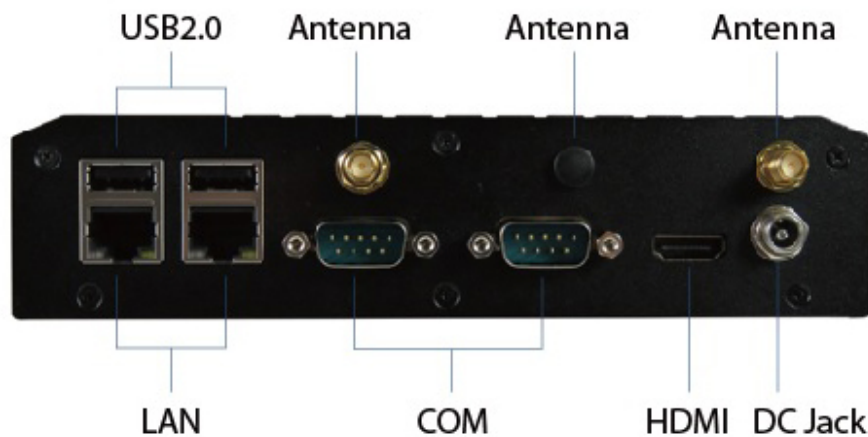
Figure 2 Rear Panel

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.

COM

D-Sub 9 pin connector for RS-232/422/485 connection

Ethernet

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

Antenna

3x reserved holes for wireless antenna connections.

HDMI

HDMI connector for display output

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 gateway, with some peripheral acting as additional plug-in sites or hubs.

Mechanical Dimensions
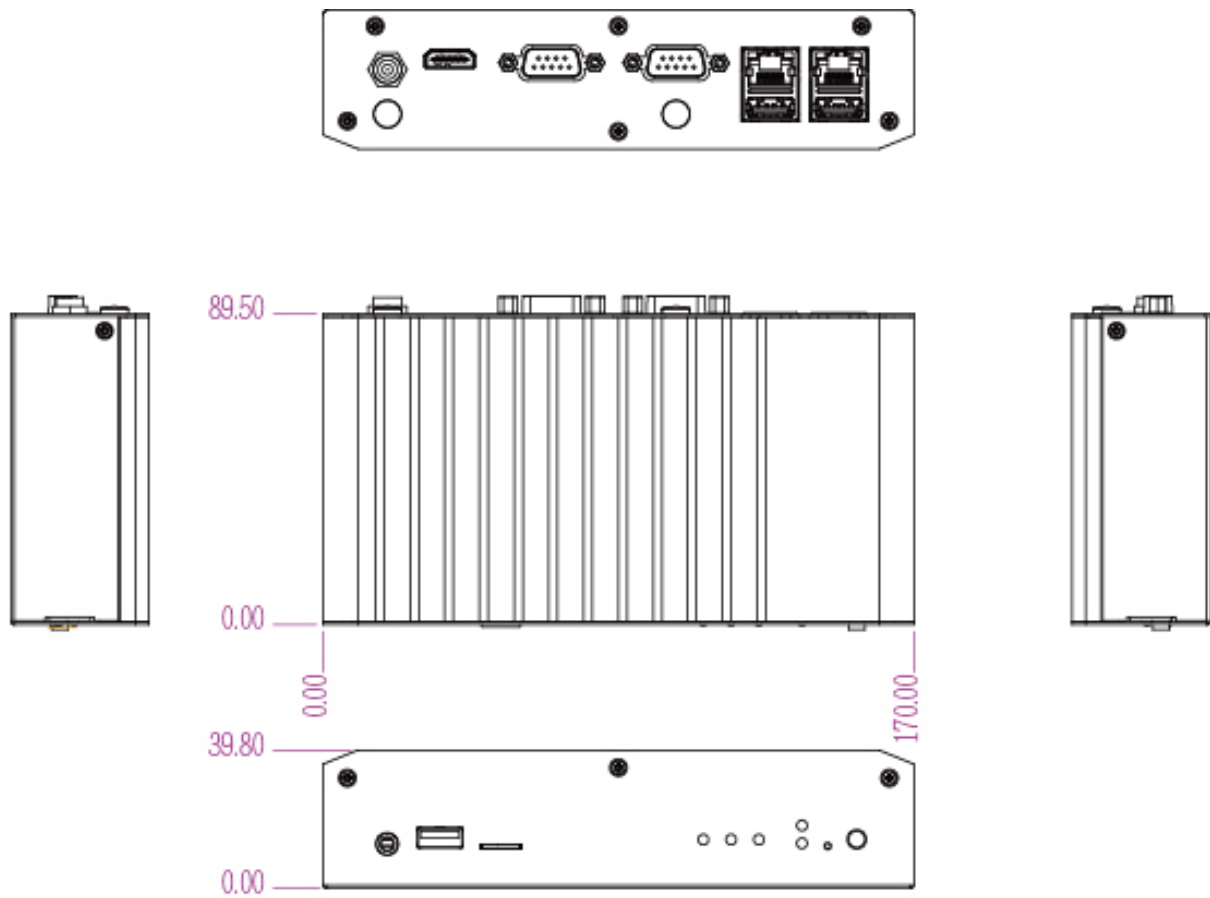
Dimension: 170.0 x 89.5 x 39.8 mm (W x D x H)

Figure 3 Mechanical Dimensions

Chapter 2

Getting Started

■ Setting up your gateway

■ Connect USB mouse & keyboard

Your UbiQ-100 Series does not come with a keyboard and mouse connector, but you can use any USB keyboard or mouse to connect with your gateway.

USB 3.0

USB 2.0
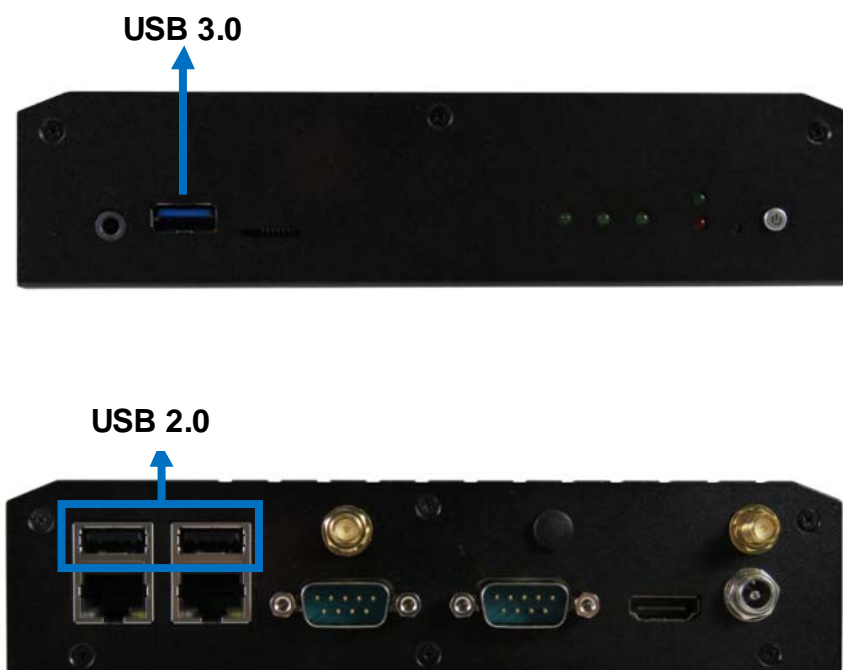
Figure 4 Connect USB mouse & keyboard

NOTE

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

■   **Connect LAN port**

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

RJ45

Figure 5 RJ45 connector

■ **COM Ports**

COM ports with the pin definitions.

COM
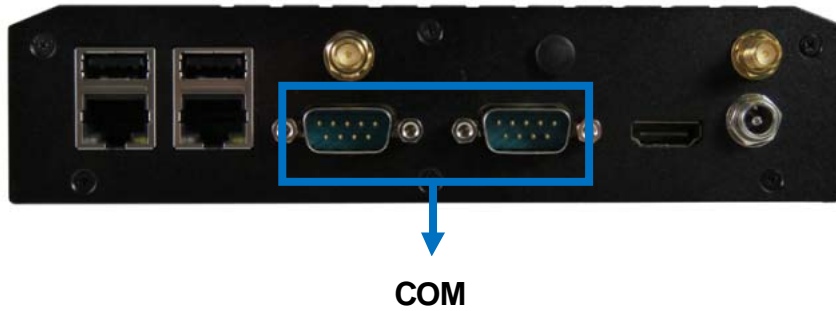
COM1 & COM2 RS-232/422/485 Port D-SUB 9P
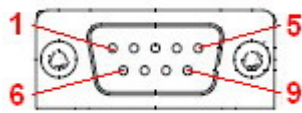
Pin	RS-232	RS-422	Half Duplex RS-485	Full Duplex RS-485
1	DCD	TX-	DATA-	TX-
2	RXD	TX+	DATA+	TX+
3	TXD	RX+	N/A	RX+
4	DTR	RX-	N/A	RX-
5	GND	GND	GND	GND
6	DSR	N/A	N/A	N/A
7	RTS	N/A	N/A	N/A
8	CTS	N/A	N/A	N/A
9	RI	RI	N/A	N/A

Figure 6 COM ports

■ **Turning on the gateway**

1. Connect the power adapter cable to the DC Jack (DC IN) of the UbiQ-100 Series
2. Connect the power cable to the power adapter
3. Connect the power cable to a power outlet
4. Press the power button on the front panel to turn on the gateway

DC Jack

Power Button

Figure 7 Turning on the gateway

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 us

---

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 us

---

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 UbiQ-100 Series BIOS Main Menu

BIOS SETUP UTILITY					
Main	Advanced	Power	Security	Boot	Save & Exit

Product Information		
Product Name	UbiQ-110	
BIOS Version	R0.02 (x64)	
BIOS Build Date	04/14/2016	
TXE FW Version	01.00.02.1067	
CPU Information		
Intel® Atom™ CPU E3825 @ 1.33GHz		
Microcode Revision	905	
Processor Cores	2	→←: Select Screen
		↑↓: Select Item
Memory Information		Enter: Select
Total Size	4096 MB (DDR3L)	+/-: Change Opt.
Frequency	1066 MHz	F1: General Help
		F2: Previous Values
System date	[Mon 04/25/2016]	F3: Optimized Defaults
System time	[04:23:34]	F4: Save & Reset
		ESC: Exit
Access Level	Administrator	

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

■ Advanced Menu

Table 3 Advanced Menu

BIOS SETUP UTILITY					
M a i n	**A d v a n c e d**	P o w e r	S e c u r i t y	B o o t	S a v e & E x i t
Onboard LAN1 Controller		[Enabled]			
Onboard LAN2 Controller		[Enabled]			→←: Select Screen
Audio Controller		[Enabled]			↑↓: Select Item
					Enter: Select
> Display Configuration					+/-: Change Opt.
> Super IO Configuration					F1: General Help
> CPU Chipset Configuration					F2: Previous Values
> SATA Configuration					F3: Optimized Defaults
> USB Configuration					F4: Save & Reset
> TPM Configuration					ESC: Exit
> H/W Monitor					
Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.					

Onboard LAN1 Controller

Options: Disabled, Enabled

Onboard LAN2 Controller

Options: Disabled, Enabled

Audio Controller

Options: Disabled, Enabled

Table 4 Advanced Menu – Display Configuration

BIOS SETUP UTILITY					
Main	**Advanced**	Power	Security	Boot	Save & Exit
Display Configuration				→←: Select Screen	
				↑↓: Select Item	
Primary Display		[Auto]		Enter: Select	
UWA Frame Buffer Size		[256MB]		+/-: Change Opt.	
DVMT Pre-Allocated		[64M]		F1: General Help	
DVMT Total Gfx Mem		[256MB]		F2: Previous Values	
				F3: Optimized Defaults	
Primary IGFX Boot Display		[VBIOS Default]		F4: Save & Reset	
				ESC: Exit	
Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.					

Primary Display

Options: Auto, IGD

UWA Frame Buffer Size

Options: 128MB, 256MB, 512MB

DVMT Pre-Allocated

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

DVMT Total Gfx Mem

Options: 128MB, 256MB, Max

Primary IGFX Boot Display

Options: VBIOS Default, HDMI

Table 5 Advanced Menu – Super IO Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Security	Boot	Save & Exit	

Super IO Chip Parameters.

> Serial Port 1 Configuration
> Serial Port 2 Configuration

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Reset
ESC: Exit

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

Table 6 Advanced Menu – Super IO Configuration – Serial Port 1 Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Security	Boot	Save & Exit	

Serial Port 1 Configuration

Serial Port   [Enabled]
Device Settings   IO=3F8h; IRQ=4;

Change Settings   [Auto]
Serial Port 1 Type   [RS232]
RS485/422 Receiver Termination   [Enabled]
Serial Port 1 Pin9 Definition   [RI]

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Reset
ESC: Exit

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

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 1 Type

Options: RS232, RS422, RS485

RS485/422 Receiver Termination

Options: Disabled, Enabled

Serial Port 1 Pin9 Definition

Options: RI, +5V

Table 7 Advanced Menu – Super IO Configuration – Serial Port 2 Configuration

BIOS SETUP UTILITY					
M a i n	**A d v a n c e d**	P o w e r	S e c u r i t y	B o o t	S a v e & E x i t
Serial Port 2 Configuration				→←: Select Screen	
				↑↓: Select Item	
Serial Port		[Enabled]		Enter: Select	
Device Settings		IO=2F8h; IRQ=3;		+/-: Change Opt.	
				F1: General Help	
Change Settings		[Auto]		F2: Previous Values	
Serial Port 2 Type		[RS232]		F3: Optimized Defaults	
RS485/422 Receiver Termination		[Enabled]		F4: Save & Reset	
Serial Port 2 Pin9 Definition		[RI]		ESC: Exit	
Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.					

Serial Port

Options: Disabled, Enabled

Change Settings

Options: Auto;

IO=2F8h; IRQ=3;

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 2 Type

Options: RS232, RS422, RS485

RS485/422 Receiver Termination

Options: Disabled, Enabled

Serial Port 2 Pin9 Definition

Options: RI, +5V

Table 8 Advanced Menu – CPU Advanced Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Security	Boot	Save & Exit	

CPU Chipset Configuration		→←: Select Screen
		↑↓: Select Item
EIST	[Enabled]	Enter: Select
Limit CPUID Maximum	[Disabled]	+/-: Change Opt.
Execute Disable Bit	[Enabled]	F1: General Help
Intel Virtualization Technology	[Disabled]	F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Reset
		ESC: Exit
Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.		

EIST

Options: Disabled, Enabled

Limit CPUID Maximum

Options: Disabled, Enabled

Execute Disable Bit

Options: Disabled, Enabled

Intel ® Virtualization Tech

Options: Disabled, Enabled

Table 9 Advanced Menu – USB Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Security	Boot	Save & Exit	

USB Configuration		→←: Select Screen
		↑↓: Select Item
USB Devices:		Enter: Select
1 Keyboard, 1 Mouse, 1 Hub		+/-: Change Opt.
		F1: General Help
Legacy USB Support	[Enabled]	F2: Previous Values
XHCI Legacy Support	[Enabled]	F3: Optimized Defaults
XHCI Hand-off	[Enabled]	F4: Save & Reset
EHCI Hand-off	[Disabled]	ESC: Exit
USB Mass Storage Driver Support	[Enabled]	

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

Legacy USB Support

Options: Enabled, Disabled, Auto

XHCI Legacy Support

Options: Enabled, Disabled

XHCI Hand-off

Options: Enabled, Disabled

EHCI Hand-off

Options: Disabled, Enabled

USB Mass Storage Driver Support

Options: Disabled, Enabled

Table 10 Advanced Menu – Network Stack Configuration

BIOS SETUP UTILITY						
Main	**Advanced**	Power	Security	Boot	Save & Exit	

Network Stack	[Disabled]	→←: Select Screen
		↑↓: Select Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Reset
		ESC: Exit

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

Network Stack

Options: Disabled, Enabled

Table 11 Advanced Menu – Serial Port Console Redirection

BIOS SETUP UTILITY					
M a i n	**A d v a n c e d**	P o w e r	S e c u r i t y	B o o t	S a v e & E x i t

COM1	→←: Select Screen
Console Redirection [Disabled]	↑↓: Select Item
> Console Redirection Settings	Enter: Select
	+/-: Change Opt.
COM2	F1: General Help
Console Redirection [Disabled]	F2: Previous Values
> Console Redirection Settings	F3: Optimized Defaults
	F4: Save & Reset
Legacy Console Redirection	ESC: Exit
> Legacy Console Redirection Settings	
Serial Port for Out-of-Band Management/	
Windows Emergency Management Services (EMS)	
Console Redirection [Disabled]	
> Console Redirection Settings	

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

COM1

Console Redirection

Options: Disabled, Enabled

  Console Redirection Settings

    Terminal Type   [ANSI]

    Options: VT100, VT100+, VT-UTF8, ANSI

    Bits per second   [115200]

    Options: 9600, 19200, 38400, 57600, 115200

    Data Bits   [8]

    Options: 7, 8

    Parity   [None]

    Options: None, Even, Odd, Mark, Space

    Stop Bits   [1]

    Options: 1, 2

    Flow Control   [None]

    Options: None, Hardware RTS/CTS

    VT-UTF8 Combo Key Support   [Enabled]

    Options: Disabled, Enabled

    Recorder Mode   [Disabled]

    Options: Disabled, Enabled

    Resolution 100x31   [Disabled]

    Options: Disabled, Enabled

    Legacy OS Redirection Resolution   [80x24]

    Options: 80x24, 80x25

    Putting Keypad   [VT100]

Options: VT-100, LINUX, XTER MR6, SCO, ESCN, VT400

Redirection After BIOS POST   [Always Enabled]

Options: Always Enable, BootLoader

COM2

Console Redirection

Options: Disabled, Enabled

  Console Redirection Settings

    Terminal Type   [ANSI]

    Options: VT100, VT100+, VT-UTF8, ANSI

    Bits per second   [115200]

    Options: 9600, 19200, 38400, 57600, 115200

    Data Bits   [8]

    Options: 7, 8

    Parity   [None]

    Options: None, Even, Odd, Mark, Space

    Stop Bits   [1]

    Options: 1, 2

    Flow Control   [None]

    Options: None, Hardware RTS/CTS

    VT-UTF8 Combo Key Support   [Enabled]

    Options: Disabled, Enabled

    Recorder Mode   [Disabled]

    Options: Disabled, Enabled

    Resolution 100x31   [Disabled]

    Options: Disabled, Enabled

    Legacy OS Redirection Resolution   [80x24]

    Options: 80x24, 80x25

    Putting Keypad   [VT100]

    Options: VT-100, LINUX, XTER MR6, SCO, ESCN, VT400

    Redirection After BIOS POST   [Always Enabled]

    Options: Always Enable, BootLoader

  Legacy Console Redirection

  Legacy Console Redirection Settings

    Legacy Serial Redirection Port   [COM1]

    Options: COM1, COM2

Serial Port for Out-of-Band Management / Windows Emergency Management Services (EMS)

Console Redirection

Options: Disabled, Enabled

 Console Redirection Settings

 Out-of-Band Mgmt Port [COM1]

 Options: COM1, COM2

 Terminal Type [VT-UTF8]

 Options: VT100, VT100+, VT-UTF8, ANSI

 Bits per second [115200]

 Options: 9600, 19200, 57600, 115200

 Flow Control [None]

 Options: None, Hardware RTS/CTS, Software Xon/Xoff

Table 12 Advanced Menu – H/W Monitor

BIOS SETUP UTILITY					
Main	**Advanced**	Power	Security	Boot	Save & Exit

Pc Health Status		→←: Select Screen
		↑↓: Select Item
CPU Warning Temperature	[Disabled]	Enter: Select
		+/-: Change Opt.
CPU Temperature	: +42 C	F1: General Help
System Temperature	: +39 C	F2: Previous Values
		F3: Optimized Defaults
+VCORE	: +0.725 V	F4: Save & Reset
+VIN	: +12.268 V	ESC: Exit
+5V	: +5.066 V	
+VMEM	: +1.349 V	
Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.		

CPU Warning Temperature

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

■ Power Menu

Table 13 Power Configuration

BIOS SETUP UTILITY					
Main	Advanced	**Power**	Security	Boot	Save & Exit

```
Power Management Configuration
ACPI Sleep State              [S3 (Suspend to RAM)]        →←: Select Screen
Restore AC Power Loss         [Power Off]                  ↑↓: Select Item
Power Saving Mode             [Disabled]                   Enter: Select
                                                           +/-: Change Opt.
Resume Event control                                       F1: General Help
Resume By LAN Device          [Enabled]                    F2: Previous Values
Resume By PCI-E Device        [Enabled]                    F3: Optimized Defaults
Resume By Ring Device         [Enabled]                    F4: Save & Reset
Resume By RTC Alarm           [Enabled]                    ESC: Exit
Data(Days)Alarm               0
Time(hh)Alarm                 0
Time(mm)Alarm                 2
Time(ss)Alarm                 0
>WatchDog Timer Configuration
```

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

ACPI Sleep State

Options: Suspend Disabled, S3 (Suspend to RAM)

Restore AC Power Loss

Options: Power Off, Power On, Last State

Power Saving Mode

Options: Disabled, EUP Enabled

Resume By LAN Device

Options: Disabled, Enabled

Resume By PCI-E Device

Options: Disabled, Enabled

Resume By Ring Device

Options: Disabled, Enabled

Resume By RTC Alarm

Options: Disabled, Enabled

WatchDog Timer Configuration

    ■ **WDT Function**   [Disabled]

      Options: Disabled, Enabled

■ Security Menu

Table 14 Security Menu

BIOS SETUP UTILITY					
Main	Advanced	Power	**Security**	Boot	Save & Exit

Password Description

If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup
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
The password length must be in the following range:
Minimum Length   3
Maximum length   20

Administrator Password
User Password

> Secure Boot menu

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Reset
ESC: Exit

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

Secure Boot menu

Secure Boot   [Disabled]

Options: Disabled, Enabled

Secure Boot Mode   [Custom]

Options: Standard, Custom

■ Boot Menu

Table 15 Boot Menu

BIOS SETUP UTILITY					
Main	**Advanced**	**Power**	**Security**	**Boot**	**Save & Exit**

Boot Configuration		→ ←: Select Screen
Full Screen LOGO Display	[Disabled]	↑↓: Select Item
Setup Prompt Timeout	1	Enter: Select
Bootup NumLock State	[On]	+/-: Change Opt.
		F1: General Help
CSM Support	[Enabled]	F2: Previous Values
Boot Option Filter	[UEFI only]	F3: Optimized Defaults
		F4: Save & Reset
Boot Option Priorities		ESC: Exit
Boot Option #1	[Windows Boot Manager]	

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

Full Screen LOGO Display

Options: Disabled, Enabled

Bootup Numlock State

Options: On, Off

CSM Support

Options: Disabled, Enabled

Boot Option Filter

Options: UEFI and Legacy, Legacy only, UEFI only

Boot Option #1

Options: Windows Boot Manager, Disabled

◼ Save & Exit Menu

Table 16 Save & Exit Menu

BIOS SETUP UTILITY					
Main	Advanced	Power	Security	Boot	**Save & Exit**

```
Save Changes and Reset                          →←: Select Screen
Discard Changes and Reset                       ↑↓: Select Item
                                                Enter: Select
Save Options                                    +/-: Change Opt.
Save Changes                                    F1: General Help
Discard Changes                                 F2: Previous Values
                                                F3: Optimized Defaults
Restore Defaults                                F4: Save & Reset
                                                ESC: Exit
```

Version 2.17.1249. Copyright (C) 2016, American Megatrends, Inc.

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 UbiQ-100 Series 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 gateway 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 UbiQ-100 Series from the our website and install as instructed there. For other operating systems, please contact us.