

IMB-M43

ATX Intel[®] Core™ i7/i5/i3 Industrial Motherboard

User's Manual



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Advance Technologies; Automate the World.



Revision History

Revision Release Date		Description of Change(s)
2.00	July 22, 2016	Initial Release

Preface

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Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.



Additional information, aids, and tips that help users perform tasks.



Information to prevent *minor* physical injury, component damage, data loss, and/or program corruption when trying to complete a task.



Information to prevent *serious* physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

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1 Introduction



With specification and BIOS updates, the content of this manual is subject to change without notice. Updated versions, as well as the latest CPU support lists are available at http://www.adlinktech.com For technical support, please visit http://askanexpert.adlinktech.com/AAE/Answers.aspx for model-specific information.

1.1 Features

- ► ATX form factor (305 mm x 244 mm)
- ► 6th Generation Intel® Core™ i7/i5/i3/Pentium/Celeron processors in LGA1151 package support
- Dual-channel DDR4 2133MHz, 4x 288-pin DIMM sockets, up to 64GB non-ECC unbuffered DIMM support
- 1x PCIe x8 Gen3, 4x PCIe x4 Gen3, 2x PCI 2.2 slots (configurable)
- Intel i219-LM Gigabit Ethernet PHY and Intel i211-AT Gigabit Ethernet controller
- 8x USB 3.0 ports/pin headers (6x rear, 2x pin headers), 6x
 USB 2.0 ports (2x vertical type A connector, 4x pin headers)
- ▶ 6x SATA 6 Gb/s ports
- 1x VGA, 2x DisplayPort, supporting up to 3 independent displays
- 6x COM ports/pin headers (2x rear, 4x onboard pin headers), COM1/2 supporting RS232/422/485/RS-485 w/ auto flow control
- ► Watchdog Timer, Hardware Monitor
- 1x 10-pin/2.54mm GPIO pin header: 4 in/4 out, one ground pin and one power pin (5V/12V/no power, jumper selected)
- ▶ 1x 25-pin/2.54mm printer port pin header
- ▶ 1x Mini-DIN for PS/2 keyboard/mouse
- RoHS compliance
- ► SEMA utility (optional, built to order)



1.2 Specifications

Processor& System			
	► Intel® Core™ i7-6700, 3.4GHz, 8M Cache,		
	14nm, 65W IDP, LGA1151 (4C/81)		
	Intel® Core™ i7-6700TE, 2.4GHz 8M Cache,		
	14nm, 35W IDP, LGA1151 (4C/81)		
	Intel® Core™ i5-6500, 3.2GHz, 6M Cache,		
	14nm, 65W TDP, LGA1151 (4C/41)		
	Intel® Core™ i5-65001E, 2.3GHZ, 6M Cache, 14mm, 2514/TDD L CA1151 (4C/4T)		
	141111, 35W TDP, LGATIST (40/41)		
	► Intel® Core ⁺⁺⁺ I3-6100, 3.7 GHZ, 3M Cache, 14pm 51W/TDP L CA1151 (2C/4T)		
CPU	= 141111, 51W TDF, EGATIST (20/41)		
	► Intel® Cole*** IS-61001E, 2.7GHZ, 4W Cache, 14nm, 35W/TDP L GA1151 (2C/4T)		
	► Intel® Pentium® G4400 3 3GHz 3M Cache		
	14nm, 54W TDP, I GA1151 (2C/2T)		
	► Intel® Pentium® G4400TE 2 4GHz 3M Cache		
	14nm, 35W TDP, LGA1151 (2C/2T)		
	▶ Intel® Celeron® G3900, 2.8GHz, 2M Cache.		
	14nm, 65W TDP, LGA1151 (2C/2T)		
	▶ Intel® Celeron® G3900TE, 2.6GHz, 2M Cache,		
	14nm, 35W TDP, LGA1151 (2C/2T)		
Chipset Intel® Q170 Express			
Momony	4x 288-pin DDR4 sockets (vertical)		
Memory	Dual channel DDR4 2133 MHz, up to 64GB		
BIOS	AMI®UEFI BIOS, 128 Mbit SPI flash memory		
Watchdog Timor	24 to 65536 sec.software programmable, can execute		
watchuog Timer	system reset		
	 CPU voltage 		
	► +3.3V voltage		
	► +5V voltage		
Hardware	► +12V voltage		
Monitor	CPU temperature		
	 System temperature 		
	 CPU fan speed 		
	 System fan speed 		

Microsoft® Windows® 8.1 64-bit		
► Microsoft® Windows® 10 64-bit		
 Ubuntu 15.10 32/64-bit 		
I/O		
6x SATA 6.0 Gb/s connectors		
Software RAID support 0/1/5/10		
6x USB 3.0 connector (rear)		
2x USB 3.0 pin header		
4x USB2.0 pin headers		
2x USB2.0 vertical type A connector		
2x RS-232/422/485 with auto flow control conn	ector (rear)	
4x RS-232 pin headers		
 <signal>:</signal> If PEG3 is occupied, PEG1 is PClex8 Ger PEG2 is PClex4 Gen3, and PEG3 is PCle Gen3 If PEG3 is not occupied and PEG2 is occu PEG1 is PClex8 Gen3, PEG2 is PClex8 and PEG3 is no signal If PEG3 is not occupied and PEG2 is not pied, PEG1 is PClex16 Gen3, PEG2 and F no signal PCle1: PCle x4 Gen3, PCle2: PCle x4 Ger PCl1: PCl 2.2, PCl2: PCl 2.2 <physical slot="">:</physical> PEG1 PClex16 slot PCl1 PCl slot PEG3 PClex4 slot PCle2 PClex4 slot PCl2 PCl slot 	n3, ex4 Gen3, occu- PEG3 is en3,	
Parallel Port 1x LPT pin header		
PS2 Combo Port 1x PS/2 keyboard & mouse connector (rear)	1x PS/2 keyboard & mouse connector (rear)	



	1x 10-pin/2.54mm GPIO pin header: 4 in and 4 out, one	
DI/O	ground pin and one power pin (5V/12V/no power, jumper selected)	
Audio		
Audio Codec	Realtek® ALC262-VC2-GR	
Interface	1x Mic-in, 1x Line-out and 1x Line-in connector (rear)	
Graphics		
Graphics Engine	Integrated Intel® HD graphics series (based on CPU)	
VGA	1 VGA connector (rear), resolution up to 1920 x 1200@60Hz	
DisplayPort 1.2	2 DP connector (rear), resolution up to 4096x2304 @ 60Hz	
Ethernet		
Controllor	LAN1: Intel® I219-LM via RJ45 connector (rear)	
Controller	LAN2: Intel®I211-AT via RJ45 connector (rear)	
Intel® AMT	LAN1 Support	
Wake On LAN	LAN1 and LAN2 support	
Mechanical and	Environmental	
Form Factor	ATX	
Dimensions	305 mm x 244 mm (WxL)	
Operating Temperature	0°C to 60°C	
Storage Temperature	-20°C to 80°C	
Relative Humidity	10% to 90, non-condensing	
Certification	CE & FCC Class B	



1.3 Motherboard Topography

Figure 1-1: IMB-M43 Motherboard

Α	FAN2	4-pin system FAN1 connector
в	FAN1	4-pin CPU FAN connector
С	SATA3/4	Upper: SATA3 Lower: SATA4
D	SATA1/2	Upper: SATA1 Lower: SATA2
Е	SATA5/6	Upper: SATA5 Lower: SATA6
F	FAN3	4-pin system FAN2 connector
G	CN23	Digital I/O pin header
н	CN22	GPI/O port power select



I	CN44	System panel header	
J	CN14	USB2.0 header (USB2.0 port 7/8)	
κ	CN50	USB2.0 connector(USB2.0 port 14)	
L	CN49	USB2.0 connector(USB2.0 port 13)	
М	CN15	USB2.0 header (USB2.0 port 9/10)	
Ν	CN16	USB3.0 header (USB3.0 port 7/8, USB2.0 port 5/6)	
0	CN37	Printer port header	
Ρ	COM6	Serial port 6	
Q	COM5	Serial port 5	
R	COM4	Serial port 4	
S	COM3	Serial port 3	
т	PCI2	PCI connector	
U	PCIe2	PCIe x4 connector	
۷	PCIe1	PCIe x4 connector	
W	PEG3	PCIe x4 connector	
Х	PEG2	PCIe x16 connector	
Y	PCI1	PCI connector	
Z	PEG1	PCIe x16 connector	
AA	CN31	Serial port 3 power select	
BB	CN32	Serial port 4 power select	
СС	CN35	Serial port 5 power select	
DD	CN36	Serial port 6 power select	
EE	CN24	Clear CMOS header	

Table	1-1: IMB-M43	Motherboard	Legend
-------	--------------	-------------	--------

1.4 I/O Panel



Figure 1-2: IMB-M43 I/O Panel

Α	VGA	J	USB3.0 (#4) USB2.0(#4)
в	COM1	к	USB3.0 (#1) USB2.0(#1)
С	PS2 Combo	L	USB3.0 (#2) USB2.0(#2)
D	LAN1	м	USB3.0 (#5) USB2.0(#11)
Е	LAN2	N	USB3.0 (#6) USB2.0(#12)
F	Line In	0	COM2
G	Line Out	Ρ	DP2
Н	Mic In		
I	USB3.0 (#3) USB2.0(#3)	Q	DP1

Table	1-2:	IMB-M43	I/O	Legend
-------	------	---------	-----	--------

The IMB-M43 supports RS232/422/485 on COM ports 1 and 2, with pin definitions as follows, with both COM ports configurable in BIOS setup.

Pin	RS232	RS422	RS485
1	DCD, Data Carrier Detect	TX-	Data-
2	RXD, Receive Data	TX+	Data+
3	TXD, Transmit Data	RX+	N/A



Pin	RS232	RS422	RS485
4	DTR, Data Terminal Ready	RX-	N/A
5	GND	GND	GND
6	DSR, Data Set Ready	N/A	N/A
7	RTS, Request To Send	N/A	N/A
8	CTS, Clear To Send	N/A	N/A
9	RI, Ring Pin	N/A	N/A

Table 1-3: COM Port Pin Definitions

Two LEDs on either side of the RJ-45 LAN port indicate activity and speed as follows.



Figure 1-3: LAN Port LED Indicators

ACT/LINK		
Off	No Link	
Blinking	Transmission Underway	
Lit	Link	

SPEED		
Off	10 Mb/s	
Green	100 Mb/s	
Orange	1 Gb/s	

Table 1-4: LAN Port LED Legend

1.5 Onboard Headers and Connectors



Placing jumper covers over headers and connectors may cause permanent damage.

1.5.1 CN46 24-pin ATX Power Input Connector

	Pin	Name
	1	P_+3V3_PSU
	2	P_+3V3_PSU
	3	GND
	4	P_+5V_PSU
	5	GND
	6	P_+5V_PSU
	7	GND
	8	PSU_PWROK
	9	P_+5VSB_PSU
	10	P_+12V_PSU_CN
	11	P_+12V_PSU_CN
	12	P_+3V3_PSU
	13	P_+3V3_PSU
	14	P_N12V_PSU
	15	GND
	16	PS_ON-L
	17	GND
	18	GND
	19	GND
1 13	20	PS_TP1 (Test pad)
	21	P_+5V_PSU
	22	P_+5V_PSU
	23	P_+5V_PSU
	24	GND



1.5.2 CN44 System Panel Header



Pin	Name
1	CN_HDLED+
2	CN_PLED+
3	CN_HDLED-
4	CN_PLED-
5	GND
6	CN_PWRBTN-L
7	CN_RESETBTN-L
8	GND
9	NC
10	NC

1.5.3 COM3 Serial Port Header



Pin	Name
1	CN_COM-C_DCD-L

Pin	Name
2	CN_COM-C_DSR-L
3	CN_COM-C_RX
4	CN_COM-C_RTS-L
5	CN_COM-C_TX
6	CN_COM-C_CTS-L
7	CN_COM-C_DTR-L
8	CN_COM-C_POWER
9	GND
10	NC

1.5.4 COM4 Serial Port Header



Pin	Name
1	CN_COM-D_DCD-L
2	CN_COM-D_DSR-L
3	CN_COM-D_RX
4	CN_COM-D_RTS-L
5	CN_COM-D_TX
6	CN_COM-D_CTS-L
7	CN_COM-D_DTR-L
8	CN_COM-D_POWER
9	GND
10	NC



1.5.5 COM5 Serial Port Header



Pin	Name
1	CN_COM-E_DCD-L
2	CN_COM-E_DSR-L
3	CN_COM-E_RX
4	CN_COM-E_RTS-L
5	CN_COM-E_TX
6	CN_COM-E_CTS-L
7	CN_COM-E_DTR-L
8	CN_COM-E_POWER
9	GND
10	NC

1.5.6 COM6 Serial Port Header



Pin	Name	
1	CN_COM-F_DCD-L	

Pin	Name
2	CN_COM-F_DSR-L
3	CN_COM-F_RX
4	CN_COM-F_RTS-L
5	CN_COM-F_TX
6	CN_COM-F_CTS-L
7	CN_COM-F_DTR-L
8	CN_COM-F_POWER
9	GND
10	NC

1.5.7 CN16 USB3.0 Header



Pin	Name	
1	P_+5V_USB_VBUS_P9	
2	CN_U3_USB3_RXN_7	
3	CN_U3_USB3_RXP_7	
4	GND	



Pin	Name
5	CN_U3_USB3_TXN_7
6	CN_U3_USB3_TXP_7
7	GND
8	CN_U2_USB2N_5
9	CN_U2_USB2P_5
10	NC
11	CN_U2_USB2P_6
12	CN_U2_USB2N_6
13	GND
14	CN_U3_USB3_TXP_8
15	CN_U3_USB3_TXN_8
16	GND
17	CN_U3_USB3_RXP_8
18	CN_U3_USB3_RXN_8
19	P_+5V_USB_VBUS_P10
20	NC

1.5.8 CN14 USB2.0 Header



Pin	Name	
1	P_+5V_USB_VBUS_P6	
2	P_+5V_USB_VBUS_P5	
3	CN_U2_USB2N_7	
4	CN_U2_USB2N_8	
5	CN_U2_USB2P_7	

Pin	Name	
6	CN_U2_USB2P_8	
7	GND	
8	GND	
9	Х	
10	NC	

1.5.9 CN15 USB2.0 Header



Pin	Name	
1	P_+5V_USB_VBUS_P7	
2	P_+5V_USB_VBUS_P8	
3	CN_U2_USB2N_9	
4	CN_U2_USB2N_10	
5	CN_U2_USB2P_9	
6	CN_U2_USB2P_10	
7	GND	
8	GND	
9	Х	
10	NC	

1.5.10 CN38 Front Audio Header





Pin	Name
1	A_MIC2_IN_L
2	GND_AUD
3	A_MIC2_IN_R
4	CN_FP_PRES-L
5	A_L_OUT2_R
6	CN_SRTN1
7	A_HP2_JD
8	NC
9	A_L_OUT2_L
10	CN_SRTN2

1.5.11 FAN1 4-Pin CPU FAN Connector



Pin	Name	Note
1	GND	GND
2	P_+12V_PSU	FAN-Power
3	O_CPUFAN_IN/ BMC_FAN_IN_CPU	FAN-TACHO
4	O_CPUFAN_OUT/ BMC_FAN_OUT_CPU	FAN-PWM IN

1.5.12 FAN2 4-Pin System FAN1 Connector



Pin	Name	Note
1	GND	GND
2	P_+12V_PSU	FAN-Power
3	O_SYSFAN_IN0/ BMC_FAN_IN	FAN-TACHO
4	O_SYSFAN_OUT0/ BMC_FAN_OUT	FAN-PWM IN



1.5.13 FAN3 4-Pin System FAN2 Connector



Pin	Name	Note
1	GND	GND
2	P_+12V_PSU	FAN-Power
3	O_SYSFAN_IN1/ BMC_FAN_IN1	FAN-TACHO
4	O_SYSFAN_OUT1/ BMC_FAN_OUT1	FAN-PWM IN

1.5.14 CN54 LAN1 LED Indicator



LAN1 Link with Activity LED Header	
1	P_+3V3_LAN_A
2	L_i219_LED0_LINK/ACT-L

1.5.15 CN53 LAN2 LED Indicator



LAN1 Link with Activity LED Header	
1	P_+3V3_LAN_A
2	L_i210_LED1_LINK/ACT-L

1.5.16 PS2 Combo Connector



Pin	Name	Note
1	O_KBDATA	
2	O_MSDATA	
3	GND	



Pin	Name	Note
4	P_+PS2	Power source from P_+5V_DUAL
5	O_KBCLK	
6	O_MSCLK	

1.5.17 CN37 LPT Connector



Pin	Name
1	O_STB-L_CON
2	O_AFD-L_CON
3	O_PD0_CON
4	O_ERR-L_CON
5	O_PD1_CON
6	O_INIT-L_CON
7	O_PD2_CON
8	O_SLIN-L_CON
9	O_PD3_CON
10	GND
11	O_PD4_CON
12	GND
13	O_PD5_CON
14	GND
15	O_PD6_CON
16	GND
17	O_PD7_CON
18	GND
19	O_ACK-L_CON
20	GND

Pin	Name
21	O_BUSY_CON
22	GND
23	O_PE_CON
24	GND
25	O_SLCT_CON
26	NC



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2 Getting Started

2.1 Package Contents

Before unpacking, check the shipping carton for any damage. If the shipping carton and/or contents are damaged, inform your dealer immediately. Retain the shipping carton and packing materials for inspection. Obtain authorization from the dealer before returning any product to ADLINK.

- ▶ IMB-M43 ATX industrial motherboard
- I/O shield



- The IMB-M43 must be protected from static discharge and physical shock. Never remove any of the socketed parts except at a static-free workstation.
- Ensure the power supply is disconnected before installing or removing the motherboard to avoid physical injury and device damage
- To avoid damage from static electricity, never place the motherboard directly on carpet or similar surfaces
- Wear a grounded wrist strap when handling components
- Hold components by the edges and do not touch ICs
- Place uninstalled components on a grounded antistatic pad or the antistatic bag shipped with the component



2.2 Mounting the motherboard

Mount the motherboard to the chassis with screws through the provided screw holes.



Avoid over-tightening screws to prevent PCB damage.

2.3 Installing Memory Modules (DIMM)

The IMB-M43 provides four 288-pin DDR4 DIMM slots supporting Dual Channel Memory technology.

NOTE:	•	Dual channel configuration requires installation of DDR4 DIMM pairs of identical brand, speed, size, and chip type. Dual Channel Memory technology is disabled when only one memory module is installed.
CAUTION:	•	DDR, DDR2 or DDR3 memory modules cannot be installed in a DDR4 slot; motherboard and DIMM damage may result. Permanent damage to the motherboard and DIMM will result if the DIMM is forced into the slot in an incorrect orientation.

Install DRAM before installing add-on cards.

Remove add-on cards before removing any DRAM.

To install a memory module:

1. Locate the DIMM slots on the motherboard.
2. Press the slot's retaining clips outward to unlock.



3. Align the memory module on the socket, making sure that the module notch matches the slot rail.



4. Insert the module firmly into the slot until the retaining clips snap back inwards and the module is securely seated.





2.4 Installing Expansion Cards (PCI and PCI Express)

The IMB-M43 provides:

- 2x PCI slots receiving expansion cards with 32-bit PCI interface.
- ► If PEG3 is occupied, PEG1 is PCIex8 Gen3, PEG2 is PCIex4 Gen3, and PEG3 is PCIex4 Gen3.
- If PEG3 is not occupied and PEG2 is occupied, PEG1 is PClex8 Gen3, PEG2 is PClex8 Gen3, and PEG3 is no signal.
- If PEG3 is not occupied and PEG2 is not occupied, PEG1 is PClex16 Gen3, PEG2 and PEG3 is no signal.
- ▶ PCIe1: PCIe x4 Gen3
- ▶ PCIe2: PCIe x4 Gen3

Before installing expansion cards, ensure the power supply is switched off or disconnected. Check the card's documentation and perform requisite system configurations before installation.

- 1. Remove the system unit cover (if the motherboard is installed in a chassis).
- 2. Remove the bracket facing the destination slot.
- 3. Align the card connector with the slot and press firmly until the card is securely seated.
- 4. Fix the card to the chassis with screws.
- 5. Replace the system cover.

2.5 Jumper Settings



* denotes default setting



CN24

Clear CMOS		
*1-2	Normal	
2-3	Clear CMOS	



CN25

Clear ME	
*1-2	Normal
2-3	Clear ME

CN22

GPIO Port Power Select		
*N/A	No Power	
1-2	P_+5V_PSU	
2-3	P_+12V_PSU	

CN31

Serial Port 3 Power Select		
*N/A	No Power	
1-2	P_+5V_PSU	
2-3	P_+12V_PSU	

CN32

Serial Port 4 Power Select		
*N/A	No Power	
1-2	P_+5V_PSU	
2-3	P_+12V_PSU	

CN35

Serial Port 5 Power Select		
*N/A	No Power	
1-2	P_+5V_PSU	
2-3	P_+12V_PSU	

CN36

Serial Port 6 Power Select		
*N/A	No Power	
1-2	P_+5V_PSU	
2-3	P_+12V_PSU	

2.6 Driver Installation

Download the requisite drivers for your system from http://www.adlinktech.com and install.



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Appendix A - UEFI Setup Utility

A.1 Introduction

This section explains how to use the UEFI Setup Utility to configure your system. The UEFI chip on the motherboard stores the UEFI Setup Utility. Select during the Power-On-Self-Test (POST) to enter the UEFI Setup Utility, otherwise, POST will continue with its test routines.

To enter the UEFI Setup Utility after POST, restart the system by pressing $\langle Ctl \rangle + \langle Alt \rangle + \langle Delete \rangle$, or by pressing the reset button on the system chassis.



Because the UEFI software is frequently updated, the setup screens and descriptions provided are for reference only, and may not conform exactly with those displayed.

A.2 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

Main	Configures system time/date information	
Advanced	Sets up advanced UEFI features	
H/W Monitor	Displays current hardware status	
Boot	Sets default system device to locate and load OS	
Security	Sets up security features	
Exit	Exits the current screen or UEFI Setup Utility	

Use arrow keys to choose among the selections on the menu bar, and select Enter to access the sub screen. The mouse can also be used to select items



A.3 Navigation Keys

Key(s)	Function
R/L Arrow	Moves cursor left or right to select Menus
U/D Arrow	Moves cursor up or down to select items
+/-	Changes option for the selected item
Enter	Opens the selected Menu
F1	Displays General Help
F2	Previous values
F3	Optimized default values for all settings
F4	Saves changes and exits Setup
ESC	Opens the Exit Menu or exits the current screen

Table A-1: Navigation Key Functions

A.4 Main Menu

When UEFI Setup is started, the Main menu appears, displaying system overview.

IOS Information		A Choose the system default
IOS Vendor	American Megatrends	language
ore Version	5.11	21 TH SHITS
ompliancy	UEFI 2.4: PI 1.3	
roject Version	IMB-M43 1.11.10	
uild Date and Time	12/15/2015 18:15:30	
ccess Level	Administrator	
rocessor Information		
lane	SkyLake DT	
rand String	Intel(R) Core(TM)	
	15-6500TE CPU @ 2.30GHz	
requency	2300 MHz	
rocessor ID	506E3	++: Select Screen
tepping	R0/S0/N0	14: Select Item
lumber of Processors	4Core(s) / 4Thread(s)	Enter: Select
licrocode Revision	49	+/-: Change Opt.
T Info	GT2 (1000 MHz)	F1: General Help
GFX VBIDS Version	1030	F2: Previous Values
emory RC Version	1.7.0.0	F4: Save & Exit
otal Memory	4096 MB	ESC: Exit
lemony Frequency	2133 MHz	
CH Information		Ŧ

A.5 Advanced Menu

Aptio Setup Utility – Copyright (C) 201 Main <mark>Advanced</mark> Security Boot Save & Exit	5 American Megatrends, Inc.
 ACPI Settings CPU Configuration Memory Configuration System Agent (SA) Configuration Graphics Configuration PCI Express Configuration HDS Configuration HD Audio Configuration SATA Configuration Advanced Power Management AMT Configuration Intel(R) Bios Guard Technology Network Stack Configuration KCTS105D HW Monitor Miscellaneous Configuration 	System ACPI Parameters. ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1255. Copyright (C) 2015	American Megatrends, Inc.



A.5.1 ACPI Settings

Aptio Setup Uti Advanced	lity – Copyright (C) 2015 America	an Megatrends, Inc.
ACPI Settings		Enables or Disables System
Enable Hibernation	[Enabled] [S3 (Suspend to RAM)]	Sleep State). This option may be not effective with some OS
	too (ogopona (o mmy)	
		++: Select Screen
		I+: Select Item Enter: Select
		F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit
		ESC: Exit
Version 2.17.1	255. Copyright (C) 2015 American	Megatrends, Inc.

Enable Hibernation

Enables or Disables System ability to hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

ACPI Sleep State

Selects the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

A.5.2 CPU Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2015 Americar	n Megatrends, Inc.
CPU Configuration		Enabled for Windows XP and Linux (OS optimized for
Intel(R) Core(TM) i7-6700TE CPU @	2.40GHz	Huper-Threading Technology)
CPU Signature	506E3	and Disabled for other OS (OS
Microcode Patch	49	not optimized for
Max CPU Speed	2400 MHz	Hyper-Threading Technology).
Min CPU Speed	800 MHz	When Disabled only one thread
CPU Speed	2400 MHz	per enabled core is enabled.
Processor Cores	4	
Hyper Threading Technology	Supported	
Intel VT–x Technology	Supported	
Intel SMX Technology	Supported	
64-bit	Supported	· · · · · · · · · · · · · · · · · · ·
EIST Technology	Supported	↔: Select Screen
CPU C3 state	Supported	↑↓: Select Item
CPU C6 state	Supported	Enter: Select
CPU C7 state	Supported	+/-: Change Opt.
		F1: General Help
L1 Data Cache	32 kB x 4	F2: Previous Values
L1 Code Cache	32 KB X 4	F3: Optimized Defaults
L2 Cache	256 kB x 4	F4: Save & Exit
L3 Cache	8 MB	ESC: Exit
L4 Cache	Not Present	
	[Enabled]	7
Version 2.17.1255.	Copyright (C) 2015 American ⊧	legatrends, Inc.



Aptio Setup Utility - Advanced	Copyright (C)	2015 American	Megatrends, Inc.
EIST Technology CPU C3 state CPU C6 state CPU C7 state	Supported Supported Supported Supported	•	Enables or Disables Intel(R) TXT(LT) support.
L1 Data Cache L1 Code Cache L2 Cache L3 Cache L4 Cache L4 Cache	32 kB x 4 32 kB x 4 256 kB x 4 8 MB Not Present		
Hyper-threading Active Processor Cores Intel Virtualization Technology CPU AES Intel(R) Speed Shift Technology Intel(R) SpeedStep(tm) Turbo Mode CPU C states CState Pre-Hake Package C State limit CPU DTS TCC Activation Offset ACPI 3.0 T-States Intel TXT(LT) Support	[Enabled] [A11] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [AUTO] [Disabled] O [Disabled] [Disabled]	Ţ	<pre>++: Select Screen tl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Vancian 9 47 49EE - C	opupiabt (C) 90	4E Amonicon M	odotnondo. Tro

Hyper-threading

Enabled for Windows XP and Linux optimized for HT-technology and Disabled for other OS not optimized for HT Technology. When Disabled only one thread per enabled core is enabled.

Active Processor Cores

Number of cores to enable in each processor package.

Intel Virtualization Technology

When enabled, utilizes the additional hardware capabilities provided by Vanderpool Technology

CPU AES

Enables/disables CPU Advanced Encryption Standard instructions

Intel Speed Shift Technology

Enables/disables Intel® Speed Shift Technology support. Enabling will expose the CPPC v2 interface to allow for hardware controlled P-states.

Intel® SpeedStep^(tm)

Allows more than two frequency ranges to be supported.

Turbo Mode

Turbo Mode.

CPU C states

Enables/disables CPU C states

CState Pre-Wake

Disable - Sets bit 30 of POWER_CTL MSR (0x1FC) to 1 to disable the Cstate Pre-Wake

Package C State limit

Options: C0/C1, C2, C3, C6, C7, C7s, C8, AUTO

CPU DTS

Disabled: ACPI thermal management uses EC reported temperature values.

Enabled: ACPI thermal management uses DTS SMM mechanism to obtain CPU temperature values.

Out of Spec: ACPI Thermal Management uses EC reported temperature values and DTS SMM is used to handle Out of Spec condition.

TCC Activation Offset

Offset from the factory TCC activation temperature



ACPI 3.0 T-States

Enables/disables ACPI 3.0 T-States.

Intel TXT(LT) Support

Disables Intel® TXT(LT) support.

A.5.3 Chipset Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2015 American	Megatrends, Inc.
Memory Configuration		Enable/Disable Memory Remap
Memory Frequency Total Memory VDD DIMM A1 DIMM A2 DIMM B1 DIMM B2 Memory Timings (tCL-tRCD-tRP-tRAS) Memory Remap	2133 MHz 8192 MB 1200 mVolts Not Present 8192 MB Not Present 15-15-15-36 [Enabled]	auuve Hab
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.17.1255. Co	ppyright (C) 2015 American M	egatrends, Inc.

Memory Remap

Enables/disables Memory Remap above 4GB.

A.5.4 System Agent (SA) Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2015 American	Megatrends, Inc.
System Agent (SA) Configuration		VT-d capability
System Agent Bridge Name SA PCIE Code Version VT-d	Skylake 1.7.0.0 Supported	
VT-d Above 4GB MMIO BIOS assignment	[Enabled] [Disabled]	
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.17.1255. Co	nuright (C) 2015 American Me	egatrends. Inc.

VT-d

VT-d capability

Above 4GB MMIO BIOS assignment

Enables/disables above 4GB MemoryMapped IO BIOS assignment. This is disabled automatically when Aperture Size is set to 2048MB.



A.5.5 Graphics Configuration

Graphics Configuration Select which of IGFX/PEG/PCI Primary Display [Auto] Internal Graphics [Auto] GTT Size [AHB] Aperture Size [256MB] DVMT Pre-Allocated [32M] DVMT Total Gfx Mem [256M] ++: Select Screen T4: Select Item Entr: Select F: General Help F2: Previous Values F3: Optimized Defaults F4: Sole & Exit ESC: Exit	Aptio Setup Utility - Advanced	Copyright (C) 2015 America	an Megatrends, Inc.
++: Select Screen T4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	Graphics Configuration Primary Display Internal Graphics GTT Size Agenture Size DVMT Pre-Allocated DVMT Total Gfx Mem	[Auto] [Auto] [EMB] [256HB] [32M] [256M]	Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.
			<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

Primary Display

Selects which IGFX/PEG/PCI Graphics device should be Primary Display Or selects SG for Switchable Gfx.

Internal Graphics

Keep IGFX enabled based on the setup options.

GTT Size

Selects the GTT Size

Aperture Size

Selects the Aperture Size



Above 4GB MMIO BIOS assignment is automatically enabled when selecting 2048MB aperture. To use this feature, please disable CSM Support.

DVMT Pre-Allocated

Selects DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

DVMT Total Gfx Mem

Selects DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.

A.5.6 PCI Express Configuration





PEG Port Configuration

PEG Port Options

Aptio Setup Utility - Advanced	Copyright (C) 2015 American	Megatrends, Inc.
PEG Port Configuration		Configure PEG1 Max Speed
PEG1 Max Link Speed	Not Present [Auto]	
PEG2 Max Link Speed	Not Present [Auto]	
PEG3 Max Link Speed	Not Present [Auto]	
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.17.1255. Co	poyright (C) 2015 American M	egatrends. Inc.

Max Link Speed

Configure PEG1 Max Speed Option: Auto, Gen1, Gen2, Gen3

Max Link Speed

Configure PEG2 Max Speed Option: Auto, Gen1, Gen2, Gen3

Max Link Speed

Configure PEG3 Max Speed Option: Auto, Gen1, Gen2, Gen3

Aptio Setup Utility - (Advanced	Copyright (C) 2015 American	Megatrends, Inc.
PCIE1		Select PCI Express port speed.
PCIe Speed Detect Non-Compliance Device	[Auto] [Disabled]	++: Select Screen 11: Select Item Enter: Select
		File : Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1255. Co	pyright (C) 2015 American M	egatrends, Inc.

PCIE1

PCIe Speed

Selects PCI Express port speed.

Options: Auto, Gen1, Gen2, Gen3

Detect Non-Compliance Device

Options: Disabled/Enabled

Detects Non-Compliance PCI Express Device. If enabled, increases POST time.



Aptio Setup Utility - Advanced	Copyright (C) 2015 American	Megatrends, Inc.
PCIE2		Select PCI Express port speed.
PCIE2 PCIE Speed Detect Non-Compliance Device	[Auto] [Disabled]	++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1255. Cc	pyright (C) 2015 American M	egatrends, Inc.

PCIE2

PCIe Speed

Selects PCI Express port speed.

Options: Auto, Gen1, Gen2, Gen3

Detect Non-Compliance Device

Options: Disabled/Enabled

Detects Non-Compliance PCI Express Device. If enabled, increases POST time.

A.5.7 USB Configuration

USB Configuration A USB Precondition [Disabled] USB Precondition [Disabled] USB Port 1 [Enabled] USB Port 2 [Enabled] USB Port 3 [Enabled] USB Port 4 [Enabled] USB Port 5 [Enabled] USB3 Port 6 [Enabled] USB3 Port 7 [Enabled] USB3 Port 8 [Enabled] USB3 Port 1 [Enabled] USB3 Port 3 [Enabled] USB2 Port 1 [Enabled] USB2 Port 3 [Enabled] USB2 Port 4 [Enabled] USB2 Port 5 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 7 [Enabled] USB2 Port 8 [Enabled] USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled]	A Advanced	ptio Setup Utility – Copyright (C)	2015 American Megatrends, Inc.
USB Precondition [Disabled] controller and root ports faster enumeration. USB3 Port 1 [Enabled] USB3 Port 2 [Enabled] USB3 Port 3 [Enabled] USB3 Port 4 [Enabled] USB3 Port 5 [Enabled] USB3 Port 6 [Enabled] USB3 Port 7 [Enabled] USB2 Port 1 [Enabled] USB2 Port 2 [Enabled] USB2 Port 3 [Enabled] USB2 Port 3 [Enabled] USB2 Port 4 [Enabled] USB2 Port 5 [Enabled] USB2 Port 5 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 7 [Enabled] USB2 Port 7 [Enabled] USB2 Port 7 [Enabled] USB2 Port 1 [Enabled] USB2 Port 1 [Enabled] USB2 Port 1 [Enabled] USB2 Port 1 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] [Enabled] USB2 Port 12 [Enabled] [Enabled	USB Configurati	on	Precondition work on USB host
USB3 Port 1 [Enabled] USB3 Port 2 [Enabled] USB3 Port 3 [Enabled] USB3 Port 4 [Enabled] USB3 Port 5 [Enabled] USB3 Port 5 [Enabled] USB3 Port 7 [Enabled] USB3 Port 8 [Enabled] USB2 Port 1 [Enabled] USB2 Port 2 [Enabled] USB2 Port 3 [Enabled] USB2 Port 4 [Enabled] USB2 Port 4 [Enabled] USB2 Port 5 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 10 [Enabled] USB2 Port 12 [Enabled] USB2	USB Preconditio		controller and root ports for faster enumeration.
USB3 Port 2[Enabled]USB3 Port 3[Enabled]USB3 Port 4[Enabled]USB3 Port 5[Enabled]USB3 Port 6[Enabled]USB3 Port 7[Enabled]USB3 Port 8[Enabled]USB2 Port 1[Enabled]USB2 Port 3[Enabled]USB2 Port 4[Enabled]USB2 Port 5[Enabled]USB2 Port 6[Enabled]USB2 Port 7[Enabled]USB2 Port 6[Enabled]USB2 Port 7[Enabled]USB2 Port 7[Enabled]USB2 Port 7[Enabled]USB2 Port 7[Enabled]USB2 Port 8[Enabled]USB2 Port 9[Enabled]USB2 Port 10[Enabled]USB2 Port 11[Enabled]USB2 Port 12[Enabled]	USB3 Port 1	[Enabled]	
USB3 Port 3 [Enabled] USB3 Port 4 [Enabled] USB3 Port 5 [Enabled] USB3 Port 6 [Enabled] USB3 Port 6 [Enabled] USB3 Port 7 [Enabled] USB2 Port 1 [Enabled] USB2 Port 2 [Enabled] USB2 Port 3 [Enabled] USB2 Port 4 [Enabled] USB2 Port 4 [Enabled] USB2 Port 5 [Enabled] USB2 Port 6 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 7 [Enabled] USB2 Port 8 [Enabled] USB2 Port 9 [Enabled] USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled]	USB3 Port 2	[Enabled]	
USB3 Port 4 [Enabled] USB3 Port 5 [Enabled] USB3 Port 6 [Enabled] USB3 Port 6 [Enabled] USB3 Port 7 [Enabled] USB3 Port 8 [Enabled] USB2 Port 1 [Enabled] USB2 Port 2 [Enabled] USB2 Port 3 [Enabled] USB2 Port 3 [Enabled] USB2 Port 4 [Enabled] USB2 Port 4 [Enabled] USB2 Port 5 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 7 [Enabled] USB2 Port 8 [Enabled] USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enab	USB3 Port 3	[Enabled]	
USB3 Port 5 [Enabled] USB3 Port 6 [Enabled] USB3 Port 7 [Enabled] USB3 Port 8 [Enabled] USB2 Port 1 [Enabled] USB2 Port 2 [Enabled] USB2 Port 3 [Enabled] USB2 Port 3 [Enabled] USB2 Port 4 [Enabled] USB2 Port 5 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 7 [Enabled] USB2 Port 8 [Enabled] USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled]	USB3 Port 4	[Enabled]	
USB3 Port 6 [Enabled] USB3 Port 7 [Enabled] USB3 Port 8 [Enabled] USB2 Port 1 [Enabled] USB2 Port 1 [Enabled] USB2 Port 2 [Enabled] USB2 Port 3 [Enabled] USB2 Port 3 [Enabled] USB2 Port 4 [Enabled] USB2 Port 4 [Enabled] USB2 Port 5 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 7 [Enabled] USB2 Port 8 [Enabled] USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] USB2 Port 12 [Enabled]	USB3 Port 5	[Enabled]	
USB3 Port 7 [Enabled] USB3 Port 8 [Enabled] USB2 Port 1 [Enabled] USB2 Port 2 [Enabled] USB2 Port 2 [Enabled] USB2 Port 3 [Enabled] USB2 Port 4 [Enabled] USB2 Port 4 [Enabled] USB2 Port 5 [Enabled] USB2 Port 6 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 8 [Enabled] USB2 Port 8 [Enabled] USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] USB2 Port 12 [Enabled]	USB3 Port 6	[Enabled]	
USB3 Port 8 [Enabled] USB2 Port 1 [Enabled] USB2 Port 2 [Enabled] USB2 Port 3 [Enabled] USB2 Port 3 [Enabled] USB2 Port 4 [Enabled] USB2 Port 4 [Enabled] USB2 Port 5 [Enabled] USB2 Port 6 [Enabled] USB2 Port 6 [Enabled] USB2 Port 7 [Enabled] USB2 Port 8 [Enabled] USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 10 [Enabled] USB2 Port 12 [Enabled] USB2 Port 12 [Enabled]	USB3 Port 7	[Enabled]	
USB2 Port 1 [Enabled] ++: Select Screen USB2 Port 2 [Enabled] 11: Select Item USB2 Port 3 [Enabled] Enter: Select USB2 Port 4 [Enabled] +/-: Change Opt. USB2 Port 5 [Enabled] F1: General Help USB2 Port 6 [Enabled] F2: Previous Values USB2 Port 7 [Enabled] F3: Optimized Defaults USB2 Port 8 [Enabled] F4: Save & Exit USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] F3: Optimized Defaults	USB3 Port 8	[Enabled]	
USB2 Port 1 [Enabled] ++: Select Screen USB2 Port 2 [Enabled] 11: Select Item USB2 Port 3 [Enabled] Enter: Select USB2 Port 4 [Enabled] +/-: Change Opt. USB2 Port 5 [Enabled] F1: General Help USB2 Port 6 [Enabled] F2: Previous Values USB2 Port 7 [Enabled] F3: Optimized Defaults USB2 Port 8 [Enabled] F4: Save & Exit USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] F4: Save Scritter USB2 Port 14 [Enabled			
USB2 Port 2[Enabled]11: Select ItemUSB2 Port 3[Enabled]Enter: SelectUSB2 Port 4[Enabled]+/-: Change Opt.USB2 Port 5[Enabled]F1: General HelpUSB2 Port 6[Enabled]F2: Previous ValuesUSB2 Port 7[Enabled]F3: Optimized DefaultsUSB2 Port 8[Enabled]F3: Save & ExitUSB2 Port 9[Enabled]ESC: ExitUSB2 Port 10[Enabled]USB2 Port 11USB2 Port 12[Enabled]F3: Save & Exit	USB2 Port 1	[Enabled]	++: Select Screen
USB2 Port 3[Enabled]Enter: SelectUSB2 Port 4[Enabled]+/-: Change Opt.USB2 Port 5[Enabled]F1: General HelpUSB2 Port 6[Enabled]F2: Previous ValuesUSB2 Port 7[Enabled]F3: Optimized DefaultsUSB2 Port 8[Enabled]F4: Save & ExitUSB2 Port 9[Enabled]ESC: ExitUSB2 Port 10[Enabled]USB2 Port 11USB2 Port 12[Enabled]F3: Optimized Defaults	USB2 Port 2	[Enabled]	↓ Select Item
USB2 Port 4 [Enabled] +/-: Change Opt. USB2 Port 5 [Enabled] F1: General Help USB2 Port 6 [Enabled] F2: Previous Values USB2 Port 7 [Enabled] F3: Optimized Defaults USB2 Port 8 [Enabled] F4: Save & Exit USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] F3: Optimized Defaults USB2 Port 10 [Enabled] USB2 Port 11 [Enabled]	USB2 Port 3	[Enabled]	Enter: Select
USB2 Port 5 [Enabled] F1: General Help USB2 Port 6 [Enabled] F2: Previous Values USB2 Port 7 [Enabled] F3: Optimized Defaults USB2 Port 8 [Enabled] F4: Save & Exit USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] •	USB2 Port 4	[Enabled]	+/-: Change Opt.
USB2 Port 6[Enabled]F2: Previous ValuesUSB2 Port 7[Enabled]F3: Optimized DefaultsUSB2 Port 8[Enabled]F4: Save & ExitUSB2 Port 9[Enabled]ESC: ExitUSB2 Port 10[Enabled]USB2 Port 11USB2 Port 12[Enabled]T	USB2 Port 5	[Enabled]	F1: General Help
USB2 Port 7 [Enabled] F3: Optimized Defaults USB2 Port 8 [Enabled] F3: Average 2 Exit USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] •	USB2 Port 6	[Enabled]	F2: Previous Values
USB2 Port 8 [Enabled] F4: Save & Exit USB2 Port 9 [Enabled] ESC: Exit USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] •	USB2 Port 7	[Enabled]	F3: Optimized Defaults
USB2 Port 9 [Enabled] USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled]	USB2 Port 8	[Enabled]	F4: Save & Exit
USB2 Port 10 [Enabled] USB2 Port 11 [Enabled] USB2 Port 12 [Enabled]	USB2 Port 9	[Enabled]	ESC: Exit
USB2 Port 11 [Enabled] USB2 Port 12 [Enabled] •	USB2 Port 10	[Enabled]	
USB2 Port 12 [Enabled]	USB2 Port 11	[Enabled]	
	USB2 Port 12	[Enabled]	•
Version 2 17 1255 Conunight (C) 2015 American Megateende Inc		Version 2 17 1255 Convright (C) 2	015 American Megatrends Inc



Aptio Setup Utility – Advanced	Copyright (C) 2015 American	Megatrends, Inc.
USB2 Port 4 USB2 Port 5 USB2 Port 6 USB2 Port 7 USB2 Port 8 USB2 Port 9 USB2 Port 10 USB2 Port 11 USB2 Port 12 USB2 Port 13 USB2 Port 14	[Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled]	Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDDM', drives with no media mil be emulated according to a drive type.
Legacy USB Support XHCI Hand-off USB Mass Storage Driver Support Port 60/64 Emulation USB handware delays and time-outs: USB transfer time-out Device reset time-out Device power-up delay Mass Storage Devices: MXT-USB	[Enabled] [Disabled] [Enabled] [Disabled] [20 sec] [20 sec] [Auto]	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1255. C	opyright (C) 2015 American M	egatrends, Inc.

USB Precondition

Precondition work on USB host controller and root ports for faster enumeration.

USB3 Port 1 – USB3 Port 8

Enables/disables USB port.

USB2 Port 1 – USB2 Port 14

Enables/disables USB port.

Legacy USB Support

Enables Legacy USB support.

AUTO option disables legacy support if no USB devices are connected.

DISABLE option will keep USB devices available only for EFI applications.

XHCI Hand-off

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by the XHCI driver.

USB Mass Storage Driver Support

Enables/disables USB Mass Storage Driver Support.

Port 60/64 Emulation

Enables I/O port 60h/64h emulation support. This should be enabled for complete USB keyboard legacy support for non-USB aware OSes.

USB transfer time-out

The time-out value for Control, Bulk, and Interrupt transfers.

Options: 1 sec, 5 sec, 10 sec, 20 sec

Device reset time-out

USB mass storage device Start Unit command time-out.

Options: 10 sec, 20 sec, 30 sec, 40 sec

Device power-up delay

Maximum time the device will take before it properly reports itself to the Host Controller.

'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

'Manual' for delay range by $1-40\ \text{seconds}$ in one second increments.



A.5.8 USB Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2012 Americ	can Megatrends, Inc.
USB Controller Intel USB3.0 Mode Legacy USB Support Legacy USB 3.0 Support	[Enabled] [Smart Auto] [Enabled] [Enabled]	Enable or disable all the USB ports.
		 ↔: Select Screen ↑↓: Select Item Enter: Select +/-: Charge Option F1: General Help F7: Discard Changes F9: Load UEFI Defaults F10: Save and Exit ESC: Exit

USB Controller

Enables/disables the USB controller.

Intel USB 3.0 Mode

Enables/disables Intel USB 3.0 mode.

Legacy USB Support

Selects legacy support for USB devices, from default Enabled, supporting legacy USB, Auto, supporting legacy USB when devices are connected, and Disabled (if USB compatibility issues occur, it is recommended to select Disabled to enter OS), and UEFI Setup Only, in which USB devices are allowed only under UEFI setup and Windows/Linux OS.

Legacy USB 3.0 Support

Enables/disables legacy support for USB 3.0 devices, with default Enabled.

A.5.9 HD Audio Configuration



HD Audio

Control Detection of the HD-Audio device.

Disabled = HDA will be unconditionally disabled

Enabled = HDA will be unconditionally enabled

Auto = HDA will be enabled if present, disabled otherwise.



A.5.10 SATA Configuration

Aptio Setup Utility - Main Advanced H/W Monitor Boot	Copyright (C) 2012 American Security Exit	Megatrends, Inc.
Hardware Health Event Monitoring		Quiet Fan Function Control
CPU Temperature M/B Temperature	: 66 °C : 34 °C	
CPU_FAN1 Speed CPU_FAN2 Speed CHA_FAN1 Speed CHA_FAN2 Speed	: 2163 RPM : N/A : N/A : N/A	
Vcore + 3.30V + 5.00V + 12.00V	: +1.776 V : +3.392 V : +5.088 V : +11.932 V	↔: Select Screen 14: Select Item
CPU_FAN1 & 2 Setting CHA_FAN1 & 2 Setting Over Temperature Protection Case Open Feature	[Full On] [Full On] [Disabled] [Disabled]	Enter: Select +/-: Change Option F1: General Help F7: Discard Changes F9: Load UEFI Defaults F10: Save and Exit ESC: Exit
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SATA Configuration

SATA Controller(s)

Enables/disables SATA Device.

SATA Mode Selection

Determines how SATA controller(s) operate.

Options: AHCI, RAID

Aggressive LPM Support

Enable PCH to aggressively enter link power state.

SATA Controller Speed

Indicates the maximum speed the SATA controller can support.

Options: Default, Gen1, Gen2, Gen3

Port 1 – Port 6

Enables or Disables SATA Port

A.5.11 Onboard Device Configuration

Aptio Setup Utility – Advanced	Copyright (C) 2015 Americ	an Megatrends, Inc.
Onboard devices configuration		Enable or Disable Serial Port
Serial Port 1 Configuration Serial Port COM1 Control Device Settings	[Enabled] <mark>[RS232]</mark> IO=3F8h; IRQ=4;	
Serial Port 2 Configuration Serial Port COM2 Control Device Settings	[Enabled] [RS232] IO=2F8h; IRQ=3;	
Serial Port 3 Configuration Serial Port Device Settings	<pre>[Enabled] IO=3E8h; IRQ=5;</pre>	
Serial Port 4 Configuration Serial Port Device Settings	[Enabled] IO=2E8h; IRQ=7;	+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults
Serial Port 5 Configuration Serial Port Device Settings	[Enabled] IO=2F0h; IRQ=6;	F4: Save & Exit ESC: Exit
Serial Port 6 Configuration		
Version 2.17.1255. Co	opyright (C) 2015 American	Megatrends, Inc.





Serial Port 1

Enables or Disables Serial Port (COM)

COM1 Control

Selects COM1 mode. RS232, RS422 or RS485

Serial Port 2

Enables or Disables Serial Port (COM)

COM2 Control

Selects COM2 mode. RS232, RS422 or RS485

Serial Port 3 - 6

Enables or Disables Serial Port (COM)

Serial Port Console Redirection

COM1 – COM6 and COM (PCI Bus0, Dev22, Func3) Console Redirection Enables or Disables

Legacy Console Redirection

Selects a COM Port to display redirection of Legacy OS and Legacy OPROM messages

Options: COM1 – COM6 and COM (PCI Bus0, Dev22, Func3)

Parallel Port

Enables or Disables Parallel Port (LPT/LPTE)

Device Mode

Change the Printer Port mode.

Option: STD Printer Mode, SPP Mode, EPP-1.9 and SPP Mode, EPP-1.7 and SPP Mode, ECP Mode, ECP and EPP 1.9 Mode, ECP and EPP 1.7 Mode

LAN #1 (Intel I219)

Enables/disables

LAN #1 (I219) Launch PXE OpROM

Enables/disables Boot Option for Legacy Network Devices.

LAN #2 (Intel I211)

Enables/disables

LAN #1 (I211) Launch PXE OpROM

Enables/disables Boot Option for Legacy Network Devices.



A.5.12 Advance Power Management

Aptio Setup Utili Advanced	ty – Copyright (C) 2015 Ame	erican Megatrends, Inc.
Advanced Power Management Power Supply Unit State After G3 RTC Wake system from S5 PCIE Slot Wake Onboard LAN i219 Wake PCI/SIO Wake PS/2 Device Wake BIOS POST Watchdog	[ATX Mode] [Last State] [Disabled] [Enabled] [Enabled] [Enabled] [Disabled] [Disabled]	ATX: OS will turn off system power when shutdown. NOTE: AT mode will not support S3 & S4.
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.17.125	5. Copyright (C) 2015 Ameri	ican Megatrends, Inc.

Power Supply Unit

ATX: OS turns off system power when shut down. NOTE: AT mode will not support S3 & S4.

State After G3

Specify what state to go to when power is re-applied after a power failure (G3 state).

Options: Power On, Power Off, Last State

RTC Wake system from S5

Enables/disables System wake on alarm event.

Selects FixedTime, system will wake on the hr::min::sec specified.

Selects DynamicTime , System will wake on the current time + Increase minute(s)

PCIe Slot Wake

Enables/disables PCI Express Slot wake capability Onboard LAN i219 Wake Enables/disables onboard LAN wake capability

PCI/SIO Wake

Enables/disables PCI/SIO wake capability

PS/2 Device Wake

Enables/disables PS/2 device wake from S5

BIOS POST Watchdog

Set watchdog timer for BIOS POST process. Options: Disabled, Second Mode, Minute Mode



A.5.13 AMT Configuration

Aptio Se Advanced	tup Utility – Copyright (C) 2015 American	Megatrends, Inc.
Intel AMT BIOS Hotkey Pressed	[Enabled] [Disabled]	Enable/Disable Intel (R) Active Management Technology BIOS Extension. Note : iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version	2.17.1255. Copyright (C) 2015 American M	egatrends, Inc.

Intel AMT

Enables/disables Intel® Active Management Technology BIOS Extension.

Note: iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device

BIOS Hotkey Pressed

OEMFLag Bit 1: Enables/disables BIOS hotkey press.

Aptio Se Advanced	tup Utility – Copyright (C)	2015 American Megatrends, Inc.
Intel Bios Guard Suppo	∩t [Disabled]	Enable/Disable Intel Bios Guard Support
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version	2.17.1255. Copyright (C) 20	015 American Megatrends, Inc.

A.5.14 Intel[®] BIOS Guard Technology

Intel Bios Guard Support

Enables/disables Intel BIOS Guard Support. Disable before flashing BIOS.



A.5.15 Network Stack Configuration

Aptio Setup Advanced	o Utility – Copyright (C) 2015 Americ	can Megatrends, Inc.
Network Stack	[Disabled]	Enable/Disable UEFI Network Stack
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.	.17.1255. Copyright (C) 2015 American	n Megatrends, Inc.

Network Stack

Enables/disables UEFI Network Stack

A.5.16 CSM Configuration

Aptio Setup Utility - Advanced	- Copyright (C) 2015 Americar	n Megatrends, Inc.
Compatibility Support Module Configuration		Enable/Disable CSM Support.
CSM Support		
CSM16 Module Version	07.79	
GateA20 Active Option ROM Messages INT19 Trap Response	[Upon Request] [Force BIOS] [Immediate]	
Boot option filter	[UEFI and Legacy]	
Option ROM execution		++: Select Screen
Network Storage Video Other PCI devices	[Do not launch] [Do not launch] [Legacy] [Do not launch]	<pre>f1: Select Item Enter: Select +/-: Change Opt. f1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
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CSM Support

Enables/disables CSM Support.

GateA20 Active

UPON REQUEST - GA20 can be disabled using BIOS services.

ALWAYS - do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages

Set display mode for Option ROM Options: Force BIOS, Keep Current



INT19 Trap Response

BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE - execute the trap right away; POSTPONED - execute the trap during legacy boot.

Boot option filter

This option controls Legacy/UEFI ROMs priority

Network

Controls the execution of UEFI and Legacy PXE OpROM

Storage

Controls the execution of UEFI and Legacy Storage OpROM

Video

Controls the execution of UEFI and Legacy Video OpROM

Other PCI devices

Determines OpROM execution policy for devices other than Network, Storage, or Video
A.5.17 NCT6106D HW Monitor

Aptio Setup Utili Advanced	ty – Copyright (C) 2015 Am	merican Megatrends, Inc.
Pc Health Status		CPU Fan Control Mode Select
CPU Temperature System Temperature1 System Temperature2 CPU Fan Speed System Fan1 Speed System Fan2 Speed VCORE +12V voltage +5V voltage +3.3V voltage	: +34 % : +27 % : 428 % : 1032 RPM : N/A : N/A : +0.960 V : +11.904 V : +4.979 V : +3.296 V	
CPU Fan Control Mode Ti Ti Duty T2 Duty T3 T3 Duty T4 T4 Duty Critical System Fani Control Mode T1	[SMART FAN IV] 10 16 50 80 60 90 70 240 80 [SMART FAN IV] 10	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.125	5. Copyright (C) 2015 Amer	rican Megatrends, Inc.



Aptio Setup Advanced	Jtility – Copyright (C) 2015 Ame	rican Megatrends, Inc.
T3 T3 Duty T4 T4 Duty Critical System Fani Control Mode T1 T1 Duty T2 T2 Duty	60 90 70 240 80 [SMART FAN IV] 10 16 50 80	▲ Critical Temperature
T3 T3 Duty T4 T4 Duty Critical System Fan2 Control Mode T1 T1 Duty T2 T2 Duty T3 T3 Duty T4 T4 T4 Duty Critical	60 90 70 240 80 [SMART FAN IV] 10 16 50 80 60 90 70 240 80	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

CPU Fan Control Mode

CPU Fan Control Mode Select

Options: Manual Mode, SMART FAN IV

T1

T1 (Temperature 1), Range: 1-100

T1 Duty

Set T1 related DC/PWM value, Range: 0-255

Т2

T2 (Temperature 2), Range: 1-100

T2 Duty

Set T2 related DC/PWM value, Range: 0-255

Т3

T3 (Temperature 3), Range: 1-100

T3 Duty

Set T3 related DC/PWM value, Range: 0-255

Т4

T4 (Temperature 4), Range: 1-100

T4 Duty

Set T4 related DC/PWM value, Range: 0-255

Critical

Critical Temperature

System Fan1 Control Mode

System Fan1 Control Mode Select Options: Manual Mode, SMART FAN IV **T1** T1 (Temperature 1), Range: 1-100 T1 Duty Set T1 related DC/PWM value, Range: 0-255 **T2** T2 (Temperature 2), Range: 1-100 T2 Duty Set T2 related DC/PWM value, Range: 0-255 Т3 T3 (Temperature 3), Range: 1-100 T3 Duty Set T3 related DC/PWM value, Range: 0-255 Τ4 T4 (Temperature 4), Range: 1-100

T4 Duty

Set T4 related DC/PWM value, Range: 0-255



Critical

Critical Temperature

System Fan2 Control Mode

System Fan2 Control Mode Select Options: Manual Mode, SMART FAN IV **T1** T1 (Temperature 1), Range: 1-100 T1 Duty Set T1 related DC/PWM value, Range: 0-255 **T2** T2 (Temperature 2), Range: 1-100 T2 Duty Set T2 related DC/PWM value, Range: 0-255 Т3 T3 (Temperature 3), Range: 1-100 T3 Duty Set T3 related DC/PWM value, Range: 0-255 Τ4 T4 (Temperature 4), Range: 1-100 T4 Duty Set T4 related DC/PWM value, Range: 0-255 Critical

Critical

Critical Temperature

Aptio Setup Utility - Copyright (C) 2015 American Megatrends, Inc. Advanced Enable or Disable the High Miscellaneous Configuration Precision Event Timer. Port 80h Redirection [LPC_Bus] SMART Self Test [Disabled] Pcie Pll SSC [Auto] ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit Version 2.17.1255. Copyright (C) 2015 American Megatrends, Inc

A.5.18 Miscellaneous Configuration

High Precision Timer

Enables/disables the High Precision Event Timer.

Port 80h Redirection

Control where the Port 80h cycles are sent. Options: LPC Bus, PCIE Bus

SMART Self Test

Run SMART Self Test on all HDDs during POST.

Pcie PII SSC

Pcie PII SSC percentage.

AUTO - Keep hw default, no BIOS override.



Range is 0.0% - 2.0%.

A.6 Security

A.6.1 Administrator Password



Administrator Password

Set Administrator Password

User Password

Set User Password

RTC Lock

Enable will lock bytes 38h-3Fh in the lower/upper 128-byte bank of RTC RAM.

BIOS Lock

Enables/disables the PCH BIOS Lock Enable (BLE bit) feature.

A.6.2 Secure Boot menu



Secure Boot

Secure Boot can be enabled if:

- 1. System running in User mode with enrolled Platform Key(PK)
- 2. CSM function is disabled

Secure Boot Mode

Secure Boot mode selector.

Options: Standard, Custom

'Custom' Mode enables users to change Image Execution policy and manage Secure Boot Keys



Key Management

Enables experienced users to modify Secure Boot variables

A.7 Boot



Setup Prompt Timeout

Number of seconds to wait for setup activation key.

65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Selects the keyboard NumLock state

Quiet Boot

Enables/disables Quiet Boot option

Fast Boot

Enables/disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

New Boot Option Policy

Controls the placement of newly detected UEFI boot options Options: Default, Place First, Place Last

Boot mode select

Selects boot mode LEGACY/UEFI

Boot Option #1

Sets the system boot order

Boot Option #2

Sets the system boot order

Boot Option #3

Sets the system boot order

Boot Option #4

Sets the system boot order

Boot Option #5

Sets the system boot order

Boot Option #6

Sets the system boot order

Boot Option #7

Sets the system boot order

Boot Option #8

Sets the system boot order



A.8 Save & Exit

Aptio Setup Utility – (Main Advanced Security <mark>Boot</mark> Save	Copyright (C) 2015 American e & Exit	Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot	1 [On] [Enabled]	Number of seconds to wait for setup activation key. 65535(OxFFFF) means indefinite waiting.
Fast Boot	[Disabled]	
New Boot Option Policy Boot mode select	[Default] [UEFI]	
FIXED BOOT ORDER Priorities Boot Option #1 Boot Option #2 Boot Option #3 Boot Option #4 Boot Option #5 Boot Option #6 Boot Option #7 Boot Option #8 • UEFI USB Key Drive BBS Priorities	[Hard Disk] [CD/DVD] [USB Hard Disk] [USB CD/DVD] [USB Key:UEFI: JetFlashTranscend 166B 1.00, Partition 1] [USB Floppy] [USB Lan] [Network]	++: Select Screen ++: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1255. Cop	oyright (C) 2015 American Mu	egatrends, Inc.

Save Changes and Exit

Exit system setup after saving the changes.

Discard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

Save Changes done so far to any of the setup options.

Discard Changes

Discard Changes done so far to any of the setup options.

Restore Defaults

Restore/Load Default values for all the setup options.

Save as User Defaults

Save the changes done so far as User Defaults.

Restore User Defaults

Restore the User Defaults to all the setup options.

Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices



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Important Safety Instructions

For user safety, please read and follow all instructions, Warnings, Cautions, and Notes marked in this manual and on the associated device before handling/operating the device, to avoid injury or damage.

S'il vous plaît prêter attention stricte à tous les avertissements et mises en garde figurant sur l'appareil, pour éviter des blessures ou des dommages.

- Read these safety instructions carefully
- ► Keep the User's Manual for future reference
- Read the Specifications section of this manual for detailed information on the recommended operating environment
- ► The device can be operated at an ambient temperature of 50°C
- When installing/mounting or uninstalling/removing device; or when removal of a chassis cover is required for user servicing (See "Getting Started" on page 23.):
 - > Turn off power and unplug any power cords/cables
 - > Reinstall all chassis covers before restoring power
- ► To avoid electrical shock and/or damage to device:
 - ▷ Keep device away from water or liquid sources
 - > Keep device away from high heat or humidity
 - Keep device properly ventilated (do not block or cover ventilation openings)
 - Always use recommended voltage and power source settings
 - Always install and operate device near an easily accessible electrical outlet
 - Secure the power cord (do not place any object on/over the power cord)
 - Only install/attach and operate device on stable surfaces and/or recommended mountings
- If the device will not be used for long periods of time, turn off and unplug from its power source



- Never attempt to repair the device, which should only be serviced by qualified technical personnel using suitable tools
- A Lithium-type battery may be provided for uninterrupted backup or emergency power.



Risk of explosion if battery is replaced with one of an incorrect type; please dispose of used batteries appropriately. *Risque d'explosion si la pile est remplacée par une autre de type incorrect. Veuillez jeter les piles usagées de façon appropriée.*

- The device must be serviced by authorized technicians when:
 - ▷ The power cord or plug is damaged
 - Liquid has entered the device interior
 - The device has been exposed to high humidity and/or moisture
 - The device is not functioning or does not function according to the User's Manual
 - The device has been dropped and/or damaged and/or shows obvious signs of breakage
- Disconnect the power supply cord before loosening the thumbscrews and always fasten the thumbscrews with a screwdriver before starting the system up
- It is recommended that the device be installed only in a server room or computer room where access is:
 - Restricted to qualified service personnel or users familiar with restrictions applied to the location, reasons therefor, and any precautions required
 - Only afforded by the use of a tool or lock and key, or other means of security, and controlled by the authority responsible for the location



BURN HAZARD

Touching this surface could result in bodily injury. To reduce risk, allow the surface to cool before touching.

RISQUE DE BRÛLURES

Ne touchez pas cette surface, cela pourrait entraîner des blessures.

Pour éviter tout danger, laissez la surface refroidir avant de la toucher.



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Getting Service

Ask an Expert: http://askanexpert.adlinktech.com

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