SI-60E

User Manual



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Safety Information

Your SI-60E is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions

Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water.
- Set up the system on a stable surface. Do not secure the system on any unstable plane.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation. Never insert objects of any kind into the ventilation openings.
- This system should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Use this product in environments with ambient temperatures between -40°C and 75°C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.
- DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE • STORAGE TEMPERATURE MAY GO BELOW -50° C (-58° F) OR ABOVE 85° C (185° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

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Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your system.
- When the system is turned off, a small amount of electrical current still flows. Always unplug all power, and network cables from the power outlets before cleaning the system.
- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
 - > The power cord or plug is damaged.
 - Liquid has been spilled into the system.
 - The system does not function properly even if you follow the operating instructions.
 - > The system was dropped or the cabinet is damaged.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

WARNING HAZARDOUS MOVING PARTS KEEP FINGERS AND OTHER BODY PARTS AWAY



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CHAPTER 1 INTRODUCTION

1.1 General Description

The "Signature Book[™]" SI-60E is a professional digital signage system powered by 4th Gen. Intel[®] Core[™] I Desktop Processors with AMD Radeon[™] E8860 graphics. The SI-60E integrates 12 HDMI ports with EDID emulation function and one DVI-I for console. Additionally, SI-60E has two quad-channel DDR3L-1600 sockets to provide up to 32GB of memory. It also has dual Gigabit Ethernet, dual extended SSD drive, Intel AMT for remote control and IBASE's iSMART green technology for power on/off scheduling and power resume functions. The ruggedized design player's chassis that provides passive cooling for better system reliability and quiet operation.



SI-60E overview



1.2 System Specifications

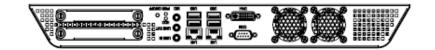
1.2.1 Hardware Specifications

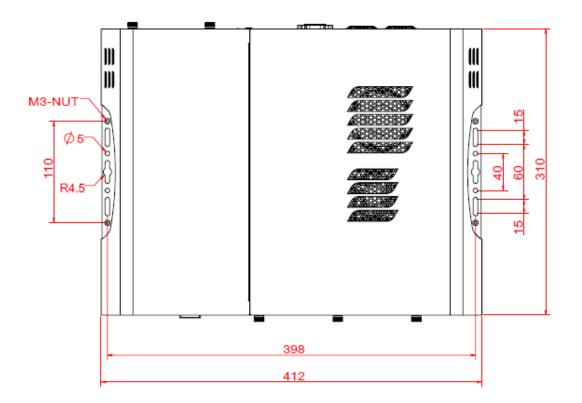
Model Name	SI-60E	
System Mainboard	MBD60E	
CPU	4th Generation Intel® Core™ i7/i5/i3 and Pentium® QC/DC	
	processors; Up to 3.5GHz	
Memory	4x DDR3 1600 MHz, Max. 32GB	
I/O Interface	12x HDMI with EDID emulation function	
	1x DVI-I for console	
	4x USB 3.0 ports	
	2x RJ45 for LAN	
	1x RJ45 for RS232	
	3x Microjack audio connectors for Line-in / Line-out/MIC-in	
	Power LED for power on/off & HDD	
	1x power button	
	1x AC power inlet	
Storage	1x mSATA	
	2x SATA 3.0 2.5" HDD Dock (support Raid 1)	
Expansion Slots	Dual mPCI-E(x1) slots for WiFi, 3G/LTE, capture card and TV	
	tuner options	
Construction	SGCC	
Mounting	Standard system bracket	
Dimensions	412mm(W) x 310mm(D) x 47mm(H)	
	16.22"(W) x 12.2"(D) x 1.85"(H)	
Operating	0°C~ 45°C (32°F~113°F)	
Temperature		
Storage	-20°C ~ 80°C (-4°F~176°F)	
Temperature		
Relative Humidity	5~90% @ 45°C, (non-condensing)	
Vibration	mSATA: 5 grms / 5~500Hz / random operation	
RoHS	Available	
Certification	CE, FCC, CCC, UL	

·This specification is subject to change without prior notice.



1.2.2 Dimensions



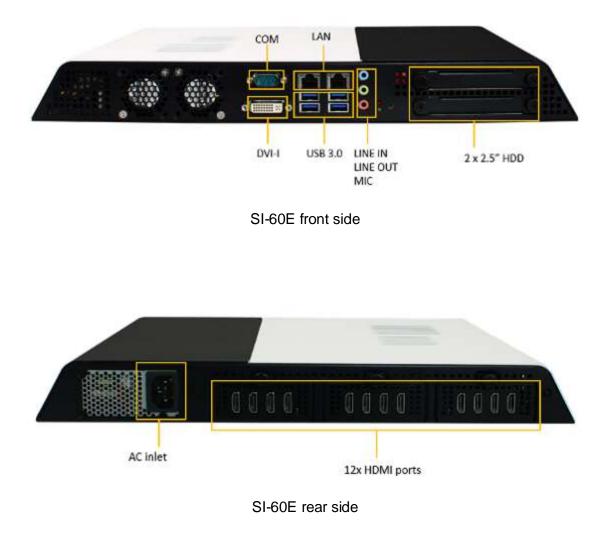




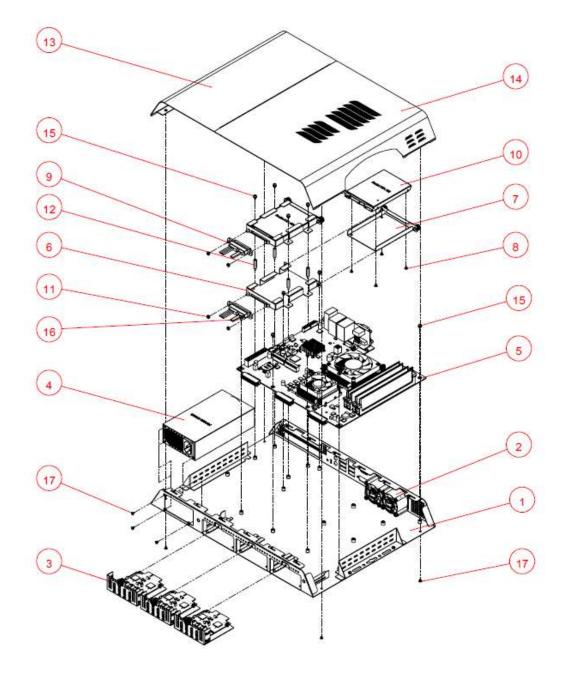
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1.2.3 I/O View







1.3 Exploded View of the SI-60E Assembly

Part No.	Description	Part No.	Description
1	SI-60E_BASE	2	4028_fan
3	HDMI Board Module	4	Power module
5	SI-60E Main Board	6	SI-60E_HDD-TRAY
7	SI-60E_HDD-BRK	8	Screw F Type M3*0.5
9	SATA Cable	10	2.5" SATA HDD
11	M3 nut	12	M3 double screw bolt
13	SI-60E_top-cover_L	14	SI-60E_top-cover_r
15	Screw PW Type M3*0.5	16	M3 screw
17	Screw F Type M3*0.5 BK		

1.3.1 Parts Description



1.4 Packing List

Item No.	Description	Qty
1	Driver CD	1
2	Power adaptor	1
3	Power cord	1

1.4.1 Optional Items module

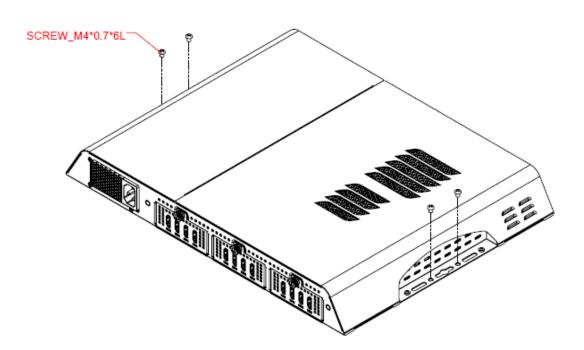
WiFi Solution	Description		
WiFi module	Wireless; PCI-E Mini Card 802.11B/G/N [AW-NE238H] (A008WLAWNE238H000P)		
External Antenna 2pcs	WiFi Antenna (A055RFA02C2M20800P)	Contraction of the local division of the loc	
Internal cable 1pcs	Internal Antenna 300mm [BTC130-1-70B-300] RoHS (A055RFA0000020100P)	1.1	
Internal cable 1pcs	Internal Antenna 200mm [BTC130-1-70B-200-1] RoHS (A055RFA0000020000P)		
Screw, 2pcs	Screw; A44-N NI 3.4 NYLOK M2*L3.8 P0.4mm [LHS] RoHS (H02203A0442200N00P)		
Bracket, -1set	Component BOM; MPCIE-EXT V-B2 Bracket (SC2MPCIEEXT0B2100P)		
3G Solution	Description		
3G	Wireless; 3.75G UMTS/HSPA [ZU202] RoHS (A008WIRELESS00520P)		
3G+GPS	Wireless; 3.75G UMTS/HSPA & GPS Module [ZU200] RoHS (A008WIRELESS00510P)	Sections -	
WW-350U	Wireless; 3.75G UMTS/HSPA [NAVISYS WW-350U] RoHS (A008WIRELESS00530P)	and the second sec	
Cable	Cable; SMA IPX Cable For 3G 30CM [RF11030A] RoHS (A012INTENAL010000P)		
Antenna	3G [ANT0921Q2P] RoHS (A055ANT0921Q2P000P)		
COM Port Cable	Description		
EXT-311	Cable; EXT-311 2-HD 10C 150CM; DSUB-9F => RJ45-10M RoHS (C501EXT3110A12000P)		
EXT-312	Cable; EXT-312 2-HD 10C 150CM; DSUB-9M => RJ45-10M RoHS (C501EXT3120A12000P)		

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1.5 HARDWARE INSTALLATION

1.5.1 Mounting Installation

1. Please install SI-60E to the intended location using 4x M4*0.7*6L screws, as shown in the picture.





1.5.2 Installing the storage

1. Remove the two screws on the HDD cover and draw the HDD out.





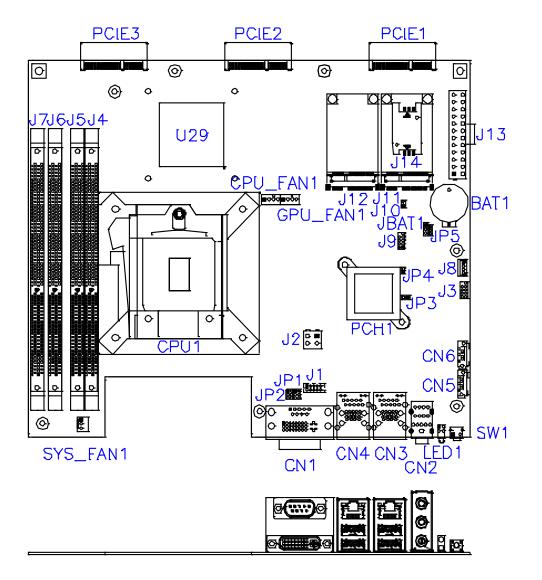
2. Install the HDD/SSD to the HDD bracket with 4 screws.



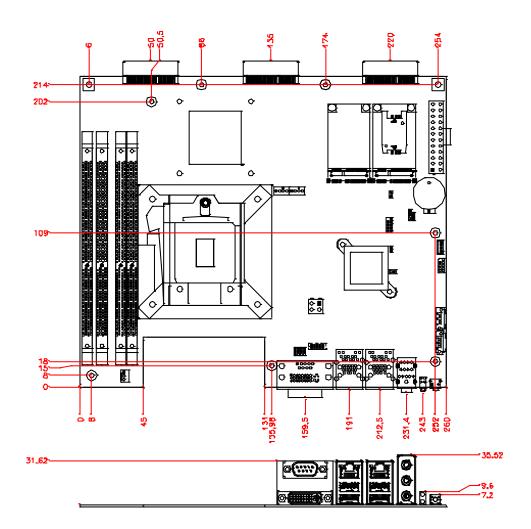
CHAPTER 2 MOTHERBOARD INTRODUCTION

2.1 Introduction

MBD60E Jumpers and Connectors







IMBD60E Board Dimensions

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2.2 Installations

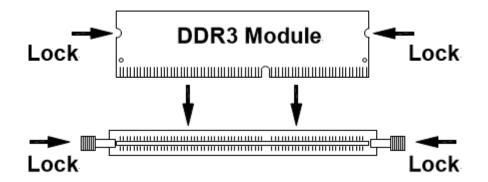
2.2.1 Installing the Memory

The MBD60E board supports four DDR3 memory modules for a maximum total of 32GB in DDR3 SODIMM memory type.

Installing and Removing Memory Modules

To install the DDR3 modules, locate the memory slot on the board and perform the following steps:

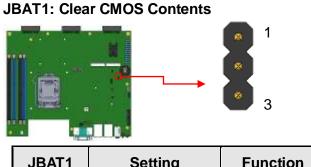
- 1. Hold the DDR3 module so that the key of the DDR3 module aligned with that on the memory slot.
- 2. Gently push the DDR3 module in an upright position until the clips of the slot close to hold the DDR3 module in place when the DDR3 module touches the bottom of the slot.
- 3. To remove the DDR3 module, press the clips with both hands.





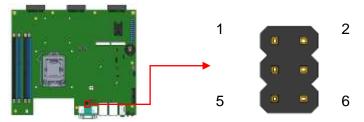
2.3 Setting the Jumpers

Jumpers are used on MBD60E to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs. The following lists the jumpers and connectors on MBD60E and their respective functions.



JBAT1	Setting	Function	
	Pin 1-2	Normal	
123	Short/Closed	Normal	
	Pin 2-3	Clear CMOS	
123	Short/Closed	Clear CMOS	

JP1: COM2 RS232 RI/+5V/+12V Power Setting

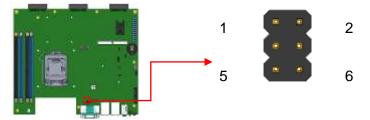


JP1	Setting	Function
	Pin 1-3	121/
1 0 0 2	Short/Closed	+12V
	Pin 3-4	Ы
5 🗖 🗖 6	Short/Closed	RI
	Pin 5-3	. 5)/
	Short/Closed	+5V

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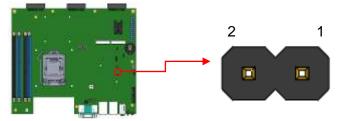
14

JP2: COM1 RS232 RI/+5V/+12V Power Setting



JP2	Setting	Function
	Pin 1-3	+12V
1 0 0 2	Short/Closed	+12V
	Pin 3-4	Ы
5 0 0 6	Short/Closed	RI
	Pin 5-3	. 5) (
	Short/Closed	+5V

JP3: Flash Descriptor Security Override (Factory use only)





2.4 Connectors on MBD60E

J1: COM2 Connector [HRS DF11-10DP-2DSA(08)]

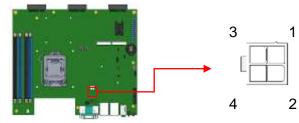
			9 10
Signal Name	Pin #	Pin #	Signal Name
Data carrier detect	1	2	Receive data
Transmit data	1 3	2 4	Receive data Data terminal ready
	•		

9

10

Not Used

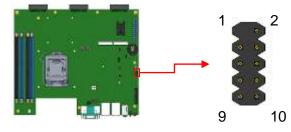
J2: ATX +12V Jack [HAOGUO ATX4PT-NY46]



Pin #	Signal Name
1	Ground
2	Ground
3	DC_IN
4	DC_IN

Ring indicator

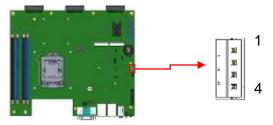
J3: For SPI Debug tools Pin Header



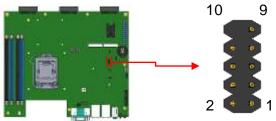
J4, J5, J6, J7 DDR III Socket



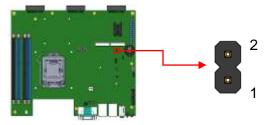
J8: MCU Flash Connector (factory use only)



J9: Debug Port Connector (Factory use only)



J10: Reset Pin Header



J11: Mini PCIe Slot (Full size with SIM Card)

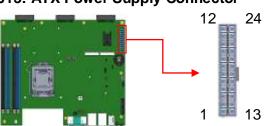




J12: Mini PCle Slot (Full size with mSATA)

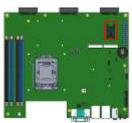


J13: ATX Power Supply Connector

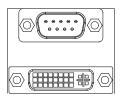


Signal Name	Pin #	Pin #	Signal Name
3.3V	13	1	3.3V
-12V	14	2	3.3V
Ground	15	3	Ground
PS-ON	16	4	+5V
Ground	17	5	Ground
Ground	18	6	+5V
Ground	19	7	Ground
-5V	20	8	Power good
+5V	21	9	5VSB
+5V	22	10	+12V
+5V	23	11	+12V
Ground	24	12	+3.3V

J14: SIM Card Slot



CN1: COM1 / DVI-I Connector



CN2: Audio Jack

0000

CN3: RTL8111G-CG /USB3.0 Connector

F

CN4: I218LM / USB3.0 Connector



CN5/6:SATA 3 Connector



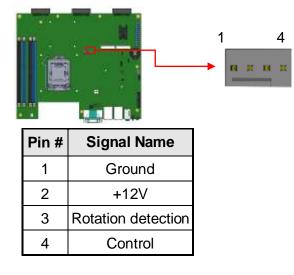


		1
Pin #	Signal Name	
1	Ground	
2	+12V	
3	Rotation detection	
4	Control	

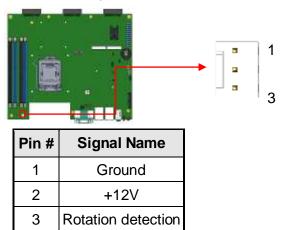
CPU_FAN1: CPU Fan Power Connector

4

GPU_FAN1: GPU Fan Power Connector



SYS_FAN1: System Fan1 Power Connector



SW1: Power On Button



LED1: PWR (Green)/ HDD LED (Red)



PCIE1, PCIE2, PCIE3: DP Signal from AMD E8860 to IDD100





CHAPTER 3 BIOS SETUP

This chapter describes the different settings available in the AMI BIOS that comes with the board. The topics covered in this chapter are as follows:

3.1 BIOS Introduction

The BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

3.2 BIOS Setup

The BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the BIOS is immediately activated. Pressing the key immediately allows you to enter the Setup utility. If you are a little bit late pressing the key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

Press to Enter Setup

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Warning: It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.

Main Settings

Aptio Setup Utility - Copyright © 2012 American Megatrends, Inc.

Main Adva	anced	Chipset	Boot	Security	Save & Exit
System Languag	e	[En	glish]		
				→ ←Select	
System Date		[Tue	9	↑↓Select Enter: Se	
System Time		01/2	20/2009]	+- Change	L
		[21:	52:06]	F1:Genera F2:Previo	us Values
Access Level		Adm	ninistrator	F4: Save	
				ESC: Exit	

System Language

Choose the system default language.

System Date

Set the Date. Use Tab to switch between Data elements.

System Time

Set the Time. Use Tab to switch between Data elements.



Advanced Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Main	Advanced	Chipset	Boot	Security	Save & Exit
 ACPI Se Trusted Wake up CPU Co SATA Co Shutdow 			Boot	→ ←Selec ↑ ↓ Sele Enter: +- Chan F1:Gene	ct Screen ect Item Select ge Opt. ral Help
 ► USB Co ► F81846 	onfiguration onfiguration Super IO Configu H/W Monitor	ration		F3: Opt	ious Values imized Defaults e & Exit it

ACPI Settings

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Main	Advanced	Chips	et Boot	Secu	rity Save & Exit
ACPI Setti	ngs				→ ←Select Screen ↑ ↓ Select Item Enter: Select
ACPI Slee	p State	S3	only (Suspend	to)	+- Change Opt. F1:General Help
Lock Lega S3 Video F	cy Resources Repost	Disat Disat			F2:Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

ACPI Sleep State

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

Lock Legacy Resources

Enables or Disables Lock of Legacy Resources

S3 Video Repost

Enable or Disable S3 Video Repost



Trusted Computing

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Main	Advanced	Chipset	Boot	Security	Save & Exit
Configur	ation			→ ←Sele	ct Screen
Security	Device Support		Disabled	↑↓Sele	ect Item
				Enter:	
				+- Chan	2 1
Current	Current Status Information				eral Help
Curron					rious Values
SUPPOR	RT TURNED OFF			F3: Opt	imized Defaults
	-			F4: Sav	re & Exit
				ESC: Ex	it

Security Device Support

Enables or disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

TPM State

Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.

Pending operation

Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.

Wake up event settings

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Main	Advanced	Chipset	Boot	Security	Save & Exit
Wake on P	CIE Wake Ever	nt	Disabled	↑↓Se Enter +- Cha F1: G F2: P F3: 0	lect Screen elect Item : Select ange Opt. eneral Help revious Values ptimized Defaults ave & Exit Exit

Wake on PCIE Wake Event

The options are Disabled and Enabled.



CPU Configuration

This section shows the CPU configuration parameters.

Main Advanced	Chipset	Boot	Se	curity	Save & Exit
CPU Configuration					
Intel(R) Core(TM) i7-4770	S CPU @ 3.	10GHz			
CPU Signature	30	06c3			
Processor Family	6				
Microcode Patch	1.	7			
FSB Speed	10	00 MHz			
Max CPU Speed	3	100 MHz			
Min CPU Speed	8	00 MHz			
CPU Speed	3	500 MHz			
Processor Cores	4				
Intel HT Technology	S	upported			
Intel VT-x Technology	S	upported			
Intel SMX Technology	S	upported			
64-bit	S	upported			
EIST Technology	S	upported			
Hyper-threading	E	nabled			
Active Processor Cores	A	II			
Overclocking lock	D	isabled			
Limit CPUID Maximum	D	isabled			act Caroon
Execute Disable Bit	D	isabled			ect Screen ect Item
Intel Virtualization Techno	ology D	isabled			Select nge Opt.
Hardware Prefetcher	D	isabled		F1: Gen	neral Help
Adjacent Cache Line Pref	etch D	isabled		F3: Op	evious Values timized Defaults
EIST	E	nabled		F4: Sar ESC: E:	ve & Exit xit
Turbo Mode	E	nabled			

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Hyper-threading

Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.

Active Processor Cores

Number of cores to enable in each processor package.

Overclocking lock

FLEX_RATIO(194) MSR

Limit CPUID Maximum

Disabled for Windows XP

Execute Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)

Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology

Hardware Prefetcher

Enable the Mid Level Cache (L2) streamer prefetcher.

Adjacent Cache Line Prefetch

Enable the Mid Level Cache (L2) prefetching of adjacent cache lines.

EIST Enable/Disable Intel Speedstep

Turbo Mode

Turbo Mode.



SATA Configuration

Main Advanced	Chipset Boot	Security	Save & Exit
SATA Controller(s) SATA Mode Selection SATA Controller Speed	Enabled AHCI Default		
Serial ATA Port 0 Software Preserve Port 0 Hot Plug	Empty Unknown Enabled Disabled		
Serial ATA Port 1 Software Preserve Port 1 Hot Plug Serial ATA Port 2 Software Preserve Port 2 Hot Plug	Empty Unknown Enabled Disabled Empty Unknown Enabled Disabled		
Serial ATA Port 3 Software Preserve Port 3 Hot Plug	Empty Unknown Enabled Disabled		
Serial ATA Port 4 Software Preserve Port 4 Hot Plug	Empty Unknown Enabled Disabled	→ ←Selec ↑ ↓ Selec Enter: S +- Chang F1:Gener	elect e Opt.
Serial ATA Port 5 Software Preserve Port 5 Hot Plug	Empty Unknown Enabled Disabled	F2:Previ	ous Values mized Defaults e & Exit

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SATA Controller(s)

Enable or disable SATA Device.

SATA Mode Selection

Determines how SATA controller(s) operate.

- (1) IDE Mode.
- (2) AHCI Mode.
- (3) RAID Mode.

SATA Controller Speed

Indicates the maximum speed the SATA controller can support.

Port 0

Enable or Disable SATA Port

Hot Plug

Designates this port as Hot Pluggable.

Shutdown Temperature Configuration

Main	Advanced	Chipset	Boot Secu	rity Save & Exit
APCI Sh	utdown Temper	ature	Disabled	<pre>→ ←Select Screen ↑ ↓ 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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ACPI Shutdown Temperature

The default setting is Disabled.

iSmart Controller 3.1

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Main	Advanced	Chipset	Boot	Secu	urity	Save & Exit
iSmart Co	ontroller 3.1					
Power-Or	n after Power fa	ilure	Enable			
PWR Res	sume Delay		Enable			
PWR Res	sume Delay Val	ue(Seconds)	5		→ ←Sel	lect Screen
Temperat	ure Guardian		Disable			elect Item
						: Select ange Opt.
Schedule	Slot 1		None		F1:Ge	neral Help evious Values
Schedule	Slot 2		None		F3: 0	ptimized Defaults
					F4: S ESC:	ave & Exit Exit

Power-On after Power failure

This field sets the system power status whether Disable or Enable when power returns to the system from a power failure situation.

Temperature Guardian

Generate the reset signal when system hangs up on POST.

Schedule Slot 1 / 2

Setup the hour/minute for system power on.



AMT Configuration

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Main	Advanced	Chipset	Boot	Securit	y Save & Exit
	T tkey Pressed election Screen		Enable Disable Disable	ed	
Hide Un- Un-Confi Amt Wai	-	confirmation	Disable Disable 0		
Activate USB Cor	Remote Assista nfigure	nce Process	Disable Enable	ed	←Select Screen
PET Prog AMT CIR Watchdo	A Timeout		Enable 0 Disable	E +	↑↓Select Item Enter: Select Change Opt. F1:General Help
OS T	-		0 0	E E	72:Previous Values 73: Optimized Defaults 74: Save & Exit ESC: Exit

Intel AMT

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.

BIOS Hotkey Pressed

OEMFLag Bit 1: Enable/Disable BIOS hotkey press.

AMT Configuration

OEMFLag Bit 2: Enable/Disable MEBx selection screen.

Hide Un-Configure ME Configuration

OEMFlag Bit 6: Hide Un-Configure ME without password Confirmation Prompt

Un-Configure ME

OEMFlag Bit 15: Un-Configure ME without password.

Amt Wait Timer

Set timer to wait before sending ASF_GET_BOOT_OPTIONS.

Activate Remote Assistance Process

Trigger CIRA boot.

USB Configure

Enable/Disable USB Configure function.

PET Progress

User can Enable/Disable PET Events progress to receive PET events or not.

Watchdog Timer

Enable/Disable Watchdog Timer.

USB Configuration

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Main	Advanced	Chipset	Boot	Secu	urity	Save & Exit
USB Co	nfiguration					
USB Mo	dule Version		8.10.28			
USB De	vices:					
Legacy l	JSB Support		Enabled			
USB3.0	Support		Enabled			
XHCI Ha	ind-off		Enabled			
EHCI Ha	ind-off		Enabled			
USB Ma	ss Storage Drive	er Support	Enabled		→ ←Se	lect Screen
						lect Item
USB har	dware delays ar	nd time-outs:				: Select ange Opt.
USB Tra	nsfer time-out		20 sec			neral Help evious Values
Device r	eset tine-out		20 sec		-	ptimized Defaults ave & Exit
Device p	ower-up delay		Auto		ESC:	



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.

USB3.0 Support

Enable/Disable USB3.0 (XHCI) Controller support.

XHCI Hand-off

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

EHCI Hand-off

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

USB Mass Storage Driver Support

Enable/Disable USB Mass Storage Driver Support.

USB Transfer time-out

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

Device reset tine-out

USB mass Storage device start Unit command time-out.

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 100ms, for a Hub port the delay is taken from Hub descriptor.

F81846 Super IO Configuration

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e & Exit
ct Screen ct Item
Select
ge Opt. cal Help ious Values imized Defaults e & Exit
ral H ious imize

Serial Port Configuration

Set Parameters of Serial Ports. User can Enable/Disable the serial port and Select an optimal settings for the Super IO Device.



F81846 H/W Monitor

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Main	Advanced	Chipset	Boot	Sec	curity	Save & Exit
PC Heal	th Status					
CPU ten	nperature		+34 C			
SYS terr	perature		+29 C			
FAN1 S	beed		2170 RPM			
FAN2 S	beed		2170 RPM			
FAN3 S	beed		2170 RPM			
+5V			+5.087 V			lect Screen lect Item
+12V			+12.056 V		Enter	: Select
Fan 1 sr	nart fan control		50 C		F1:Ger	nge Opt. neral Help
Fan 1 sr	nart fan control		50 C			evious Values otimized Defaults
Fan 1 sr	nart fan control		50 C		F4: Sa ESC: E	ave & Exit Exit

Temperatures/Voltages

These fields are the parameters of the hardware monitoring function feature of the motherboard. The values are read-only values as monitored by the system and show the PC health status.

Smart SYS_FAN1/CPU_FAN1 Function

This field enables or disables the smart fan feature.

Disabled (default)

- 50 °C
- 60 °C
- 70 °C
- **30 ℃**

Chipset Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Main	Advanced	Chipset	Boot	Security	Save & Exit	
	IO Configuratior m Agent (SA) C					

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PCH-IO Configuration

This section allows you to configure the North Bridge Chipset.

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Main	Advanced	Chipset	Boot	Security	Save & Exit
1.8.0.0	RC Version SKU Name Rev ID	Q87 05/C2			
► USB C► PCH APCH LAN	press Configura onfiguration zalia Configura Controller ke on LAN			↑↓Se Enter +- Ch F1:Ge F2:Pr F3: C	elect Screen elect Item c: Select mange Opt. eneral Help revious Values Optimized Defaults Save & Exit Exit

PCH LAN Controller

Enable or disable onboard NIC.

Wake on LAN

Enable or disable integrated LAN to wake the system. (The Wake On LAN cannot be disabled if ME is on at Sx state.)



PCI Express Configuration

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Main	Advanced	Chipset	Boot	Sec	urity	Save & Exit
РСІ Ехр	ress Configuration	on				
DMI Link PCle-US	< ASPM Control < Extended Sync B Glitch W/A ive Decode	h Control	Enab Disat Disat Disat	bled		
 PCIE PCIE PCIE PCIE PCIE PCIE 	Express Root Po Express Root Po Express Root Po Express Root Po Express Root Po CI-E Port 6 is ass Express Root Po Express Root Po	rt 2 rt 3 rt 4 rt 5 signed to LAN rt 7			<pre>↑ ↓ Sel Enter: +- Chan F1:Gen F2:Pre F3: Op</pre>	elect Screen .ect Item Select nge Opt. eral Help vious Values timized Defaults ve & Exit xit

DMI Link ASPM Control

The control of Active State Power Management on both NB side and SB side of the DMI Link.

DMI Link Extended Synch Control

The control of Extended Synch on SB side of the DMI Link.

PCIe-USB Glitch W/A

PCIe-USB Glitch W/A for bad USB device(s) connected behind PCIE/PEG port.

Subtractive Decode

Enable or disable PCI Express Subtractive Decode.

USB Configuration

Main	Advanced	Chipset	Boot	Security	Save & Exit
USB Co	nfiguration				→ ←Select Screen
USB Pre	econdition		Disal	bled	<pre>↑ ↓ Select Item Enter: Select</pre>
xHCI Mo	ode		Auto		+- Change Opt. F1:General Help F2:Previous Values
USB Po	rts Per-Port Disa	able Control	Disal	bled	F3: Optimized Defaults F4: Save & Exit ESC: Exit

USB Precondition

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

xHCI Mode

Mode of operation of xHCI controller.

USB Ports Per-Port Disable Control

Control each of the USB ports (0~13) disabling.

PCH Azalia Configuration

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Main	Advanced	Chipset	Boot	Security	Save & Exit	
PCH Az	alia Configuratio	n				
Azalia			Auto			

Azalia

Control Detection of the Azalia device.

Disabled = Azalia will be unconditionally disabled.

Enabled Azalia will be unconditionally Enabled.

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



System Agent (SA) Configuration

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Main	Advanced	Chipset	Boot	Securi	ty Save & Exit
System	Agent Bridge Na	ame	ŀ	laswell	
System Agent RC Version		1.8.0.0			
VT-d Capability		Support	ed		
VT-d			Enablec	1	→ ←Select Screen ↑ ↓ Select Item Enter: Select +- Change Opt. F1:General Help
► Grap	hics Configuration	on			F2:Previous Values F3: Optimized Defaults
► Mem	ory Configuratio	n			F4: Save & Exit ESC: Exit

VT-d

Check to enable VT-d function on MCH.

Graphics Configuration

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Main	Advanced	Chipset	Boot	Se	curity	Save & Exit
Graphics	Configuration					ect Screen ect Item
Primary [Display	PEC	3			Select nge Opt.
Primary F	PEG	Auto	þ	I	71:Gene	eral Help
Primary F	PCIE	Auto)			vious Values timized Defaults
Internal G	Graphics	Disa	abled		54: Sav ESC: E≯	ve & Exit kit

Primary Display

Select which of IGFX/PEG/PCI graphics device should be Primary Display or select SG for switchable Gfx.

Primary PEG

Select PEG0/PEG1/PEG2/PEG3 Graphics device should be Primary PEG.

Primary PCIE

Select PCIE0/PCIE1/PCIE2/PCIE3/PCIE4/PCIE5/PCIE6PCIE7 Graphics device should be Primary PCIE.

Internal Graphics

Keep IGD enabled based on the setup options.

Memory Configuration

Main	Advanced	Chipset	Boot	Secur	ity Save & Exit
Memory	Information				
Memory	RC Version		1.8.0.0		
-	Frequency		1600 MHz		
Total Me	emory		32768MB ((DDR3)	
Memory	Voltage		1.50V		
DIMM#C)		8192 MB (DDR3)	→ ←Select Screen ↑↓Select Item
DIMM#1			8192 MB (DDR3)	Enter: Select +- Change Opt.
DIMM#2	2		8192 MB (DDR3)	F1:General Help
DIMM#3	3		8192 MB (DDR3)	F2:Previous Values F3: Optimized Defaults
					F4: Save & Exit ESC: Exit

Aptio Setup Utility



Boot Settings

This section allows you to configure the boot settings.

Main Advanced C	chipset Boot Se	curity Save & Exit
Boot Configuration Setup Prompt Timeout Bootup NumLock State	1 On	
Quiet Boot Fast Boot Boot Mode select	Disabled Disabled LEGACY	
FIXED BOOT ORDER Priori Boot Option #1 Boot Option #2 Boot Option #3 Boot Option #4 Boot Option #5 Boot Option #6 Boot Option #7	ties Hard Disk CD/DVD USB Hard Disk USB CD/DVD USB Key USB Floppy Network	→ ←Select Screen ↑ ↓ Select Item Enter: Select +- Change Opt. F1:General Help
 CSM16 parameters CSM parameters 		F1.General help F2:Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Select the keyboard NumLock state

Quiet Boot

Enables or disables Quiet Boot option

Fast Boot

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

Boot Mode select

Select boot mode LEGACY/UEFI

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FIXED BOOT ORDER Priorities

Sets the system boot order

CSM parameters

This section allows you to configure the boot settings.

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Main	Advanced	Chipset	Boot	Security	Save & Exit
Launch	CSM		Enabled		
Boot opt	ion filter		UEFI and L	_egacy	
Launch I	PXE OpROM polic	у	Do not laur	nch	
Launch	Storage OpROM p	olicy	Legacy on	ly	→ ←Select Screen ↑↓Select Item
Launch Video OpROM policy		Legacy only		Enter: Select	
Other P0	CI device ROM pric	prity	Legacy Op	ROM	+- Change Opt. F1:General Help F2:Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Launch CSM

This option controls if CSM will be launched

Boot option filter

This option controls what devices system can boot to

Launch PXE OpROM policy

Controls the execution of UEFI and Legacy PXE OpROM

Launch Storatge OpROM policy

Controls the execution of UEFI and Legacy Storage OpROM

Launch Video OpROM policy

Controls the execution of UEFI and Legacy Video OpROM

Other PCI device ROM priority

For PCI devices other than Network, Mass storage or Video defines which OpROM to launch



Security Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Main	Advanced	Chipset	Boot	Securit	y Save & Exit
Passwor	d Description				
If ONLY	the Administrator'	s password is set,			
then this	s only limit access	to Setup and is			
only aske	ed for when enteri	ng Setup.			
If ONLY	the User's passwo	ord is set, then this	8		
is a powe	er on password ar	d must be entered	d to boot		
or enter	Setup. In Setup th	e User will			
have Adr	ministrator rights.				
The pass	sword length must	be			
in the fol	owing range:				→ ←Select Screen ↑↓Select Item
Minimum	length		3		Enter: Select
Maximun	n length		20		+- Change Opt. F1:General Help
					F2:Previous Values F3: Optimized Defaults
Administ	Administrator Password				F4: Save & Exit
User Pas	ssword				ESC: Exit

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Administrator Password

Set Administrator Password

User Password

Set User Password

Save & Exit Settings

Main	Advanced	Chipset	Boot	Security	Save & Exit
Discard (Save Ch	anges and Exit Changes and Exit anges and Reset Changes and Rese	t			
Save Op Save Ch Discard (anges			$\uparrow \downarrow Sel$ Enter:	ect Screen Lect Item Select nge Opt.
	Defaults User Defaults User Defaults			F2:Pre F3: Op	eral Help vious Values timized Defaults ve & Exit xit

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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 Defaults 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.



CHAPTER 4 DRIVERS INSTALLATION

The Intel Chipset Drivers should be installed first before the software drivers to enable Plug & Play INF support for Intel chipset components. Follow the instructions below to complete the installation.

IMPORTANT NOTE:

After installing your Windows operating system, you must install first the Intel Chipset Software Installation Utility before proceeding with the drivers installation.

4.1 Intel Chipset Software Installation Utility

1. Insert the DVD that comes with the board. Click **System** and then **SI-60E Series Products**.

Inside	This CD
System	SI-12 Series Products SI-606 Series Products SI-60E Series Products SI-64 Series Products SI-83 Series Products SE-92 Series Products

2. Click Intel(R) Chipset Software Installation Utility.

Inside	Version : SI-2.21
System	Intel(R) Chipset Software Installation Utility AMD Radeon E8860 Graphics Driver Realtek High Definition Audio Driver Intel(R) I21x Gigabit Network Driver Intel(R) Management Engine(ME) Driver Intel(R) USB 3.0 eXtensible Host Controller Drive Realtek RTL8111G LAN Driver IDD100 Driver and Utility

3. When the Welcome screen to the Intel® Chipset Device Software appears, click *Next* to continue.





4. Click *Accept* to accept the software license agreement and proceed with the installation process.





5. On the Readme File Information screen, click *Install* to continue the installation.

ntel(R) Chipset Device Software Readme File Information	
<pre>* Product: Intel(R) Chipset Device Software * Version: 10.0 * Target PCH/Chipset: Mixed Platform * Date: 2014-04-24</pre>	0.00
NOTE: For the list of supported chipsets, please refer to the Release Notes	
This document contains the following sections: 1. Overview 2. System Requirements 3. Contents of the Distribution Package 3A. Public and NDA Configurations	
Back Install Cancel	2

6. The Setup process is now complete. Click *Finish* to restart the computer and for changes to take effect.

Intel(R) Chipset Device Software Completion	(intel)
You have successfully installed the following product:	
Intel(R) Chipset Device Software	
Press Finish to complete the setup process.	
View Log Files	
	Finish

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4.2 AMD Radeon E8860 Graphics Driver

1. Insert the DVD that comes with the board. Click *System* and then *SI-60E Series Products*. Click *AMD Radeon E8860 Graphics Driver*.

Inside	This CD Version : SI-2.21
System	Intel(R) Chipset Software Installation Utility AMD Radeon E8860 Graphics Driver Realtek High Definition Audio Driver Intel(R) I21x Gigabit Network Driver Intel(R) Management Engine(ME) Driver Intel(R) USB 3.0 eXtensible Host Controller Driver Realtek RTL8111G LAN Driver IDD100 Driver and Utility

- 2. When the Welcome screen appears, click *Next* to continue.
- 3. Select the language you would like to be displayed and click Next.

1.18	nager - Version: 08.00.0916
/elcome	
Welcome	✓Welcome Catalyst™ Install Manager is used to install and update the software for your graphics products
	-Language Support Which language would you like Catalyst*** Install Manager to display?
CATALYST TECHNOLOGY	English
	http://www.amd.com
	Next > Cancel



4. Click *Install* to continue the installation process.

AMD - Catalyst™ Ir	nstall Manager - Version: 08.00.0916
Select In	stallation Operation
What do you w	ent to do?
3 2	Install Allow users to install AMD software components
	Uninstall Remove AMD software components
	http://www.amd.com
	Cancel

Welcome	- Welcome Select Express or Custom Install and then click Next:
Analyze	Express
Customize	Custom
Install	Default Installation Location:
Finished	
CATALYST TECHNOLOGY	

5. Select Express and the installation location and click Next.

Click Accept to accept the End User License Agreement.

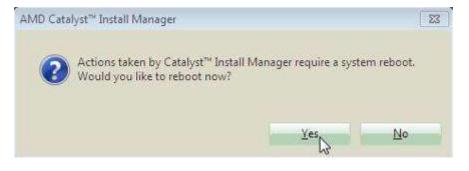






7. Setup complete. Click *Finish* to restart the computer and for changes to take effect.

8. To reboot the system, click Yes.



4.3 Realtek High Definition Audio Driver

1. Insert the DVD that comes with the board. Click **System** and then **SI-60E Series Products**.

Inside	This CD Version : SI-2.21
System	SI-12 Series Products SI-606 Series Products SI-60E Series Products SI-64 Series Products SI-83 Series Products SE-92 Series Products

2. Click **Realtek High Definition Audio Driver.**

Inside	Version : SI-2.2
System	Intel(R) Chipset Software Installation Utility AMD Radeon E8860 Graphics Driver Realtek High Definition Audio Driver Intel(R) 121x Gigabit Network Driver Intel(R) Management Engine(ME) Driver Intel(R) USB 3.0 eXtensible Host Controller Drive Realtek RTL8111G LAN Driver IDD100 Driver and Utility



3. On the Welcome to the InstallShield Wizard screen, click **Yes** to proceed with and complete the installation process.



4. The InstallShield Wizard Complete. Click *Finish* to restart the computer and for changes to take effect.



4.4 Intel[®] I21x Gigabit Network Driver

1. Insert the DVD that comes with the board. Click **System** and then **SI-60E Series Products**.

Inside 1	his CD Version : SI-2.21
System	SI-12 Series Products SI-606 Series Products SI-60E Series Products SI-64 Series Products SI-83 Series Products SE-92 Series Products

2. Click Intel® I21x Gigabit Network Driver.

Inside	This CD Version : SI-2.21
System Tools	Intel(R) Chipset Software Installation Utility AMD Radeon E8860 Graphics Driver Realtek High Definition Audio Driver Intel(R) I21x Gigabit Network Driver Intel(R) Management Engine(ME) Driver Intel(R) USB 3.0 eXtensible Host Controller Driver Realtek RTL8111G LAN Driver IDD100 Driver and Utility



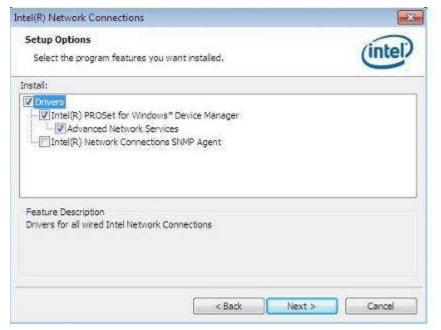
3. When the Welcome screen appears, click Next.



4. Click *Next* to to agree with the license agreement.

Intel(R) Network Connections Install Wizard	
License Agreement Please read the following license agreement carefully.	(intel)
INTEL SOFTWARE LICENSE AGREE	
IMPORTANT - READ BEFORE COPYING, INSTA	LLING OR USING.
Do not copy, install, or use this software and any asso (collectively, the "Software") provided under this licen ("Agreement") until you have carefully read the follow By copying, installing, or otherwise using the Software the terms of this Agreement. If you do not agree to the do not copy, install, or use the Software.	ise agreement ing terms and conditions. 9, you agree to be bound by
(collectively, the "Software") provided under this licen ("Agreement") until you have carefully read the follow By copying, installing, or otherwise using the Software the terms of this Agreement. If you do not agree to the	ise agreement ing terms and conditions. e, you agree to be bound by

5. Click the checkbox for **Drivers** in the Setup Options screen to select it and click **Next** to continue.

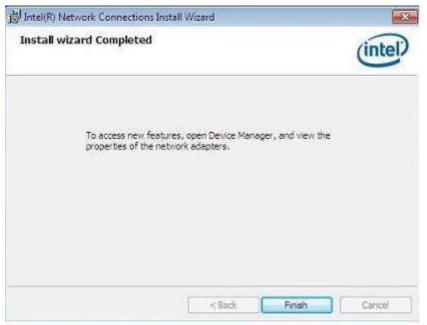


6. The wizard is ready to begin installation. Click *Install* to begin the installation.

JIntel(R) Network Connections Install Wizard	
Ready to Install the Program	(intel)
The wizard is ready to begin installation.	uncer
Click Install to begin the installation.	
If you want to review or change any of your installation setting exit the wizard,	s, click Back. Click Cancel to
< Back	Install Cancel



7. When InstallShield Wizard is complete, click *Finish*.



4.5 Intel[®] Management Engine(ME) Driver



The following application requires Microsoft .NET Framework 3.5 or later: Intel® Management Engine Components. Please install the latest version of Microsoft .NET Framework from Microsoft Download Center to run this application correctly.

Follow the steps below to install the Intel Management Engine.

1. Insert the DVD that comes with the board. Click **System** and then **SI-60E Series Products**.and then **Intel® Management Engine(ME) Driver**.

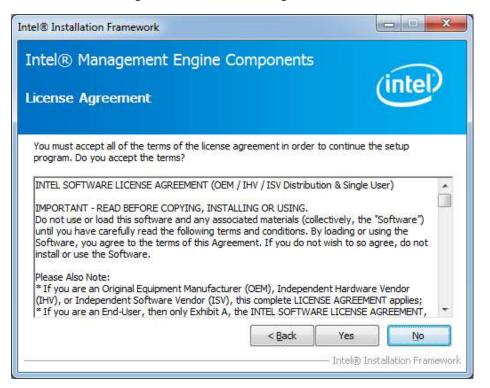


2. When the Welcome screen for Intel® Management Engine Components, click the checkbox for **Install Intel® Control Center** & click **Next**.





3. Click Yes to to agree with the license agreement.



4. When the Setup Progress screen appears, click *Next*. Then, click *Finish* when the setup progress has been successfully installed.

ntel® f etup Pr	lanagement Engine Compor ogress	nents
line and a	while the following setup operations are perfo	ormed:
Copying Fil Creating Pr Installing: Deleting Fil Copying Fil Creating Pr Creating Pr Installing: Copying Fil	2: C:\Windows\system32\drivers\IntelMEFWV ocess: C:\Program Files (x86)\Intel\Intel(R) M ntel® Control Center 2: C:\Program Files (x86)\Intel\Intel(R) Manag ocess: C:\Program Files (x86)\Intel\Intel(R) M ocess: C:\Program Files (x86)\Intel\Intel(R) M ocess: C:\Program Files (x86)\Intel\Intel(R) M ntel® ME FW Recovery Agent 2: C:\Program Files (x86)\Intel\Intel(R) M anag o continue.	Ianagement Engine Components\FWS gement Engine Components\FWServic gement Engine Components\FWServic Ianagement Engine Components\FWS Ianagement Engine Components\FWS
		F

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Intel® Installation Framework	
Intel® Management Engine Components Setup Is Complete	(intel)
The setup program successfully installed the following components:	
Intel® Management Engine Interface Intel® Dynamic Application Loader Intel® Identity Protection Technology (Intel® IPT) Serial Over LAN Intel® Management and Security Status Local Management Service	
You must restart this computer for the changes to take effect. Would yo computer now?	u like to restart the
Yes, I want to restart this computer now.	
No, I will restart this computer later.	
Click Finish, then remove any installation media from the drives.	Finish
Int	el® Installation Framework



4.6 Intel[®] USB 3.0 eXtensible Host Controller Driver

1. Insert the DVD that comes with the board. Click **System** and then **SI-60E Series Products**. Click **Intel® USB 3.0 eXtensible Host Controller Driver.**

Inside 1	Version : SI-2.21
System Tools	Intel(R) Chipset Software Installation Utility AMD Radeon E8860 Graphics Driver Realtek High Definition Audio Driver Intel(R) I21x Gigabit Network Driver Intel(R) Management Engine(ME) Driver Intel(R) USB 3.0 eXtensible Host Controller Drive Realtek RTL8111G LAN Driver IDD100 Driver and Utility

2. When the Welcome screen to the InstallShield Wizard for Intel® USB 3.0 eXtensible Host Controller Driver, click *Next*.

ntel® Installation Framework		- E	
Intel® USB 3.0 eXtensible Hos	t Controller		intel
Welcome to the Setup Program			
This setup program will install the following compo • Intel® USB 3.0 eXtensible Host Controller Driver • Intel® USB 3.0 Hub Driver • Intel® USB 3.0 Host Controller Switch Driver • Intel® USB 3.0 Monitor			
Cick Next to continue.			
	< Back	Next >	Cancel
	< Back	Next >	(moders

3. Click Yes to to agree with the license agreement and continue the installation.

ntel® Installation Framework	ost Controlle	r Driver	
License Agreement			(intel)
You must accept all of the terms of the license program. Do you accept the terms?	e agreement in order	to continue the	e setup
INTEL SOFTWARE LICENSE AGREEMENT (Alp	ha / Beta, Organizati	onal Use)	
IMPORTANT - READ BEFORE COPYING, INST	ALLING OR USING.		
Do not use or load this software and any ass until you have carefully read the following ter Software, you agree to the terms of this Agre install or use the Software.	rms and conditions. B	y loading or us	ing the
The Software contains pre-release "alpha" or and which Intel Corporation ("Intel") may sub	stantially modify in p	roducing any "	final" version
of the Software. Intel can provide no assura	ince that it will ever p	rounce or mon	e generony

4. On the Readme File Information screen, click *Next* to continue the installation of the Intel® USB 3.0 eXtensible Host Controller Driver.

ntel® USB 3.0 eXtensible Ho	ist Controller D	/intel)
eadme File Information		uncer
Refer to the Readme file below to view the sys	tem requirements and in	stallation information.
Do not run this driver's installer (Setup.exe) fro		***
storage device (ie. external USB hard drive or drive). For proper installation, please copy driv to a local hard drive folder and run from there.	ver files	****
drive). For proper installation, please copy driv	ver files	****
drive). For proper installation, please copy driv to a local hard drive folder and run from there. *	ver files	****



5. Setup complete. Click *Finish* to restart the computer and for changes to take effect.



4.7 Realtek RTL8111G LAN Driver

1. Insert the DVD that comes with the board. Click *System* and then *SI-60E Series Products*. Click *Realtek RTL8111G LAN Driver.*

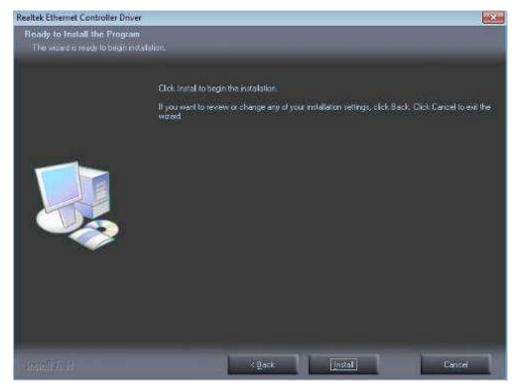
Inside	This CD Version : SI-2.21
System	Intel(R) Chipset Software Installation Utility AMD Radeon E8860 Graphics Driver Realtek High Definition Audio Driver Intel(R) I21x Gigabit Network Driver Intel(R) Management Engine(ME) Driver Intel(R) USB 3.0 eXtensible Host Controller Driver Realtek RTL8111C LAN Driver IDD100 Driver and Utility

2. In the Welcome screen, click Next.

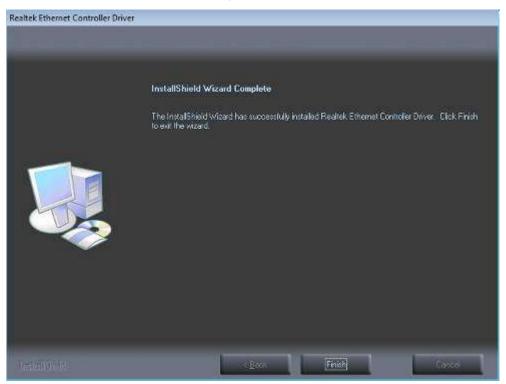
Realtek Ethernet Controller Driver		23
	Welcome to the InstallShield Wizard for Realitek Ethernet Controller Driver The InstalShield Wizard will instal Realitek Ethernet Controller Driver on your computer. To continue, click Next	
	Leci. Next > Cencel	1



3. When the Ready to Install the Program screen appears, click Install to continue.



4. When InstallShield Wizard is complete, click Finish.



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4.8 IDD100 Driver and Utility

1.Insert the DVD that comes with the board. Click **System** and then **SI-60E Series Products**. Click **IDD100 Driver and Utility.**

Inside	This CD Version : SI-2.21
System	Intel(R) Chipset Software Installation Utility AMD Radeon E8860 Graphics Driver Realtek High Definition Audio Driver Intel(R) 121x Gigabit Network Driver Intel(R) Management Engine(ME) Driver Intel(R) USB 3.0 eXtensible Host Controller Drive: Realtek RTL8111G LAN Driver IDD100 Driver and Utility

2. Click CP210x Installer





3. In the Welcome screen, click Next.

CP210x USB to UART Bridge I	Oriver Installer
	Welcome to the CP210x USB to UART Bridge Driver Installer This wizard will help you install the drivers for your CP210x USB to UART Bridge device.
	To continue, click Next. < Back Next > Cancel

4. When the License Agreement the Program screen appears, click *I accept this agreement and Next.*

o continue, accept the following greement, use the scroll bar or p ICENSE AGREEMENT			e entire
ICENSE AGREEMENT			
HIS PRODUCT CONTAINS T NSTALLER PROGRAMS AND OFTWARE TOGETHER THE IS THE "LICENSED SOFTWA	HE SILICON LA OTHER THIRD SE PRODUCTS RE". USE OF T	BS VCP DRIVE PARTY ARE REFERR HE LICENSED	R AND ED TO
N		ave As	Print
	HIS PRODUCT CONTAINS T NSTALLER PROGRAMS AND OFTWARE TOGETHER THE S THE "LICENSED SOFTWA OFTWARE IS SUBJECT TO T	HIS PRODUCT CONTAINS THE SILICON LA NSTALLER PROGRAMS AND OTHER THIRD OFTWARE TOGETHER THESE PRODUCTS IS THE "LICENSED SOFTWARE". USE OF T OFTWARE IS SUBJECT TO THE TERMS OF	

5. When complete the Installation of the CP210x USB to UART Bridge Driver, click *Finish*.

CP210x USB to UART Brid	ge Driver Installer	
		e Installation of the DUART <mark>B</mark> ridge Driver
		ation wizard did not update any of your re devices because it was not better than y have installed.
	Driver Name	Status
	V Silicon Laboratories	(sila Ready to use
P		ack Finish Cancel

6.Click SI-60E Installer.

STAELaane - yr 92	(11)
	SI-60E Installer
	CP210x Installer
	Copyright 2015 (BASE Technology



7. In the Welcome screen, click Next.

2	Welcome to the InstallShield Wizard for SI-60E
	The InstallShield(R) Wizard will install SI-60E on your computer. To continue, click Next.
	WARNING: This program is protected by copyright law and international treaties.

8. When the Destination Folder screen appears, click Next.

10 SI-60E - 1	InstallShield Wizard	×
	tion Folder ext to install to this folder, or dick Change to install to a different folder.	>
D	Install SI-60E to: C:\Program Files (x86)\Base\SI-60E\ Change.	
InstallShield	< Back Next > Cancel	

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9. When the Ready to Install the Program screen appears, click Install.

eady to Install the Program			-1
The wizard is ready to begin installation.			
If you want to review or change any of your i exit the wizard.	nstallation sett	ings, click Back	Click Cancel to
Current Settings:			
Setup Type:			
Typical			
Destination Folder:			
C:\Program Files (x86)\Base\SI-60E\			
User Information:			
Name: 60E			
Company:			

10. When InstallShield Wizard Complete, click Finish.

討 SI-60E - InstallShield Wizard	
	InstallShield Wizard Completed
0	The InstallShield Wizard has successfully installed SI-60E. Click Finish to exit the wizard.
	< Back Finish Cancel



Appendix

A. IBASE Display Matrix User Manual

Software UART Control Application interface

 Transford (Reed in contract	Divi Planet (C. ANV
	COMP. Inc.	Ramenam				State of the local division of the local div	
Constants	5 K 5	00 HU		0.000	0 01 0 02 0 03 0 04 0 04 0 04	1100 Pag 1100 1101 1101 1101 1101 1101 1101 11	Antine Antine Larrent Derce Hitten: Of Connes 2 Matters Lang / Matters Hold Dence 2 Matters Lang / Matters Hold Dence 2 Matters Lang / Matters Hold Dence 3 Matters Lang / Matters Hold Dence 3 Matters Lang / Matters Hold Dence 3 Matters Lang / Matters Hold
2041 A 153						1	
2007 A 164		1000 C 4400		-	-		
21431+180		- brane a warm					
2101 + 204		CONTRACTOR				_	
2000+250		been a press.					
2000 + 210		2007.4.2109					
2000 + 1900		70706.1 (1988)					
1000 + 2+0 X040 + 210		2144.42160	Automatic - 1	•	10		
3848 + 270		1000 x 2100					

Function Description

- 1. Device List: Max support up to 6 Box
- 2. Auto Loop Pattern (Button/Hot Key)
- 3. RGBW Pattern (Button/Hot Key)
- 4. HW RESET (Button/Hot Key)
- 5. MODE Clone/1x2/1x4/2x2
- 6. Support CLK SYNC
- 7. Support 60Hz/120Hz Modes
- 8. Support Multi-Box ID
- 9. Support Multi-Box Device Setting
- 10. Support H and V Bezel Adjustment
- 11. H Blanking Setting
- 12. V Blanking Setting
- 13. Apply Key
- 14. Program On/Off

	Display Ivi		
Stretch (1x2)	Stretch (1x4)	Stretch (2x2)	Clone
3840x1200	7680x1200	3840x2400	1920x1200
3840x1080	7680x1080	3840x2160	1920x1080
3360x1050	6720x1050	3360x2100	1680x1050
3200x1200	6400x1200	3200x2400	1600x1200
3200x0900	6400x0900	3200x1800	1600x0900
2880x1050	5760x1050	2880x2160	1440x1050
2880x0900	5760x0900	2880x1800	1440x0900
2800x1050	5600x1050	2800x2100	1400x1050
2732x0768	5464x0768	2732x1536	1366x0768
2560x1024	5120x1024	2560x2048	1280x1024
2560x0800	5120x0800	2560x1600	1280x0800
2560x0768	5120x0768	2560x1536	1280x0768
2560x0720	5120x0720	2560x1440	1280x0720
2048x0768	4096x0768	2048x1536	1024x0768

Display Mode Table

Bezel Limit with Blanking Parameter Table

H Limit	V Limit
50	15
100	30
150	45
200	60
250	TBD

How to Setting Clone Display

Step 1: Enter to Display Control Page

Step 2: Go to Mode Status Press Enter

Step 3: Press Up / Down Key Select to Clone

Step 4: Go to UP PORT to select a Display Mode

Step 5: Go to Display Driver Control Page

Step 6: Setting the two Monitor to Duplicate Mode



How to Setting 1x4 Display

Step 1: Enter to Display Control Page

Step 2: Go to Mode Status Press Enter

Step 3: Press Up / Down Key Select to Stretch

Step 4: Go to Display Layout to Select 1x4

Step 5: Go to UP or DOWN Port select a Display Resolution

Step 6: Go to Display Driver Control Page

Step 7: Setting the two Monitor to H Combine Condition

Step 8: Adjustment H Bezel

How to Setting 2x2 Display

Step 1: Enter to Display Control Page

Step 2: Go to Mode Status Press Enter

Step 3: Press Up / Down Key Select to Stretch

Step 4: Go to Display Layout to Select 2x2

Step 5: Go to UP or DOWN Port select a Display Resolution

Step 6: Go to Display Driver Control Page

Step 7: Setting the two Monitor to V Combine Condition

Step 8: Adjustment H Bezel Value

Step 9: Adjustment V Bezel Value

B. IBASE Multiple-Display Matrix Technology Utility for 4 x 3 Video Wall Display configuration setting

1.1 What is ATI Eyefinity Technology?

ATI Eyefinity Technology from AMD provides advanced multiple monitor technology delivering an incredibly immersive graphic and computing experience with innovative display capabilities, supporting massive desktop workspaces and super-high resolution signage applications. ATI Eyefinity technology with SI-58 6 X HDMI connectivity enables a single GPU to support up to six independent display outputs simultaneously. For the purposes of this document an "ATI Eyefinity system" means a computer system employing ATI Eyefinity technology and an "ATI Eyefinity resolution" means a resolution achievable using ATI Eyefinity technology.



1.2 Product Description

IBASE offers user-friendly and powerful video solution in the form of SI-60E (Signature Book) with IBASE Multiple-Display Matrix Technology Utility & AMD Eyefinity function. Each IBASE SI-60E (Signature Book) with IBASE Multiple-Display Matrix Technology Utility & Eyefinity function can drive up to 12 displays with different display configuration.

SI-60E	Version
BIOS	MBD60E-D1B-D1A-150317
Utility	SI-60E V 1.0
VGA driver	14.301.1001-140915a-177267C-AES

1.3 Driver Installation

Before using SI-60E (Signature Book)'s IBASE Multiple-Display Matrix Technology Utility & AMD Eyefinity function, the user must install both SI-60EInstaller V 1.0 for (CP210xVCPInstaller/ SI-60EControlCenter) and AMD VGA driver completely.

1.4 IBASE Multiple-Display Matrix Technology Utility



Click SI-60E Icon

Application interface as shown:

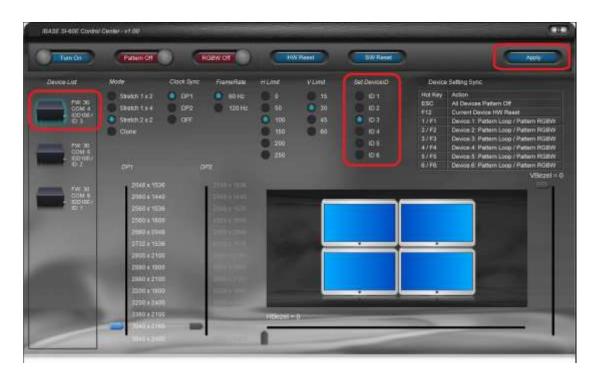
ABAGE (D-SIM COMPO	Castler- of 00			
TIMOT	(Tanani of)		awsan D	
	Abor Transford 127 Transford 128 Transford 128			Delate trebaig line : Reg Annue Al Dovine Fater Di A Consel Deven Fater Di A Consel Deven Fater Di Deven 1 Deven Fater Di Deven 2 Deven Fater Di Deven Fater Deven Fate



"Turn on" Device List



On the above Device List item, please confirm and check each IDD 100 Device with the different ID. If the Device has the same ID (the above two Device with the same ID 2), please select and click one of the same ID device, then select "**Set DeviceID**" function to change its ID number, and click "**Apply**" to finish the setting.



Each IDD100 Device supports 4x HDMI output, and maximum resolution is 1920 X 1200 per HDMI. You have to check the display resolution first, then choose the suitable resolution accordingly.



The following is an example for FHD displays. Choose "**Mode**" as Stretch 2x2 and "**DP1**" resolution is 3840 X 2160 (IDD100 Device with 4 x HDMI output as 2 x 2 combination mode).

Please choose "Clock Sync" as DP1 and enable "Device Setting Sync", then click "Apply".

3 x IDD100 Device (Each with 4 x HDMI) will have the same setting at the same time.

Remarks: The reason we let 3 x IDD100 device "Clock Sync" to be the same as DP1

is because it can avoid differences in SYS GPU signal output to reduce tearing issues,

as well as keeps the SYS signal output stable.

IIIASE SHOE Control	Center - 21 60			
(Tenerora)	Patient OT	(IN Beat	Sit Rosel	
Derive List	Mode Speich 1 x 2 Speich 1 x		SelDentra0	Hark Kay Anian Har Kay Anian 17 Device 1 Pattern Loop / Pattern PLOW 378 Device 1 Pattern Loop / Pattern PLOW 378 Device 1 Pattern Loop / Pattern PLOW 378 Device 1 Pattern Loop / Pattern PLOW 379 Device 1 Pattern Loop / Pattern PLOW 379 Device 1 Pattern Loop / Pattern PLOW 379 Device 1 Pattern Loop / Pattern PLOW 370 Device 1 Pattern Loop / Pattern PLOW 371 Device 1 Pattern Loop / Pattern PLOW 372 Device 1 Pattern Loop / Pattern PLOW 374 Device 1 Pattern Loop / Pattern PLOW 375 Device 1 Pattern Loop / Pattern PLOW 376 Device 1 Pattern Loop / Pattern PLOW 377 Device 1 Pattern Loop / Pattern PLOW 378 Device 1 Pattern Loop / Pattern PLOW 379 Device 1 Pattern

Now you can leave IBASE SI-60E control center V1.0 utility, and start using "AMD

Catalyst Control Center"

36-	AMD Catalyst Control Center	
	View Sort by Refresh	* *
	Paste Paste shortcut	
	New	•
<u> </u>	Screen resolution	
1	Gadgets Personalize	



Choose "AMD Eyefinity Multi-Display" for Video wall display configuration setting.



Select "Create Euefinity Display Group"

	AMD Catalyst Control Center Preferences
Search P > Pinned * > Presets Ø	Start Desktops and Displays AMD Eyefinity [™] Multi-Display
	Create Eyefinity Display Group Create an AMD Eyefinity display group. Combine multiple displays to work together as a single desktop. Create Eyefinity Display Group
	Re-enable Eyefinity Display Group Re-enable Eyefinity Display Group



Select "2 x 3" for 4 x 3 Display configuration

	AMD Catalyst Control Center	Preferences
Search 🔎	Start Desktops and Displays AMD Eyefinity™ Multi-Display Create Eyefinity Di	splay Group
> Pinned 🦸	Create Eyefinity Display Group	* ?
> Presets 🦪	Create an AMD Eyefinity display group. Combine multiple displays to work together as a	single desktop.
	Supported configurations for your display group:	Show more
	standard mixed dimension mixed alignment	
	Select a layout for the display group: 2x1 2x1 2x1 3x1 4x1 5x1 1x2 2x2 3x2 1x3 1x5 2x3 1x4	Next

Make the displays arrangement

	AMD Catalyst Control Center	Preferences
Search P	Start Desktops and Displays AMD Eyefinity™ Multi-Display Create Eyefinity Display Grou	
> Pinned 🦸	Create Eyefinity Display Group	* ?
> Presets 🧭	Create an AMD Eyefinity display group. Combine multiple displays to work together as a single de	esktop.
	Supported configurations for your display group (2x3): standard mixed dimension	Show more
	Rearrange your displays as needed.	
	2 5 3 6	
	Back	Next



Complete the settings.

	AMD Catalyst Control Center	Preferences
Search 🔎	Start Desktops and Displays AMD Eyefinity™ Multi-Display Create E	vefinity Display Group
> Pinned 🦸	Create Eyefinity Display Group	* ?
> Presets	Save this display group as: My Display Group 2015May11_1607 To continue, start a new task. We suggest: Adjust Bezel Compensation Arrange Eyefinity Display Group	ith 6 displays (2 x
	Defaults	Discard Apply

*	AMD Catalyst Control Center
	View 🕨
	Sort by
	Refresh
	Paste
	Paste shortcut
	New •
	Screen resolution
	Gadgets
2	Personalize

Now, you can use Screen resolution to check your setting.

A screen with 7680 X 3240 is the correct setting for 4 x 3 Display configuration with

FHD (1920 X 1080) resolution supported displays.

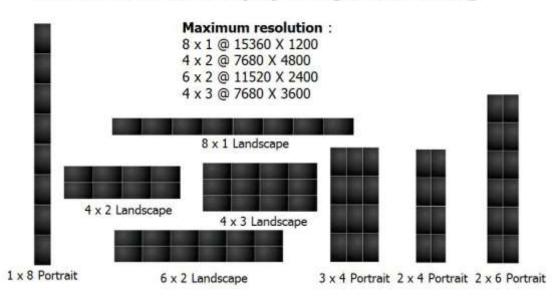
				x
Display + Screen Resolution	• \$ 1	Search Control Panel		Q
Change the appearance of your display				
0		Detect Identify		
Display: 1. IBASE IDD100 ▼ Resolution: 7680 × 3240 ▼			1 	
		Advanced setting	s	
Make text and other items larger or smaller What display settings should I choose?				
0	к [Cancel Apply]	



Remark:

8 and 12 Displays configurations

Flexible Video Wall Display configuration setting



C. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. The following table lists the I/O port addresses used.

Address	Device Description
0000h-001Fh	Direct memory access controller
0000h-0CF7h	PCI bus
0040h-0043h	System timer
0050h-0053h	System timer
0070h-0077h	System CMOS/real time clock
0081h-0091h	Direct memory access controller
0093h-009Fh	Direct memory access controller
00C0h-00DFh	Direct memory access controller
00F0h-00F0h	Numeric data processor
02F8h-02FFh	Communications Port (COM2)
03B0h-03BBh	AMD Radeon E8860
03C0h-03DFh	AMD Radeon E8860
03F8h-03FFh	Communications Port (COM1)
0D00h-FFFFh	PCI bus
D000h-DFFFh	Intel(R) 8 Series/C220 Series PCI Express Root Port #7 - 8C1C
E000h-E0FFh	AMD Radeon E8860
F040h-F05Fh	Intel(R) 8 Series/C220 Series SMBus Controller - 8C22
F060h-F07Fh	Intel(R) 8 Series/C220 Series SATA AHCI Controller - 8C02
F0A0h-F0A3h	Intel(R) 8 Series/C220 Series SATA AHCI Controller - 8C02
F0B0h-F0B7h	Intel(R) 8 Series/C220 Series SATA AHCI Controller - 8C02
F0C0h-F0C3h	Intel(R) 8 Series/C220 Series SATA AHCI Controller - 8C02
F0D0h-F0D7h	Intel(R) 8 Series/C220 Series SATA AHCI Controller - 8C02
F0E0h-F0E7h	Intel(R) Active Management Technology - SOL (COM3)



D. Interrupt Request Lines (IRQ)

Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on board.

Level	Function
IRQ0	System Timer
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ 5	Intel(R) 8 Series/C220 Series SMBus Controller - 8C22
IRQ 13	Numeric data processor
IRQ 16	High Definition Audio Controller
IRQ 16	Intel(R) 8 Series/C220 Series USB EHCI #2 - 8C2D
IRQ 19	Intel(R) 8 Series/C220 Series SATA AHCI Controller - 8C02
IRQ 19	Intel(R) Active Management Technology - SOL (COM3)
IRQ 22	High Definition Audio Controller
IRQ 23	Intel(R) 8 Series/C220 Series USB EHCI #1 - 8C26

E. Watchdog Timer Configuration

The WDT is used to generate a variety of output signals after a user programmable count. The WDT is suitable for use in the prevention of system lock-up, such as when software becomes trapped in a deadlock. Under these sorts of circumstances, the timer will count to zero and the selected outputs will be driven. Under normal circumstance, the user will restart the WDT at regular intervals before the timer counts to zero.

```
SAMPLE CODE:
```

```
//-----
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//-----
#include <dos.h>
#include <conio.h>
#include <stdio.h>
#include <stdlib.h>
#include "F81846.H"
//-----
int main (int argc, char *argv[]);
void EnableWDT(int):
void DisableWDT(void);
//-----
                       -----
int main (int argc, char *argv[])
{
 unsigned char bBuf;
 unsigned char bTime;
 char **endptr;
 char SIO:
 printf("Fintek 81866 watch dog program\n");
 SIO = Init_F81846();
if (SIO == 0)
ł
printf("Can not detect Fintek 81866, program abort.\n");
return(1);
\frac{1}{100} = 0
if (argc!=2)
{
printf(" Parameter incorrect!!\n");
return (1);
}
bTime = strtol (argv[1], endptr, 10);
printf("System will reset after %d seconds\n", bTime);
if (bTime)
                                                      EnableWDT(bTime);
{
                                                      }
else
                                                      DisableWDT();
{
                                                      }
return 0;
```



} //-----void EnableWDT(int interval) { unsigned char bBuf; bBuf = Get_F81846_Reg(0x2B); bBuf &= (~0x20); Set_F81846_Reg(0x2B, bBuf); Set_F81846_LD(0x07); Set_F81846_Reg(0x30, 0x01);

 $bBuf = Get_F81846_Reg(0xF5);$ bBuf &= (~0x0F);bBuf |= 0x52; Set_F81846_Reg(0xF5, bBuf);

Set_F81846_Reg(0xF6, interval);

bBuf = Get_F81846_Reg(0xFA); bBuf |= 0x01; Set_F81846_Reg(0xFA, bBuf);

bBuf = Get_F81846_Reg(0xF5); bBuf |= 0x20; Set_F81846_Reg(0xF5, bBuf);

-----//-----

void DisableWDT(void)

unsigned char bBuf;

Set_F81846_LD(0x07);

//Enable WDTO

//switch to logic device 7

//enable timer

//count mode is second

//set timer

//enable WDTO output

//start counting

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//switch to logic device 7

bBuf = Get_F81846_Reg(0xFA); bBuf &= ~0x01; Set_F81846_Reg(0xFA, bBuf);

//disable WDTO output

bBuf = Get_F81846_Reg(0xF5); bBuf &= ~0x20; bBuf |= 0x40; Set_F81846_Reg(0xF5, bBuf);

//disable WDT

}



//-----// // THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY // KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE // IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR // PURPOSE. // //---#include "F81846.H" #include <dos.h> //----unsigned int F81846_BASE; void Unlock_F81846 (void); void Lock_F81846 (void); //-----_____ unsigned int Init_F81846(void) { unsigned int result; unsigned char ucDid; $F81846_BASE = 0x4E;$ result = F81846_BASE; $ucDid = Get_F81846_Reg(0x20);$ if (ucDid == 0x07)//Fintek 81866 { goto Init_Finish; } F81846 BASE = 0x2E; result = F81846_BASE; ucDid = Get_F81846_Reg(0x20); if (ucDid == 0x07)//Fintek 81866 { goto Init_Finish; } $F81846_BASE = 0x00;$ result = F81846_BASE; Init_Finish: return (result); ł //--_____ void Unlock_F81846 (void)

outportb(F81846_INDEX_PORT, F81846_UNLOCK); outportb(F81846_INDEX_PORT, F81846_UNLOCK);

//--_____

void Lock_F81846 (void)

{

}

outportb(F81846_INDEX_PORT, F81846_LOCK); }

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```
//-----
void Set_F81846_LD( unsigned char LD)
Unlock F81846();
outportb(F81846_INDEX_PORT, F81846_REG_LD);
outportb(F81846_DATA_PORT, LD);
Lock_F81846();
}
//-----
void Set_F81846_Reg( unsigned char REG, unsigned char DATA)
{
Unlock_F81846();
outportb(F81846_INDEX_PORT, REG);
outportb(F81846_DATA_PORT, DATA);
Lock_F81846();
}
//-----
unsigned char Get_F81846_Reg(unsigned char REG)
{
unsigned char Result;
Unlock_F81846();
outportb(F81846_INDEX_PORT, REG);
Result = inportb(F81846_DATA_PORT);
Lock_F81846();
return Result;
}
//-----
```



// //	
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" // KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING // IMPLIED WARRANTIES OF MERCHANTABILITY AND/O // PURPOSE. //	BUT NOT LIMITED TO THE
//	
#ifndefF81846_H #defineF81846_H	
	1
// #define	F81846_INDEX_PORT
#define	(F81846_BASE) F81846_DATA_PORT
//	(F81846_BASE+1)
#define	F81846_REG_LD
	0x07
// #define F81846_UNLOCK	
#define	0x87 F81846_LOCK
//	0xAA
unsigned int Init_F81846(void); void Set_F81846_LD(unsigned char); void Set_F81846_Reg(unsigned char, unsigned char); unsigned char Get_F81846_Reg(unsigned char);	
// #endif	//F81846_H