

USER MANUAL

ZKBio930&ZKBio950

Version : 1.0 Date: July, 2019

Important Claim

Firstly, thank you for purchasing this hybrid-bio terminal. Before using, please read this manual carefully to avoid the unnecessary damage! The company reminds you that the proper use will improve the use affect and authentication speed.

No written consent from our company, any unit, or individual isn't allowed to excerpt, copy the content of this manual in part or in full, also spread in any form.

The product described in the manual maybe includes the software which copyrights are shared by the licensors including our company. Except for the permission of the relevant holder, any person can't copy, distribute, revise, modify, extract, decompile, disassemble, decrypt, reverse engineering, leasing, transfer, sub-license the software, other acts of copyright infringement, but the limitations applied to the law is excluded.

Copyrights

© Copyright 2017 ZKTeco Co. Ltd. All rights reserved.

All rights reserved. Except as specifically permitted herein, no portion of the information in this document may be reproduced in any form or by any means without the prior written permission from ZKTeco.

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Due to the constant renewal of products, the company cannot undertake the actual product in consistence with the information in the document, also any dispute caused by the difference between the actual technical parameters and the information in this document. Please forgive any change without notice.

Safety Instructions

- 1. Read these instructions carefully. Keep these instructions for future reference.
- 2. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning. Use moisture sheet or cloth for cleaning.
- 3. Please keep this equipment from humidity.
- 4. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.
- 5. Make sure power cord such a way that people cannot step on it. Do not place anything over the power cord.
- 6. All cautions and warnings on the equipment should be noted.
- 7. If the equipment is not used for long time, disconnect the equipment from main to avoid being damaged by transient over voltage.
- 8. Never pour any liquid into opening; this could cause fire or electrical shock.
- 9. If one of the following situations arises, get the equipment checked by a service personnel:
- 10. The power cord or plug is damaged.
- 11. Liquid has penetrated into the equipment.
- 12. The equipment has been exposed to moisture.
- 13. The equipment does not work well or you cannot get it work according to user manual.
- 14. The equipment has dropped and damaged.
- Do not leave this equipment in an environment unconditioned, storage temperature below
 -20°C or above 60°C, it may damage the equipment.
- 16. Unplug the power cord when doing any service or adding optional kits.

Lithium Battery Caution:

- 1. Danger of explosion can happen if the battery is incorrectly replaced. Replace only the original or equivalent type recommended by the manufacture. Dispose used batteries according to the manufacturer's instructions.
- 2. Do not remove the cover, and ensure no user serviceable components are inside. Take the unit to the service center for service and repair.

	Table	of	Content	s
--	-------	----	---------	---

1. Packing List1	I
1.1. Standard Accessories1	1
1.2 Optional Accessories1	1
2. System View	3
2.1. Rear View	3
2.2. Back View	3
2.3. Specification	1
2.4. Internal Layout	1
3. Pin Definition6	3
3.1. CPU	3
3.2. pin and jumper setting	3
4. BIOS Settings	5
BIOS Setting	5
4.1. MAIN MENU	3
4.2. ADVANCED MENU	7
4.3. Chipset MENU	3
4.4. Security MENU	2
4.6. Save&Exit MENU	4
5. LCD Surface Cleaning	5

1. Packing List

1.1. Standard Accessories



1.2 Optional Accessories



d.	е	f.
	a. Single MSR	
	b. VFD	
	c. 2 nd Display	
	d. 1D or 2D Handheld Type	Barcode Scanner
	e. Thermal Printer	
	f. Cash Drawer	

2. System View

2.1. Rear View



 \Rightarrow Please make sure 12V DC plug in the right direction before plugging in DC jack.

2.2. Back View





2.3. Specification

	LCD Displa	y Size	15"TFT LCD	
	Max. Reso	lution	1024x768	
Display & Touch	Brightness		250 cd/m²	
	Support C	Color	16.2M/ 262K colors	
	Backlig	ht	LED	
	Touch Ty	/pe	Standard Projected Capacitive	
	Process		Intel®Core i3-4005U 1.7GHz(ZKBio930)	
Main Board	Process	501	Intel®Core i5-4210U 2.6GHz(ZKBio950)	
	Svotom Mo	mori	One SO-DIMM socket supports DDR3L	
System Memory		1600 up to 8GB		
Storage	HD		2.5" SATAII HDD x 1&MSATA x 1	
			X 5 (USB 2.0)	
1/0	USB		X 2 (USB 3.0)	
I/O	Video outpu		VGAX 1 HDMI X1	
	Audio P	ort	x 1 Line-out x1 mic in	
Network	LAN		X 1 (RJ45 10/100/1000 Base-T)	
	T a man a ma (1, ma	Operation	32° to 104° F (0° to 40° C)	
Environmental	Temperature	Storage	-4° to 140° F (-20° to 60° C)	
	Relative Humidity		20% to 80% non-condensing	
F	ower Supply		12V 5A power adapter	
			POS Ready 7 / Win 8.1 Industry / Win 10 IoT	
	OS Support		Enterprise	
	Dimension		228*385*403 mm	
Compliance	Certificati	ons	CE / FCC	

2.4. Internal Layout

M/B PCBA



In order to prevail in kind, the above picture is for reference only

No	description	No	description
1	F_Audio	18	LVDS
2	MiniPCIE	19	JPS1, PS/2
3	MSATA	20	VGA
4	CPU	21	ATX12,4pin 12
5	4PinSATA power	22	SATA_SET2
6	COM1 COM2	23	BAT for CMOS
7	F_USB1, USB2.0	24	Speaker
8	JCOM1 JCOM2	25	Print
9	FPANEL	26	SPDIF
10	GPIO	27	SATA HDD
11	Clear COM JBAT	28	COM_CON2
12	CFAN SFAN	29	COM2_SET2
13	JME	30	J485E
14	JHDMI	31	Auto_On
15	LVDS	32	JPS1, PS/2
16	LVDS_PWR	33	Buzzer
17	SO-DIMM	34	10

3. Pin Definition

3.1. CPU

This mainboard uses Intel®Core i3-4005U 1.7GHz/Intel®Core i5-4210U2.6GHz CPU

3.2. pin and jumper setting

JVGA

Built-in VGA display interface: JVGA

The motherboard provides 1 * 12 Pin VGA connector (spacing: 2.0mm), the pin is defined as

follows:

	PIN	Definition	PIN	Definition
	1	G ND	2	VGA_VSYNC
	3	VGA_HSYNC	4	G ND
	5	VGA_RED (red)	6	G ND
⁵	7	VGA_GRN (green)	8	G ND
	9	VGA_BLUE (blue)	10	G ND
	11	DDC_DATA	12	DDC_CLK

JPS2

Built-in PS2 mouse and keyboard interface: JPS2

PS2 interface, which is specific interface for mouse and keyboard, is a 6-pin round interface. However, the mouse uses only one of the 4-pin data transmission and power supply, and the remaining two are empty pin. The motherboard provides 1 * 7 PIN PS / 2 connector (spacing:2.0mm), the pin is defined as follows:

	PIN	Definition	PIN	Definition
BB31	1	KB_DATA	2	KB_CLK
	3	G ND	4	MS_DATA
	5	MS_CLK	6	G ND
	7	+V58		

F_AUDIO

Front audio interface: F_AUDIO

The Motherboard provides 2 * 5 PIN (spacing: 2.54MM) front audio interface, the pin is defined as

follows :

	PIN	Definition	PIN	Definition
	1	FP_MIC_L	2	G ND
	3	FP_MIC_R		
	5	FP_OUT_R	6	NC
	7	G ND		
	9	FP_OUT_L	10	NC

F_PANEL

Front panel switch interface: F_PANEL

The motherboard provides 2 * 5 Pin F-PANEL interface (spacing: 2.54mm), computer chassis power switch, reset switch, hard drive indicator and power indicator light can be connected to this pin:

F	PAN	EL	9	

PIN	Definition	PIN	Definition
1	Power LED+	2	HDD LED+
3	Power LED-	4	HDD LED-
5	G ND	6	PWR_SW
7	RESET	8	G ND
9	G ND		G ND

F_USB

Built-in USB interface **F_USB**, **F_USB1**, **F_USB2**

The motherboard provides three 2 * 5 pin USB interface (spacing: 2.54mm), the pin is defined as follows :

	PIN	Definition	PIN	Definition
	1	VCC+5V	2	VCC+5V
	3	USB1Date-	4	USB2Date-
$2 \overline{1}$ $2 \overline{1}$ $2 \overline{1}$	5	USB1 Date+	6	USB2 Date+
	7	GND	8	GND
			10	oc

СОМ

Built-in serial port COM1~COM6

The motherboard provides a 4-in-one built-in COM_CON (spacing 2.00mm), that is, 4 standard RS232 pin into a pin interface, total of 40 Pins.

The motherboard provides two 2 * 5 PIN COM interface(spacing:2.54mm), standard RS232 pin is defined as follows:

	PIN	Definition	PIN	Definition
00	1	DCD	2	RXD
	3	TXD	4	DTR
28 🛱 🖓	5	GND	6	DSR
	7	RTS	8	CTS
	9	RI		
			I DCD I I I DCD I I I I I I I I I I I I I I I I I I I I I I I I <	I DCD 2 I I I DCD 2 I I I I I I I I I I I I I I I I I I I I I I I

COM SET

JCOM1/JCOM2 jumper: COM1_SET1、COM2_SET1

The motherboard provides two 2 * 3 Pin jumper pins (spacing: 2.54 mm), it can select different voltage by jumper according to the needs.

		JCOM1/JCOM2	Pin 1
	COM1_SET1 COM2_SET1	1-2	12v
M1_SETT		3-4	5v
		5-6(Default)	DCD

COM2_SET2

The motherboard provides 4 Pin COM2_SET2 jumper (spacing:2.54mm), according to the actual use to choose COM2 or 485

	PIN	Definition
	1-2(Default)	COM2
	2-3	485

J485E

:

The motherboard provides 4 Pin 485 interface (spacing: 2.54mm), the Pin is defined as follows



PIN	Definition
1	RTX+
2	RTX-
3	GND
4	G ND

CIR, infrared pin interface

The motherboard reserved 3 PIN infrared pin interface (spacing: 2.54mm), the Pin is defined as follows:

	l cc
	12
7	(32)
	\smile

PIN	Definition
1	VCC
2	RX
3	GND

Cooling fan power outlet: CFAN1、SFAN1

The motherboard provides two cooling fan connector (spacing: 2.54mm), the pin is defined as follows:



SATA Power supply interface: JSATA_PWR

The motherboard provides 1 * 4 Pin SATA power connector (spacing: 2.54mm), the pin is defined as follows:

5 SALA PWR					
•	Pin	1	2	3	4
	Definition	+5V	Ground	Ground	+12

SATA_SET2

The motherboard provides 12 Pin SATA_SET2 jumper (spacing: 2.54mm), the jumper is defined as follows:

4	PIN	Definition
	1-5	
	2-6	Mini_PCIE
	3-7	_
4	4-8	
SATA_SET2	5-9	
	6-10	MSATA
(22)	7-11	
\smile	8-12	

ME jumper: JME

The motherboard provides 1 * 2 Pin ME jumper (spacing: 2.54mm), the pin is defined as follows:

	PIN	Definition
JME	1-2 Shorted	Update ME
JME	Open (Default)	Not update ME

Clear CMOS jumper: JBAT

The motherboard provides 1 * 3 PIN CLR_CMOS connector, CLR_CMOS: CMOS clear content / hold settings (spacing: 2.54 mm), powered by on-board button battery. Clear CMOS will permanently eliminate the previous system configuration and set it to the original (factory setting) system setting. The steps: (1) turn off the computer, disconnect the power; (2) short circuit JBAT2-3 pin about 5 seconds; (3) turn on the computer; (4) start pressing the screen prompts to enter the BIOS settings, reload the default Value; (5) Save and exit settings. the pin is defined as follows:

PIN	Definition
1-2(Default)	Normal
2-3	Clear CMOS

GPIO connector

The motherboard provides 9 Pin (spacing 2.00mm) GPIO connector, the pin is defined as follows:

PIN	Definition	PIN	Definition
1	VCC	2	+V128
3	GPI1	4	GP05
5	GPI2	6	GP06
7	GPI3	8	GPO7
9	GPI4	10	GP08
11	GND	12	G ND

LVDS Connector:

The motherboard provides 2 * 15 Pin LVDS connector (spacing: 2.0mm), the pin is defined as follows:

PIN	Definition	PIN	Definition	PIN	Definition
1	VCC	2	VCC	3	VCC
4	G ND	5	G ND	6	G ND
7	LVDS_A_DATA0-	8	LVDS_A_DATA0+	9	LVDS_A_DATA1-
10	LVDS_A_DATA1+	11	LVDS_A_DATA2-	12	LVDS_A_DATA2+
13	G ND	14	G ND	15	LVDS_A_CLK-
16	LVDS_A_CLK+	17	LVDS_A_DATA3-	18	LVDS_A_DATA3+
19	LVDS_B_DATA0-	20	LVDS_B_DATA0+	21	LVDS_B_DATA1-
22	LVDS_B_DATA1+	23	LVDS_B_DATA2-	24	LVDS_B_DATA2+
25	G ND	26	G ND	27	LVDS_B_CLK-
28	LVDS_B_CLK+	29	LVDS_B_DATA3-	30	LVDS_B_DATA3+

LVDS Backlight connector: INVERT

The motherboard provides a 1 * 6PIN INVERT interface, (spacing :2.0mm), the pin is defined as follows:

	PIN	Definition	PIN	Definition
	1	+ 12V	2	+12V
L <u>18</u>	3	LVDS_BKL_EN Backlight	4	BKL_PWM Backlight brightness
	5	G ND	6	GND

LVDS voltage control connector: JPWR_LVDS1

The motherboard provides 2 * 3 pin LVDS-JP interface (spacing: 2.54mm). Jumper is defined as follows:

JPWR_LVDS	PIN	Definition
	1-2	+ 3.3V
	3-4	+ 5V
	5-6	+ 12V

Built-in print port, Print

The motherboard provides 2 * 13 Pin built-in print port(spacing: 2.00mm), the pin is defined as follows:

	PIN	Definition	PIN	Definition
NT	1	STB	2	AFD
<u>]</u> 2	3	PDO	4	LPT_BRR
<u>ן</u>	5	PD1	6	INIT
	7	PD2	8	SLIN
ป	9	PD3	10	G ND
]	11	PD4	12	G ND
25	13	PD5	14	G ND
H 🗹	15	PD6	16	G ND
1	17	PD7	18	G ND
1	19	LPT_ACK	20	G ND
{	21	LPT_BUSY	22	G ND
	23	LPT_PE	24	G ND
	25	LPT_SLCT	26	none

Hardware control Auto_On

The motherboard provides 1 * 3 Pin (spacing: 2.54mm) Auto_On jumper, when short circuit 2-3pin, the power is turned on automatically

Definition

Normal

Auto_On

Auto_on	PIN	
	1-2(Default)	
	2-3	

Built-in digital high-definition display interface JHDMI

The motherboard provides 2 * 8 Pin JHDMI(pin spacing 2.0mm), supports high-definition display

output, the pin is defined as follows:

	~
	\equiv
	\leq
	14
2 1	

PIN	Definition	PIN	Definition
1	HDMI_TXD2_P	2	HDMI_DDC_CLK_R
3	HDMI_TXD2_N	4	HDMI_DDC_DATA_R
5	HDMI_TXD1_P	6	NC
7	HDMI_TXD1_N	8	HPD_CONN
9	HDMI_TXD0_P	10	+5V_HDMI
11	HDMI_TXD0_N	12	GND
13	HDMI_TXCOP	14	GND
15	HDMI_TXCON	16	GND

Speaker

The motherboard provides 4 Pin Speaker interface (spacing 2.0mm), the pin is defined as

follows:



PIN	Definition
1	AMP_OUT_LN
2	AMP_OUT_LP
3	AMP_OUT_RN
4	AMP_OUT_RP

ATX12 Power input interface

The motherboard provides 4 Pin ATX12V power input interface to meet different customer needs





4. BIOS Settings

Introduction

The purpose of this section is to introduce the functions of the motherboard AMI BIOS setup menu. BIOS program allows the user to modify and save the basic system configuration. BIOS setup options and modify data, are stored in the CMOS RAM, CMOS RAM power supply is provided by a lithium battery on the motherboard, make sure that the power is cut off, the modified value saved in CMOS RAM will not be lost.

Under normal circumstances, the factory default BIOS is optimize value, no modification, if other causes BIOS data loss, need to re-set the BIOS option.

When you do not understand the BIOS options and settings, please do not arbitrarily modify, if problems happened because the error BIOS value, please restore the BIOS factory settings.

This manual provides some instructions that allow the user to refer to and optimize the BIOS function settings, but there are still some BIOS projects that are not described. Please keep the default settings without having to fully understand their functions.

BIOS Setting

The following contents of this manual will instruct you to set the basic functions of the BIOS program.

When the computer is started, the BIOS enters the POST program. The self-test program is a series of diagnostic programs that are fixed in the BIOS. When the self-test program is executed, if

any error, it will display the following information:

Press Delete to BIOS

If you want to enter the BIOS, press <Delete> to enter the BIOS setup program. If this message disappears before you react, you can turn off or press the Reset button, Restart your computer, you can also press <Ctrl + Alt + Delete> to restart the computer.

In the BIOS setup, you will see a description of the options in the upper right corner, which is a brief description of the selected items. The detailed description of Function keys in the lower right corner, you can use these keys to specify options and change settings.

BIOS Function keys

BIOS Function keys	Description
→←	select screen
↑↓	select item
ENTER	Select the item and enter the submenu
	Change the item, add or subtract values
+/-	
F1	Display help content
F2	Previous setting values
F3	Optimized Defaults
F4	Save changes and Exit
ESC	Exit

BIOS Upgrade

- ① Please download from the official website or get the latest BIOS file and refresh tool from the supplier
- 2 Let the computer run in UEFI Shell mode, we provide the AMI BIOS refresh tool is FPT64.efi.
- ③ Run the application to back up the BIOS file. The instruction is FPT64.efi / D bakup.BIN
- ④ Update the BIOS. The instruction is FPT64.efi / F NEWBIOS.BIN.
- (5) Restart the computer, press "Delete" to set the BIOS, press "F3" to select "Load Optimized default ", press "F4" to save the changes and exit.

The default BIOS settings are suitable for most situations, ensuring optimal motherboard performance. If the system becomes unstable when you change the settings, load the default settings to ensure system compatibility and stability.

In order to get better system performance, the motherboard's BIOS firmware will be constantly updated.

The BIOS information described in this manual is just for your reference, and the actual BIOS information and its settings may differ slightly from the manual.

The contents of this manual are subject to change without notice

4.1. MAIN MENU

Once you have entered the AMI BIOS setup menu, the main menu appears on the screen and displays an overview of the basic system information. Select the item you want to change, press

the " $\uparrow \downarrow \leftarrow \rightarrow$ " button to move the navigation bar to the item you want to change and press the <Enter> button. When you move the navigation bar to each item, the top right of the screen will display a Help information to help you better understand the functionality of this item. When an item is selected, the submenu of the item is displayed and the user can adjust the corresponding configuration parameters.

BIOS Information BIOS Vendor Project Version Build Date and TimeAmerican Megatrends G18EL201 x64 01/18/2017 14:52:12OS SelectionMemory Information Total Memory4096 MB (DDR3L)	Aptio Setup Utility – Main Advanced Chipset Security	Copyright (C) 2017 American Boot Save & Exit	Megatrends, Inc.
Total Memory4096 MB (DDR3L)OS Selection[Windows 7]System Language[English]System Date[Fri 04/21/2017]System Time[17:32:01]Access LevelAdministratorAccess LevelAdministratorF1: General HelpF2: Previous ValuesF3: Optimized DefaultsF4: Save & Exit	BIOS Vendor Project Version	G18EL201 ×64	OS Selection
System Language[English]System Date[Fri 04/21/2017] [17:32:01]System Time[17:32:01]Access LevelAdministratorAccess LevelAdministratorFil: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit		4096 MB (DDR3L)	
System Date [Fri 04/21/2017] System Time [17:32:01] ++: Select Screen Access Level Administrator Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	OS Selection	[Windows 7]	
System Time [17:32:01] ++: Select Screen 14: Select Item Access Level Administrator Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	System Language	[English]	
Access Level Administrator Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit			
	Access Level	Administrator	Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit

BIOS Information

Displays BIOS system information, including BIOS version, creation date, etc.

OS Selection

OS Selection: Windows 7、Windows 8.X

System Date

Set the current date of the system, the display format is "week * month / day / year"

System Time

Set the current time of the system, the display format is "hours: minutes: seconds"

4.2. ADVANCED MENU

The Advanced menu allows you to set up CPU, Super I / O, Power settings management, and other system devices.

If the value of the item in this menu is set incorrectly, it may cause a system failure.



ACPI Settings

This item provides the power management information setting (Due to different models of motherboards, some options are different, please choose according to the actual item)

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Advanced			
ACPI Settings		Enables or Disables BIOS ACPI Auto Configuration.	
Enable ACPI Auto Configuration	[Disabled]	Huto configuration.	
Enable Hibernation ACPI Sleep State Lock Legacy Resources	[Enabled] [S3 (Suspend to RAM)] [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 2.17.1249. Co	pyright (C) 2017 American M	egatrends, Inc.	

Enable Hibernation

Set the Enable or Disabled system hibernation, the default is "Enabled"

ACPI Sleep State

Set the ACPI sleep state, the option is: "Suspend Disabled"

IT8786E Super IO Configuration



Watch dog Controller

Watch dog Controller, the option is: Disabled(default), Second, Minute

Restore AC Power Loss By IO

Restore On AC Power Loss: Power Off(default) 、 Power On、 Last State

Serial Port Configuration

Select an address and the corresponding interrupt to the serial port, enter the settings interface

and display:



Serial PortX

Select the serial port on or off, the set value is:[Enabled], [Disabled]

Device Settings

Set the serial port interrupt, interrupt settings [IO=3F8h;IRQ=4]

Change Settings

The item has six options, the default value is [Auto]

Parallel Port Configuration

Select an address and the corresponding interrupt to the serial port, enter the settings interface and display:



Parallel Port

Select the parallel port to on or off, the set value is:[Enabled], [Disabled]

Device Settings

Set the parallel port interrupt [IO=378h;IRQ=6]

Change Settings

The item has five options, the default value is [Auto]

Device Mode

EPP Mode ECP Mode EPP mode & ECP Mode

Hardware Monitor



PC Health Status

The interface displays information about the health status of the PC hardware, including CPU temperature, system temperature, CPU fan speed, system fan speed, voltage, etc.

Aptio Setup Utility - Advanced	- Copyright (C) 2	017 American	Megatrends,	Inc.
Pc Health Status				
CPU temperature System temperature	: +28 C : +43 C			
CPU Fan Speed SYS Fan Speed +12V 5V VBAT	: N/A : N/A : +12.136 V : +4.960 V : +3.224 V		++: Select Selec	Item Ct Opt. Help S Values ed Defaults
Version 2.17.1249. (Copyright (C) 201	7 American Me	gatrends, In	nc.

Advanced S5 RTC Wake Settings

Set the timer switch, setting options: Disabled (default), Enabled. When set to Enabled, you need to set the fixed boot time, format: day (D): Hour (H): minute (M): second (S)

Aptio Setup Utility – Copyright (C) 2017 American Main <mark>Advanced</mark> Chipset Security Boot Save & Exit	Megatrends, Inc.
 Super ID Configuration Hardware Monitor SS RTC Wake Settings CPU Configuration IDE Configuration CSM Configuration USB Configuration 	<pre>Fnable system to wake from S5 using RTC alarm ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.17.1249. Copyright (C) 2017 American Me	egatrends, Inc.

Aptio Setur Advanced) Utility — Copyright (C) 2017 American	Megatrends, Inc.
Wake system from S5	[Disabled]	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime , System will wake on the current time + Increase minute(s) ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.	17.1249. Copyright (C) 2017 American M	legatrends, Inc.

CPU Information

This displays the information that the BIOS automatically detects.



Socket 0 CPU Information

Displays CPU detailed information

Active Processor Cores[ALL]

Activate the number of processor cores with options ALL, 1

Limit CPUID Maximum[Disabled]

Please set this item to [Enabled] when you want to use an operating system that does not support

the extended CPUID function. setting options: [Disabled] [Enabled]

Execute Disable Bit [Enabled]

This item is used to enable or disable No-Excution Page Protection technology. When set to

[Enabled], the XD function is always forced to 0, setting options: [Disabled][Enabled]

Hardware Prefetcher [Enabled]

This item allows you to use or not use the hardware prefetcher function: [Enabled], [Disabled]

Adjacent Cache Line Prefetch [Enabled]

This item allows you to use or not use prefetcher adjacent cache data mode. When set to [disabled], only one 64-bit line is pre-read from the 128-bit segment (contains the requested data). When set to [enable], both lines will be prefetched, regardless of whether they have the requested data. setting options:[Enabled], [Disabled]

Intel Virtualization Technology [Disabled]

Intel Virtualization Technology setting options: [Disabled][Enabled]

Thermal Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2013 American	Megatrends, Inc.
Thermal Configuration Parameters		This value controls the
Critical Trip Point	[90 C]	temperature of the ACPI
Passive Trip Point	[85 C]	critical Trip Point in which
		the OS will shut the system
Dynamic Platform&Thermal Framework		off.
DPTF	[Disabled]	
CPU Sensor Participant		
Critical	[70 C]	
Passive	[60 C]	
Ambient Sensor Participant		
Critical	[70 C]	
Passive	[60 C]	
DDR Sensor Participant		
Critical	[70 C]	++: Select Screen
Passive	[60 C]	↑↓: Select Item
		Enter: Select
Super Debug	[Disabled]	+/-: Change Opt.
Current Logical Processor	[Disabled]	F1: General Help
Start P-State	[P0]	F2: Previous Values
Step size Power Control Setting	[25%]	F3: Optimized Defaults F4: Save & Exit
Performance Control Setting	[CORE offlining] [CORE offlining]	ESC: Exit
DPPM	[Enabled]	ESU. EXIL
	[Elighted]	
Version 2.16.1242. C	opyright (C) 2013 American M	egatrends, Inc.

IDE Configuration



CSM Configuration

Compatibility Support Module	Enable/Disable CSM Support.	
CSM Support	[Enabled]	
CSM16 Module Version	07.76	
GateA20 Active Option ROM Messages	[Upon Request] [Force BIOS]	
Boot option filter	[UEFI and Legacy]	
Option ROM execution		
Network Storage Video Other PCI devices	[Legacy] [Legacy] [Legacy] [UEF1]	<pre>++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

USB Configuration

The auto-detected values or devices are displayed in the USB Devices project. If no device is connected, showing None



Legacy USB Support [Enabled]

This item is used to enable or disable USB device. When set to the default value [Auto], the system can automatically detect whether there is a USB device exists, if so, then start the USB controller; otherwise it will not start. However, if you set this item to [Disabled], the USB controller in the system is turned off regardless of the presence or absence of the USB device. setting

options: [Disabled] [Enabled] [Auto]

XHCI HAND-OFF [Enabled]

This item and EHCI HAND-OFF, are used to select whether EFI releases control of the USB controller before the OS loads the USB driver. If you select Enabled, EFI closes XHCI (USB2.0) when entering OS.

EHCI Hand-off [Disabled]

This item is used to start an operating system that does not support the EHCI hand-off function. Setting options: [Disabled] [Enabled]. If you select Enabled, EFI closes EHCI (USB2.0) when entering OS.

USB Mass Storage Driver Support [Enabled]

USB Mass Storage Driver, setting options: [Disabled] [Enabled].

USB Transfer time-out [20sec]

This item sets the maximum time for a data transfer on the USB2.0. If the transmission is not completed within this time, the error is given to the EFI. This setting only works on EFI, no effect to

USB drive on the OS.

Device reset time-out [20sec]

This item sets the maximum time required for the storage device reset on the USB2.0. During the time, EFI checks whether the storage device can accept instructions. If the timeout occurs, the storage device is considered to be faulty.

4.3. Chipset MENU

North Bridge South Bridge	North Bridge Parameters
	++: Select Screen †1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

North Bridge



Intel ICD Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2017 American	Megatrends, Inc.
GOP Configuration GOP Driver	[Enabled]	Enable GOP Driver will unload VBIOS; Disbale it will load VBIOS
Intel IGD Configuration		19100
Integrated Graphics Device	[Enabled]	
IGD Turbo Enable Primary Display PAVC DVMT Pre-Allocated DVMT Total Gf× Mem Aperture Size DOP CG GTT Size IGD Thermal Spread Spectrum clock	[Enabled] [Auto] [LITE Mode] [64M] [256MB] [256MB] [Enabled] [2MB] [Disabled] [Disabled]	→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help
ISP Enable/Disable	[Disabled]	F1: General Help F2: Previous Values F3: Optimized Defaults
Vcc, Vnn Configuration for Power st	F4: Save & Exit	
Vcc_Vnn Config for Power state2		ESC: Exit
Version 2.17.1249. C	opyright (C) 2017 American M	egatrends, Inc.

GOP Driver

GOP Driver, setting options Enabled (default) Disabled

Integrated Graphics Device

Integrated Graphics Device, setting options Enabled (default) Disabled

Primary Display

Primary Display, setting options Auto IGD default PCI SG

PAVC

PAVC, setting options [SERPENT Mode] [LITE Mode] DVMT Pre-Allocate Set the DVMT Pre-Allocate, the default is 64MB DVMT Total Gfx Mem DVMT Total Gfx Mem, the default is 256MB

LCD Control



Primary IGFX Boot Display

Primary Display, setting options Auto(default) VGA&VGA_H1 VGA_H2 LVDS

LCD Panel Type

Panel link

Set the resolution of LVDS, the default is Single 8 1024X768

Panel color depht

Set the resolution of LVDS, the default is Single 8 1024X768

Panel link

Set the resolution of LVDS, the default is Single 8 1024X768

Back light control

Set the resolution of LVDS, the default is Single 8 1024X768

Act ive LFP

Set the resolution of LVDS, the default is Single 8 1024X768

South Bridge



Azalia HD Audio

Azalia HDMI codec Port [Enabled]

on/off HDMI Port audio output

USB Configuration

set USB port on/off

Lan Controller [Enabled]

This item is used to turn on or off the Lan controller, the default is on

Lan PXE OpROM Boot [Do not launch]

This item is used to turn on or off Lan PXE OpROM Boot, setting options [[Do not launch] [UEFI

only]

[Legacy only]

Restore AC Power Loss [Power Off]

Restore AC Power Loss, setting options [Power Off] [Power On] [Last State]

When set to [Power Off], plug the power, you need to press the power switch to boot

When set to [Power On], plug the power, regardless whether press the power switch or not, the host will boot up directly

When set to [Last State], plug the power, it will be restored to the state before the system power off, if the system work on when the power off, it will automatically boot, if it shutdown before the state, it still on the shutdown status. PCI Express Configuration

4.4. Security MENU

Aptio Setup Ut Main Advanced Chipset Se		American Megatrends, Inc.
Password Description If ONLY the Administrator's of then this only limits access only asked for when entering If ONLY the User's password is a power on password and m boot or enter Setup. In Setup have Administrator rights. The password length must be in the following range: Minimum length	to Setup and is Setup. is set, then this ust be entered to o the User will 3	Set Administrator Password
Maximum length Administrator Password User Password	20	<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>

Administrator Password

This item is used to set the BIOS system administrator password, which is required to enter the BIOS settings, In this item, press the <Enter> key, pop-up password input box, type the password, and then type again to check it.

User Password

This item is used to set the BIOS user password. The user password is to enter the system password, In this item, press the <Enter> key, pop-up password input box, type the password, and then type again to check it.

4.5. BOOT MENU

Aptio Setup Ut Main Advanced Chipset Se	<mark>ility – Copyright (C) 2017 Americar</mark> curity <mark>Boot</mark> Save & Exit	h Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State	1 [0n]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
FULL screen logo Fast Boot	[Enabled] [Disabled]	warting.
Boot Option Priorities Boot Option #1	[UEFI: Built-in EFI]	
		<pre>++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.17.	1249. Copyright (C) 2017 American ⊧	legatrends, Inc.

Setup Prompt Timeout [1]

Set the screen prompt waiting time to start, you need to type the number of seconds

Bootup NumLock State [On] Set the numeric keypad on after the start, setting options: [On] [Off]

Full Screen Logo[Disabled]Set the full-screen LOGO display on / off, settings options: [Enabled] [Disabled]

Fast Boot [Disabled]

Set Fast Boot function, the so-called fast boot is the minimum initialization device can start, setting options: [Enabled] [Disabled]

Boot Option Priorities Set the priority of the startup options

4.6. Save&Exit MENU

Aptio Setup Main Advanced Chipset				American	Megatrends, Inc.
Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Options Save Changes Discard Changes Restore Defaults Save as User Defaults Restore User Defaults					Exit system setup after saving the changes.
Boot Override UEFI: Built-in EFI Shell					<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 2.1	.7.1249. Co	pyright (C) 2017 Am	erican Me	egatrends, Inc.

Save Changes and Exit Discard Changes and Exit Launch EFI Shell From filesystem device

5. LCD Surface Cleaning

1. How to clean the LCD surface properly?

- Do not spray any liquids on the LCD screen directly, and do not use paper towels,
 this can cause the LCD screen to become scratched.
- Always apply the solution to your cloth first, not directly to the parts you are cleaning.
 You want to avoid dripping the solution directly into your computer or laptop.
- Stroke the cloth across the display in one direction, moving from the top of the display to the bottom.
- 2. What are some of the basic supplies needed to clean an LCD screen?
 - A soft cotton cloth. When cleaning the LCD screen it is important to use a soft cotton cloth, rather than an old rag. Some materials, such as paper towels, could cause scratches and damage the LCD screen.
 - Solution of water and isopropyl alcohol. This solution can be used along with the soft cotton cloth.
 - Computer wipes. Only use these if they specifically state on the package they are designed for LCD laptop screens. Computer wipes can come in handy for fast clean-ups or when you want to avoid mixing up a cleaning solution yourself.
- 3. What types of cleaners are acceptable?
 - ♦ Water
 - ♦ Vinegar (mixed with water)
 - ♦ Isopropyl Alcohol
- NOTICE: The following cleaners are unacceptable:
 - ♦ Acetone
 - ♦ Ethyl alcohol
 - ♦ Ethyl acid
 - ♦ Ammonia
 - ♦ Methyl chloride

CE Notice

This device complies with the requirements of the CE directive.'

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into 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.

Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

WEEE Notice

This appliance is labeled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.



ZK Building, Wuhe Road, Gangtou, Bantian, Buji Town, Longgang District, Shenzhen China 518129

Tel: +86 755-89602345

Fax: +86 755-89602394

www.zkteco.com



© Copyright 2017. ZKTeco Inc. ZKTeco Logo is a registered trademark of ZKTeco or a related company. All other product and company names mentioned are used for.