# MITAC Desktop Board PH14FEI Product Guide

# **Desktop Board Features**

This chapter briefly describes the features of Desktop Board PH14FEI. Table 1 summarizes the major features of the Desktop Board.

# **Feature Summary**

Form Factor	Low-profile Mini-ITX (20 millimeters [0.79 inches]		
	x 170.18 millimeters		
	[6.7 inches] x 170.18 millimeters [6.7 inches])		
Processor	CPU Type : Intel 8th&9th Desktop platform		
	CPU Core : Dual Core / Quad Core / Hexa core /		
I.	Socket : Socket   GA1151		
	TDP :Hexa core up to 95W / Octa	core up to 35W	
Chipset	Chipset Series : Intel Q370 Chipse	et	
	Chipset Series : Intel H310 Chipse	t	
Memory	Memory Type: DDR4 @ 1.2V, 2666	5/2400MHz	
	(Unbuffered Non-ECC)		
	Memory Canacity : Support total L	in to 32 GB	
	ECC Support : No	ip to 52 GD	
	Memory Socket: 260-pin So-	2	
	DIMM socket		
Display	DisplayPort & HDMI connector		
	40P Embedded LVDS/(colay eDP)		
Audio	Codec: HD audio codec, Realtek ALC662		
	1 x front audio Header (Mic/HP)		
	1 x audio header to support system stereo		
	speaker		
Expansion			
Capability	M.2 2280 M key (PCIe, SATA)		
	M.2 2230 E key (PCIe, USB) 1		
	Full size mini PCIe	1	
Internal IO	USB 2.0 ports 5 (Q370)		
		4 (H310)	
	Serial ports	4	
	SATAIII 6Gb/s 2		
Legacy I/O	Nuvoton NCT6116D		
LAN Support	Intel® I219 Gigabit (10/100/1000 Mb/s) LAN		
	Intel® I210 Gigabit (10/100/1000 Mb/s) LAN		
BIOS	Support for Advanced Configuration and Power		
	Interface (ACPI) setting		
Instantly	Suspend to RAM support		
Available PC	wake on LAN, and USB ports		
Hardware			
Monitor	Hardware monitoring through the	NUVOTON6116D	
	legacy I/O controller, including:		

Subsystem	Remote thermal sensor		
	Speed control for 4-pin system fan header and 4-		
	pin		
	CPU fan header		
Power	DC-in 12v DIN 4Pin connector / ATX 4-pin 12V		
Requirement	**option 12v-24V via DC to DC power board		
Environment	Operating Temperature: 0 °C to +60 °C		
	Storage Temperature: -40°C to +85°C		
Safety	CE		
	FCC		

TABLE 1. MITAC DESKTOP BOARD PH14FEI FEATURES

Note:

- please install I219 LAN driver into OS image on PXE server before using PXE installation function
- please do NOT hot plug of 2x2 ATX connector

#### PH14FEI-12v: Suggest Din 4pin power adapter pin define





#### Reference adapter vendor

CWT KPM180F-N023 12V 180W (http://www.cwt.com.tw/) Mean Well GST160A-R7B 12V 160W (https://www.meanwell.com/)

PH14FEI-24v : Suggest 3pin terminal block power adapter pin define

	Pin No.	OUTPUT
	Pin 1	Vcc
	Pin2	NC
Ole I	Pin3	GND

# **Desktop Board Components**

Figure 1 shows the approximate location of the major components on the top side of MITAC Desktop Board PH14FEI.



Α	ATX 4pin
В	PCIEx16
С	SYS FAN
D	CPU Socket
E	Backlight Connector

F	Dual USB2.0 header
G	Panel power jumper
Н	LVDS connector
I	RS232 header (COM3)
1	RS232/422/485 header(COM2)
К	RS232/422/485 header(COM1)
L	RS232 header (COM4)
М	MiAPI header
Ν	SATA connector
0	SATA Connector
Р	Internal Speaker header
Q	Front Audio header
R	TPM header
S	CPU FAN
Т	AT / ATX header
U	CMOS reset header
V	USB2.0 header
W	Dual USB2.0 header
Х	Front panel header
Y	SATA Power header
Z	DDR4 SODIMM socket
A 1	mPCIE slot
A 2	M.2 2230 E key slot
Back side	M.2 2280 M key slot

TABLE 2. MITAC DESKTOP BOARD PH14FEI COMPONENTS (SHOWN IN FIGURE 1)

# Processor

The board supports 8<sup>th</sup> & 9<sup>th</sup> generation Intel Core processors. Other processors may be supported in the future. This board supports Hexa core with a maximum wattage of 95 W Thermal Design Power (TDP) and Octa core with a maximum wattage of 35 W Thermal Design Power (TDP).

#### NOTE

*This board has specific requirements for providing power to the processor. Additional power required will depend on configurations chosen by the integrator.* 

# **System Memory**

## NOTE

To be fully compliant with all applicable DDR SDRAM memory specifications, the board should be populated with DIMMs that support the Serial Presence Detect (SPD) data structure. This allows the BIOS to read the SPD data and program the chipset to accurately configure memory settings for optimum performance. If non-SPD memory is installed, the BIOS will attempt to correctly configure the memory settings, but performance and reliability may be impacted or the DIMMs may not function under the determined frequency.

The Desktop Board has two260-pin DDR4 SO-DIMM sockets with goldplated contacts.

# Connecting to the Internal Headers and

# Connectors



Figure 1 : Front Panel Connector

Pin	Signal Name	Description	Pin	Signal Name	Description
		Pull-up resistor (750 ) to			
1	HDD_POWER_LED	+5V	2	POWER_LED_MAIN	[Out] Front panel LED (Green)
3	HDD_LED#	[Out] Hard disk activity LED	4	POWER_LED_ALT	[Out] Front panel LED (Yellow)
5	GROUND	Ground	6	POWER_SWITCH#	Power button
7	RESET_SWITCH#	Reset switch	8	GROUND	Ground
9	+5V_DC	Power	10	KEY	No pin

**Table 1: Front Panel Connector** 



## Figure 2: LVDS Connector

Pin	Signal	Description
1	TD0P	LVDS Channel A diff data output - positive
2	TD0N	LVDS Channel A diff data output - negative
3	TC0P	LVDS Channel A diff data output - positive
4	TCON	LVDS Channel A diff data output - negative
5	ТВОР	LVDS Channel A diff data output - positive
6	TBON	LVDS Channel A diff data output - negative
7	TA0P	LVDS Channel A diff data output - positive
8	TAON	LVDS Channel A diff data output - negative
9	TD1P	LVDS Channel B diff data output-positive
10	TD1N	LVDS Channel B diff data output-negative
11	TC1P	LVDS Channel B diff data output-positive
12	TC1N	LVDS Channel B diff data output-negative
13	TB1P	LVDS Channel B diff data output-positive
14	TB1N	LVDS Channel B diff data output-negative
15	TA1P	LVDS Channel B diff data output-positive
16	TA1N	LVDS Channel B diff data output-negative
17	GND	Ground
18	3.3V/5V/12V	Selectable LCD power output
19	3.3V/5V/12V	Selectable LCD power output
20	3.3V/5V/12V	Selectable LCD power output
21	NC	NC
22	VCC3	VCC
23	CABLE_ID2	Ground (reserve for MiTAC AIO CABLE_ID2)
24	GND	Ground
25	GND	Ground
26	ТСКОР	LVDS Channel A diff data output - positive
27	TCK0N	LVDS Channel A diff data output - negative

28	GND	Ground
29	GND	Ground
30	CABLE_ID3	Ground (reserve for MiTAC AIO CABLE_ID3)
31	LVDS_DDC_SCL	LVDS_DDC_SCL
32	CABLE_ID1	Ground (reserve for MiTAC AIO CABLE_ID1)
33	PS8625_BKLT_CTRL	PS8625_BKLT_CTRL
34	TCK1P	LVDS Channel B diff data output - positive
35	TCK1N	LVDS Channel B diff data output - negative
36	NC	NC
37	NC	NC
38	NC	NC
39	CABLE_ID4	Ground (reserve for MiTAC AIO CABLE_ID4)
40	NC	NC

Table 2: 40-pin LVDS data header pin-out reference



Figure 3: eDP Connector

Pin	Signal	Description
1	NC	NC
2	GND	Ground
3	EDP_CPU_3-	MAIN LINK
4	EDP_CPU_3+	MAIN LINK
5	GND	Ground
6	EDP_CPU_2-	MAIN LINK
7	EDP_CPU_2+	MAIN LINK
8	GND	Ground
9	EDP_CPU_1-	MAIN LINK
10	EDP_CPU_1+	MAIN LINK
11	GND	Ground

12	EDP_CPU_0-	MAIN LINK
13	EDP_CPU_0+	MAIN LINK
14	GND	Ground
15	EDP_CPU_AUX+	Aux channel
16	EDP_CPU_AUX-	Aux channel
17	GND	Ground
18	LCD_VCC	Selectable LCD power output
19	LCD_VCC	Selectable LCD power output
20	LCD_VCC	Selectable LCD power output
21	LCD_VCC	Selectable LCD power output
22	NC	NC
23	NC	NC
24	GND	Ground
25	GND	Ground
26	GND	Ground
27	HPDET	Hot plug detection
28	GND	Ground
29	GND	Ground
30	NC	NC
31	GND	Ground
32	BKLT_EN	BKLT_EN
33	PCH_BACKLIGHT_PWM	PCH_BACKLIGHT_PWM
34	NC	NC
35	NC	NC
36	BKLT_PWR	Selectable BKLT power output
37	BKLT_PWR	Selectable BKLT power output
38	BKLT_PWR	Selectable BKLT power output
39	BKLT_PWR	Selectable BKLT power output
40	NC	NC

 Table 3: 40-pin eDP data header pin-out reference



#### Figure 4: LVDS inverter power header pin-out

Pin	Signal Name	Description
1	LVDS_BKTEN_R	Backlight enable
2	LVDS_PWM	Backlight PWM control
3	12V/19V	Inverter power
4	12V/19V	Inverter power
5	GND	Ground
6	GND	Ground
7	BRIGHT_UP-	BRIGHTNESS UP
8	BRIGHT_DOWN-	BRIGHTNESS DOWN





#### Figure 5: Dual USB2.0 pin-out

Pin	Signal	Pin	Signal
1	5V_USB	2	5V_USB
3	Data (negative)	4	Data (negative)
5	Data (positive)	6	Data (positive)
7	Ground	8	Ground
9	Key (no pin)	10	No Connect

Table 5 Dual USB 2.0 Header



## Figure 6: USB2.0 pin-out

Pin	Signal	
1	5V_USB	
2	Data (negative)	
3	Data (positive)	
4	Ground	
9	Key (no pin)	

Table 6 USB 2.0 Header



Figure 7: FP Audio pin-out

Pin	Signal Name	Description	
1	MIC	Front panel microphone input signal	
2	AUD_GND	Ground used by analog audio circuits	
		Microphone power / additional MIC	
3	MIC_BIAS	input for stereo microphone support	
		Active low signal that signals bios that	
		an audio dongle is connected to the	
4	Presence	analog header	
		Right channel audio signal to front	
5	FP_OUT_R	panel	

6	AUD_GND	Ground used by analog audio circuits
7	Reserved	reserved
8	Key	No pin
9	FP_OUT_L	Left channel audio signal to front panel
10	AUD_GND	Ground used by analog audio circults

Table 7: FP Audio Header



Figure 8: Internal speaker pin-out

Pin	Signal Name
1	Front_L-
2	Front_L+
3	Front_R+
4	Front_R-

Table 8: Internal header signals



Figure 9: Serial port header pin-out

Pin	Signal Name
1	DCD
2	RXD#
3	TXD#
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	Key(no pin)

Table 9 Serial port header pin-out



Figure 10 Processor fan header pin-out

Pin	Signal
1	Ground
2	+12V

Pin	Signal	
3	CPU_FAN_TACH	
4	CPU_FAN_CTRL	

Table 10 fan header signals



#### Figure 11: CMOS Clear Header

CMOS Clear

1-2	Clear CMOS
2-3	Normal

Table 11: CMOS Clear behavior



# Figure 12: M.2 M key slot For Storage pin-out

74	3.3Vaux	GND	75
72	3.3Vaux	GND	73
70	3.3Vaux	GND	71
68	SUSCLK(32kHz)(O)(0/3.3V)	PEDET(OC-PCIe/GND-SATA)	69
	Connector Key	N/C	67
	Connector Key	Connector Key	
	Connector Key	Connector Key	
	Connector Key	Connector Key	
58	N/C	Connector Key	
56	N/C	GND	57
54	PEWake#(IO){0/3.3V}or N/C	REFCLKP	55
52	PERST#(O)(0/3.3V) or N/C	REFCLKN	53
50	PERST#(O)(0/3.3V) or N/C	GND	51
48	N/C	PETp0/SATA-A+	49
46	N/C	PETn0/SATA-A-	47
44	N/C	GND	45
42	N/C	PERp0/SATA-B-	43
40	N/C	PERn0/SATA-B+	41
38	DEVSLP(O){0/3.3V}	GND	39
36	N/C	PETp1	37
34	N/C	PETn1	35
32	N/C	GND	33
30	N/C	PERp1	31
28	N/C	PERn1	29
26	N/C	GND	27
24	N/C	N/C	25

22	N/C	N/C	23
20	N/C	GND	21
18	3.3Vaux	N/C	19
16	3.3Vaux	N/C	17
14	3.3Vaux	GND	15
12	3.3Vaux	N/C	13
10	DAS/DSS#(I){OD}	N/C	11
8	N/C	GND	9
6	N/C	N/C	7
4	3.3Vaux	N/C	5
2	3.3Vaux	GND	3
		GND	1

Table 12: M.2 M key slot For Storage signals



Figure 13: M.2 E key slot For wireless pin-out

	Standard M.2 Key E	LcP Signals	LcP Signals	Standard M.2 Key E	
74	4	/3234		GND	75
72	4	/3234	WT_CLKP	REFCLKN1	73
70	PEWake 1#(IQ)(0/3 3V)		WT_CLKN	REFCLKP1	71
68	CLKREO1	#(IO)(0/3.3V)		GND	69
66	PERSTI	(O)(0/3.3V)	WT_DOP	PERn1	67
64	RESERVED	REFCLK0(I)(1V@38.4MHz)	WT_DON	PERp1	65
62	ALERT# (I)(0/1.8)	A4WP IRQ#		GND	63
60	I2C CLK (0)(0/1.8V)	A4WP I2C CLK	WT_D1P	PETn1	61
58	12C DATA (IO)(0/1.8)	A4WP 12C DATA	WT_D1N	PETp1	59
56	W DISABL	=		GND	5/
54	W DISABL	E2#(O)(0/3.3V)	PEWakeu	# (IO) (0/3.3V)	55
52	PERSTO	(O)(0/3.3V)	CLKREQU	# (IO)(0/3.3V)	53
50	SUSCLK(32kHz) (O)(0/3.3V)	C_P32K (3.3V Tolerant)		GND	51
- 48	COEX_TX	D (O)(0/1.8V)	RE	FCLKNO	49
46	COEX_RX	D (O)(0/1.8V)	RE	FCLKPU	4/
44	COEX3	IO)(0/1.8V)		GND	
42	CLI	nk CLK	PERIO		43
40	CLir	IK DATA	-	GND	
· 38	CLink RES	ET (O)(0/3.3V)		PETn0	
36	LPSS UART RTS (O)(0/1.8V)	/ BRI_DT (MUX'd in PCH/SoC)		PETRO	
- 34	LPSS UART CTS (I)(0/1.8V)	/ RGI_RSP (MUX'd in PCH/SoC)		GND	
32	LPSS UART Tx (O)(0/1.8V)	/ RGI_DT (MUX'd in PCH/SoC)	Conn	GND ector Key	- 22
	Conn	ector Key	Conn	ector Key	
F	Conn	ector Key	Conn	Connector Key	
L	Conn	ector Key	Conr	Connector Key	
	Conn	ector Key	WGR CIKP	SDIO Recet#(O)(0/1.8V)	23
22	LPSS UART Rx (I)(0/1.8V)	/ BRI_RSP (MUX'd in PCH/SoC)	WGR_CLKN	SDIO Wake#(1)(0/1.8V)	21
- 20	UART Wal	(e#(I)(0/3.3V)	GND	SDIO DAT3(IO)(0/1.8V)	19
18	GND	GND/LNA_EN (LcP Production)	WGR DOP	SDIO DAT2(IO)(0/1.8V)	17
16	LED2	#(I)(OD)	WGR DON	SDIO DAT1(IO)(0/1.8V)	15
- 14	PCM_OUT (0)(0/1.8V) / CLKREQ0 (MUX'd in PCH/SoC)		GND	SDIO DAT0(IO)(0/1.8V)	13
12	PCM_IN	I (I)(0/1.8V)	WGR D1P	SDIO CMD(IO) (0/1.8V)	11
10	PCM_SYNC (OI)(0/1.8V)	/RF_RESET_B (MUX'd in PCH/SoC)	WGR D1N	SDIO CLK(O)(0/1.8V)	9
8	PCM_CLK (OI)(0/1.8V)			GND	7
6	LED1	# (I)(OD)	USB D-		5
4	4	/3P3A	USB_D+		3
2	+V3P3A			GND	1

Table 13: M.2 E key slot For wireless signals



Figure 14: SATA Power Cable pin-out

Pin	Signal Name	Description
1	VCC3	Power
2	GND	Ground
3	VCC3	Power
4	GND	Ground
5	+12V	Power

Table 14:	SATA	Power	Cable	signals



Figure 15: SATA Header pin-out

Pin	Signal Name	Description
1	GND	Ground
2	SATAHDR_TXP0_C	SATA DATA Transmit(positive)
3	SATAHDR_TXN0_C	SATA DATA Transmit(negative)
4	GND	Ground
5	SATAHDR_RXN0_C	SATA DATA Receive(negative)
6	SATAHDR_RXP0_C	SATA DATA Receive(positive)
7	GND	Ground
8	G1	NC
9	G2	NC

Table 15: SATA Header signals



Pins 2&4: jumper position for 3.3V

Pins 6&4: jumper position for 5V

Pins 3&4: jumper position for 12V

#### Figure 16: Panel power Header pin-out (MB Location J20)

Pin	Signal Name	Description
1	Кеу	No pin
2	3.3V	3.3V option (default)
3	12V	12V option
4	LCD_VCC	Send voltage to connector
5	Кеу	No pin
6	5V	5V option

 Table 16: Panel power Header signal (MB Location J20)



#### Figure 17: MiAPI Header

Pin	Net name	Pin	Net name
1	MAPI_GPIO1	2	VCC
3	MAPI_GPIO2	4	MAPI_GPIO6
5	MAPI_GPIO3	6	MAPI_GPIO7
7	MAPI_GPIO4	8	MAPI_GPIO8
9	MAPI_GPIO5	10	MAPI_GPIO9
11	WD_Time	12	MAPI_GPIO10
13	Power Button	14	SMBUS_DATA
15	UART_TX	16	SMBUS_CLK
17	UART_RX	18	5VSB
19	GND	20	NA

Table 17: MiAPI Header



Figure 18: mini PCIe socket

Pin	Signal Name	Description
1	WAKE#	NC
2	3.3Vaux	Power
3	COEX1	NC
4	Ground	Ground
5	COEX2	NC
6	1.5V	Power
7	CLKREQ#	CLKREQ
8	UIM_PWR	NC
9	Ground	Ground
10	UIM_DATA	NC
11	REFCLK-	CLOCK(negative)
12	UIM_CLK	NC
13	REFCLK+	CLOCK(positive)
14	UIM_RESET	NC
15	Ground	Ground
16	UIM_VPP	NC
17	Reserved (UIM_C8)	NC
18	Ground	Ground
19	Reserved (UIM_C4)	NC
20	W_DISABLE#	NC
21	Ground	Ground
22	PERST#	Reset
23	PERn0	Receive(negative)
24	3.3Vaux	Power

25	PERp0	Receive(positive)
26	Ground	Ground
27	Ground	Ground
28	1.5V	Power
29	Ground	Ground
30	SMB_CLK_MAIN	SMbus CLOCK
31	PETn0	Transmit(negative)
32	SMB_DATA_MAIN	SMbus DATA
33	PETp0	Transmit(positive)
34	Ground	Ground
35	Ground	Ground
36	USB_D-	DATA(negative)
37	Ground	Ground
38	USB_D+	DATA(Positive)
39	3.3Vaux	Power
40	Ground	Ground
41	3.3Vaux	Power
42	LED_WWAN#	NC
43	Ground	Ground
44	LED_WLAN#	Power
45	Reserved	NC
46	LED_WPAN#	NC
47	Reserved	NC
48	1.5V	Power
49	Reserved	NC
50	Ground	Ground
51	Reserved	NC
52	3.3Vaux	Power
GND1	Ground	Ground
GND2	Ground	Ground

Table 18: MiniPCle slot For SSD



Figure 19: TPM Header

Pin	Net Name
1	VSB_3V3
2	TPM_CS2
3	TPM_MISO
4	
5	TPM_MOSI
6	PLTRST_N
7	PRIQ_N
8	GND
9	N/A
10	TPM_CLK
11	N/A
12	TPM_DET
13	N/A
14	VCC3_TPM

 Table 19: TPM Header

# MITAC Desktop Board PH14FEI BIOS Specification

# 1. MAIN PAGE

Main Advanced	Chipset	Security	Boot	Save & Exit	-
<b>BIOS Information</b>	on				Item help
<b>BIOS Vender</b>		America	an Megatr	ends	
<b>Core Version</b>		5.13			
Compliancy		UEFI 2.	6; PI 1.4		
<b>BIOS Version</b>		<b>D7980A</b>	.01		
Build Date and	Гime	04/21/20	)17		
ME FW Version		11.8.50.	3399		
Processor Inform	nation				
Intel(R) CORE(	ГМ) і3-9100	CPU @ 3.60	GHz		
Memory Inform	ation				
<b>Total Memory</b>		32768 N	<b>IB</b>		
DIMM#1		16384 N	<b>1B (DDR4</b>		
DIMM#2		16384 N	IB (DDR4		→←: Select Screen
Memory Freque	ncy	2133 MI	Hz		
					<b>↑↓: Select Item</b>
					Enter: Select
SATA1		Empty			+/- : Change Opt.
SATA2		Empty			F1: General Help
SATA3 SATA4(M 2)		Empty Empty			
<b>DAIA</b> ( <b>WI.2</b> )		Empty			
					F2: Previous Values
					F3: Optimized Defaults
System Date		[Www n	nm/dd/yyy	y]	F4: Save & Reset
System Time		[hh:mm:	ss		ESC: Exit

Field Name	BIOS Vender
Default Value	American Megatrends
Comment	This field is not selectable. There is no help text associated with it.
Field Name	Core Version
Default Value	5.12
Commont	This field is not selectable. There is no help toxt associated with it

Field Name	Compliancy
Default Value	UEFI 2.6 ; PI 1.4
Comment	This field is not selectable. There is no help text associated with it.
Field Name	BIOS Version
Default Value	Display the version of the BIOS
Comment	This field is not selectable. There is no help text associated with it.
Field Name	Build Date and Time
Default Value	Display build date of the BIOS
Comment	This field is not selectable. There is no help text associated with it.
Field Name	ME FW Version
Value	ME Firmware Version.
Comment	This field is not selectable. There is no help text associated with it.
Field Name	Processor Information
Value	Display the installed CPU brand.
Comment	This field is not selectable. There is no help text associated with it.
Field Name	Total Memory
Value	Display the installed memory size.
Comment	This field is not selectable. There is no help text associated with it.
Field Name	DIMM#[1:2]
Help	Memory in the DIMM.
Comment	This field is not selectable. There is no help text associated with it.
Field Name	Memory Frequency
Value	Display the installed memory frequency.
Comment	This field is not selectable. There is no help text associated with it.
Field Name	SATA1
Value	Display the installed SATA port device.
Comment	This field is not selectable. There is no help text associated with it.
Field Name	System Date
Default Value	[Www mm/dd/yyyy]
Possible Value	Www:Mon/Tue/Wed/Thu/Fri/Sat/Sun
	mm : 1-12
	dd:1-31
XX 1	yyyy : 1998-9999
Help	Set the Date. Use Tab to switch between Date elements.
Field Name	System Time
Dafault Valua	[hh :mm :ss]

Field Name	System Time
Default Value	[hh :mm :ss]
Possible Value	hh : 0-23
	mm : 0-59
	ss : 0-59

Help	Set the Time. Use Tab to switch between Time elements.
------	--

#### 2. ADVANCED PAGE

Main	Advanced	Chipset	Security	Boot	Save & Exit	
► CPU	Configuratio	n				Item help
► Trus	ted Computin	g				
► ACP	PI Settings					
► SMA	ART Settings					
► Supe	er IO Configu	ration				
► NCT	C6116D HW N	Ionitor				→←: Select Screen
► S5 R	TC Wake Set	tings				<b>↑↓: Select Item</b>
► NVN	Ae Configurat	ion				Enter: Select
						+/- : Change Opt
Netv	vork Stack Co	nfiguration	L			F1: General Help
				F2: Previous Values		
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
	Ţ	Version 2.18.	1264. Copyrigł	nt (C) 2017 .	American Megatren	ds, Inc.

Field Name	CPU Configuration
Help	CPU Configuration Parameters.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Trusted Computing
Help	Trusted Computing Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	ACPI Settings
Help	System ACPI Parameters.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	SMART Settings
Help	System SMART Settings.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Super IO Configuration
Help	System Super IO Chip Parameters.
Comment	Press Enter when selected to go into the associated Sub-Menu.
Field Name	NCT6116D HW Monitor

Help	Monitor hardware status
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	S5 RTC Wake Settings
Help	Enable system to wake from S5 using RTC alarm.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Network Stack Configuration
Help	Network Stack Settings.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	NVMe Configuration
Help	NVMe Device Options Setting.
Comment	Press Enter when selected to go into the associated Sub-Menu.

#### 2.1 CPU CONFIGURATION

Main Advanced	Chipset	Security	Boot	Save & Exit	
CPU Configuration	1				Item help
Туре			Intel(R) (	Core(TM) CPU	
			i3-9100 @	3.60 GHz	
ID			0x806E9		
Speed			3600 MH	Z	
L1 Data Cache			32 KB x 2		
L1 Instruction Cac	he		32 KB x 2		
L2 Cache			256 KB x	2	
L3 Cache			3MB		
L4 Cache			N/A		
VMX			Supporte	d	
SMX/TXT			Supporte	d	
					→←: Select Screen
Intel Trusted Execut	ion Techno	logy	[Disabled]	l	<b>↑↓: Select Item</b>
					Enter: Select
					+/- : Change Opt
					F1: General Help
					F2: Previous Values
					F3: Optimized Defaults
					F4: Save & Reset
					ESC: Exit

Field Name	Туре
Default Value	[Intel CPU Brand String]
Comment	This field is not selectable. There is no help text associated with it.

Field Name	ID
Default Value	Displays CPU Signature
Comment	This field is not selectable. There is no help text associated with it.
Field Name	Speed
Default Value	Displays the CPU Speed
Comment	This field is not selectable. There is no help text associated with it.

Field Name	L1 Data Cache			
Default Value	L1 Data Cache Size			
Comment	This field is not selectable. There is no help text associated with it.			
Field Name	L1 Instruction Cache			
Default Value	L1 Code Cache Size			
Comment	This field is not selectable. There is no help text associated with it.			
Field Name	L2 Cache			
Default Value	L2 Cache Size			
Comment	This field is not selectable. There is no help text associated with it.			
Field Name	L3 Cache			
Default Value	L3 Cache Size			
Comment	This field is not selectable. There is no help text associated with it.			
Field Name	L4 Cache			
Default Value	L4 Cache Size			
Comment	This field is not selectable. There is no help text associated with it.			
Field Name	VMX			
Default Value	VMX Supported or Not			
Comment	This field is not selectable. There is no help text associated with it.			
Field Name	SMX/TXT			
Default Value	SMX/TXT Supported or Not			
Comment	This field is not selectable. There is no help text associated with it.			
Field Name	Intel Trusted Execution Technology(Dependent on dTPM enable)			
Default Value	[Disabled]			
Possible Value	Enabled			
	Disabled			
Help	Enables utilization of additional hardware capabilities provided by Intel			
	(R) Trusted Execution Technology.			
	Changes require a full power cycle to take effect.			

## 2.2 TRUSTED COMPUTING (OPTIONAL)

Main	Advanced	Chipset	Security	Boot	Save & Exit	
TPN	Item help					
Veno	der : NTC					
Firn	ware Version	: 1.3				
Secu	rity Device Su	pport	[	Enable]		
Pend	ling operation		[	None]		→←: Select Screen
TPM	12.0 UEFI Spec	c Version	[	TCG 21		<b>↑↓: Select Item</b>
			L			Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
		• • • • • • •			A • 3.7 4	

Field Name	Security Device SUPPORT
Default Value	[Enable]
Possible Value	Enable
	Disable
Help	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.

Field Name	Pending operation
Default Value	[None]
Possible Value	None
	TPM Clear
Help	Schedule an Operation for the Security Device. NOTE: Your Computer
	will reboot during restart in order to change State of Security Device.

Field Name	TPM2.0 UEFI Spec Version
Default Value	[TCG_2]
Possible Value	TCG_1_2
	TCG_2
Help	Select the TCG2 Spec Version Support,TCG_1_2: the Compatible mode
	for Win8/Win10,TCG_2: Support new TCG2 protocol and event format
	for Win10 or later.

# 2.3 ACPI SETTINGS

Main	Advanced	Chipset	Security	Boot	Save & Exit		
ACP	'I Settings					Item help	
Enal	ble ACPI Auto	Configurat	tion [	[Disabled]		→←: Select Screen	
Ena	ble Hibernation	1	[	[Enabled]		↑↓: Select Item Enter: Select	
ACI	PI Sleep State		[	S3 (Suspend	to RAM)]	+/- : Change Opt	
						F1: General Help F2: Previous Values	
						F3: Optimized Defaults	
						F4: Save & Reset	
						ESC: EXII	
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Field Name	Enable ACPI Auto Configuration
Default Value	[Disabled]
Possible Value	Enabled
	Disabled
Help	Enables or Disables BIOS ACPI Auto Configuration.

Field Name	Enable Hibernation
Default Value	[Enabled]
Possible Value	Enabled
	Disabled
Help	Enables or Disables System ability to Hibernate (OS/S4 Sleep State).
	This option may be not effective with some operating systems.

Field Name	ACPI Sleep State
Default Value	[S3 (Suspend to RAM)]
Possible Value	Suspend Disabled
	S3 (Suspend to RAM)
Help	Select the highest ACPI sleep state the system will enter when the
_	SUSPEND button is pressed.

# 2.4 SMART SETTINGS

Main	Advanced	Chipset	Security	Boot	Save & Exit	
SMA	RT Settings					Item help
SMA	ART Self Test		[Dis	abled]		→←: Select Screen
						↑↓: Select Item
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
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Field Name	SMART Self Test
Default Value	[Disabled]
Possible Value	Disabled
	Enabled
Help	Run SMART Self Test on all HDDs during POST.

# 2.5 SUPER IO CONFIGURATION

Main	Advanced	Chipset	Security	Boot	Save & Exit	
SIO C	onfiguration	-	-	-	-	Item help
Super I	O Chip			NCT	6116D	
► Serial	Port 1 Confi	guration				→←: Select Screen
► Serial	Port 2 Confi	guration				↑↓: Select Item
► Serial	Port 3 Confi	guration				Enter: Select
► Serial	Port 4 Confi	guration				+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
	V	ersion 2.18.1	264. Copyright	(C) 2017 A	American Megatro	ends, Inc.

Field Name	Serial Port 1 Configuration		
Help	Set Parameters of Serial Port 1 (COMA)		
Comment	Press Enter when selected to go into the associated Sub-Menu.		

Field Name	Serial Port 2 Configuration		
Help	Set Parameters of Serial Port 2 (COMB)		
Comment	Press Enter when selected to go into the associated Sub-Menu.		

Field Name	Serial Port 3 Configuration
Help	Set Parameters of Serial Port 3 (COMC)
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Serial Port 4 Configuration		
Help	Set Parameters of Serial Port 4 (COMD)		
Comment	Press Enter when selected to go into the associated Sub-Menu.		

# 2.5.1 Serial Port 1 Configuration

Main	Advanced	Chipset	Security	Boot	Save & Exit	
Serial	Port 1 Confi	Item help				
Serial F	Port			[Ena	ibled]	→←: Select Screen
Device	Settings			IO=	3E8h; IRQ=7;	↑ ↓ : Select Item
						Enter: Select
Change	Settings			[Aut		+/- : Change Opt
Mode C	Configuration			[3T/	5R RS2321	F1: General Help
	U			-	-	F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
	Ĭ	Version 2.18.12	264. Copyright	(C) <b>2017</b> A	American Megatren	ls. Inc.

Field Name	Serial Port
Default Value	[Enabled]
Possible Value	Disabled
	Enabled
Help	Enable or Disable Serial Port(COM)

Field Name	Device Settings		
Default Value	Device Super IO COM1 Address and IRQ.		
Comment	This field is not selectable. There is no help text associated with it.		

Field Name	Change Settings
Default Value	[Auto]
Possible Value	Auto
	IO=3E8h; IRQ=7;
	IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2F0h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;
Help	Select an optimal settings for Super IO Device

Field Name	Mode Configuration
Default Value	[3T/5R RS232]
Possible Value	1T/1R RS422
	3T/5R RS232
	1T/1R RS485 TX ENABLE Low Active

	1T/1R RS485 with termination resistor TX ENABLE Low Active Disabled
Help	Configure serial port as RS232/RS422/RS485.

# 2.5.2 <u>Serial Port 2 Configuration</u>

Main	Advanced	Chipset	Security	Boot	Save & Exit		
Serial Port 2 Configuration						Item help	
Serial F	Port			[Ena	ibled]	→←: Select Screen	
Device	Settings			IO=	2E8h; IRQ=7;	↑ ↓ : Select Item	
						Enter: Select	
Change	Settings			[Au	to]	+/- : Change Opt	
Mode C	Configuration			[3T/	5R RS232]	F1: General Help	
						F2: Previous Values	
						F3: Optimized Defaults	
						F4: Save & Reset	
						ESC: Exit	
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Field Name	Serial Port
Default Value	[Enabled]
Possible Value	Disabled
	Enabled
Help	Enable or Disable Serial Port(COM)

Field Name	Device Settings
Default Value	Device Super IO COM2 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Change Settings
Default Value	[Auto]
Possible Value	Auto
	IO=2E8h; IRQ=7;
	IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2F0h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;
Help	Select an optimal settings for Super IO Device

Field Name	Mode Configuration
Default Value	[3T/5R RS232]

Possible Value	1T/1R RS422
	3T/5R RS232
	1T/1R RS485 TX ENABLE Low Active
	1T/1R RS485 with termination resistor TX ENABLE Low Active
	Disabled
Help	Configure serial port as RS232/RS422/RS485.

# 2.5.3 Serial Port 3 Configuration

Main	Advanced	Chipset	Security	Boot	Save & Exit	-
Serial	Port 3 Confi	iguration				Item help
Serial F	Port			[Enal	bled]	→←: Select Screen
Device	Settings			IO=2	2F0h; IRQ=7;	↑ ↓ : Select Item
						Enter: Select
Change	Settings			[Auto	b]	+/- : Change Opt
0	0				-	F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
	V	Version 2.18.1	264. Convright	: (C) 2017 A	American Megatre	ends. Inc.

Field Name	Serial Port
Default Value	[Enabled]
Possible Value	Disabled
	Enabled
Help	Enable or Disable Serial Port(COM)

Field Name	Device Settings
Default Value	Device Super IO COM3 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Change Settings
Default Value	[Auto]
Possible Value	Auto
	IO=2E0h; IRQ=7;
	IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2F0h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12;
Help	Select an optimal settings for Super IO Device

# 2.5.4 <u>Serial Port 4 Configuration</u>

Main	Advanced	Chipset	Security	Boot	Save & Exit	
Serial	l Port 4 Confi	iguration				Item help
Serial F	Port			[Ena	ubled]	→←: Select Screen
Device	Settings			IO=	3F8h; IRQ=4;	↑ ↓ : Select Item
						Enter: Select
Change	e Settings			[Aut	to]	+/- : Change Opt
Ū.	Ũ			_	-	F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
	7	Version 2.18.1	264. Convright	t (C) 2017 A	American Megatren	ds. Inc.

Field Name	Serial Port
Default Value	[Enabled]
Possible Value	Disabled
	Enabled
Help	Enable or Disable Serial Port(COM)

Field Name	Device Settings
Default Value	Device Super IO COM4 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Change Settings
Default Value	[Auto]
Possible Value	Auto
	IO=3F8h; IRQ=4;
	IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;
	IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;
Help	Select an optimal settings for Super IO Device

#### 2.6 NCT6116D HW MONITOR

Main	Advanced	Chipset	Security	Boot	Save & Exit	;		
PC H	ealth Status					Item help		
CPU te	emperature			: XX	°C	→←: Select Screen		
CPU V	<b>R</b> temperatu	re		: XX	°C	↑↓: Select Item		
DIMM	temperature	•		: XX	°C	Enter: Select		
CPU F	an Speed			: XXX	x RPM	+/- : Change Opt		
System	Fan Speed			: XXX	x RPM			
VCOR	E			: x.x	xx V	F1: General Help		
PCH I	O volt			: x.x	xx V			
System	Memory			: x.x	xx V	F2: Previous Values		
AVSB				: x.x	xx V	F3: Optimized Defaults		
VSB3V	7			: x.x	xx V	F4: Save & Reset		
						ESC: Exit		
	Version 2.18.1264. Copyright (C) 2017 American Megatrends, Inc.							

#### 2.7 S5 RTC WAKE SETTINGS

Main	Advanced	Chipset	Security	Boot	Save & Exit	
Wake system from S5			[Di	sabled]	Item help	
						→←: Select Screen
						↑↓: Select Item
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit

Field Name	Wake system from S5
Default Value	[Disabled]
Possible Value	Disabled
	Fixed Time
Help	Enabler or disable System wake on alarm event, Select FixedTime,
	system will wake on the hr::min::sec specified.

Field Name	Wake up hour(Show when Wake system from S5 set to Fixed Time)
Default Value	0
Possible Value	0-23
Help	Select 0-23 For example enter 3 for 3am and 15 for 3pm

Field Name	Wake up minute(Show when Wake system from S5 set to Fixed Time)
Default Value	0
Possible Value	0-59
Help	select 0-59 for Minute

Field Name	Wake up second(Show when Wake system from S5 set to Fixed Time)
Default Value	0
Possible Value	0 - 59
Help	select 0-59 for Second

## 2.8 NETWORK STACK CONFIGURATION

Main	Advanced	Chipset	Security	Boot	Save & Exit	
						Item help
Netw	vork stack		[Di	sabled]		
						→←: Select Screen
						↑↓: Select Item
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
	V	ersion 2.18.1	264. Copyright	t (C) 2017 A	American Megatrer	ıds, Inc.

Field Name	Network stack
Default Value	[Disabled]
Possible Value	Disabled
	Enabled
Help	Enable/Disable UEFI Network stack.

Field Name	Ipv4 PXE Support
Default Value	[Disabled]
Possible Value	Disabled
	Enabled
Help	Enable/Disable IPv4 PXE boot support. If disabled, IPv4 PXE boot
	support will not be available.

Field Name	Ipv6 PXE Support
Default Value	[Disabled]
Possible Value	Disabled
	Enabled
Help	Enable/Disable IPv6 PXE boot support. If disabled, IPv6 PXE boot
_	support will not be available.

# 2.9 **NVME CONFIGURATION**

Main	Advanced	Chipset	Security	Boot	Save & Exit	
NVM	e Configuratio	Item help				
No N	VME Device I	→←: Select Screen				
						↑↓: Select Item
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
	V	ds, Inc.				

## 3. CHIPSET PAGE

Comment

Main	Advanced	Chipset	Security	Boot	Save & Exit	
► Syst	em Agent (SA	Item help				
► PCH	I-IO Configura	ation				
						→←: Select Screen
						<b>↑↓: Select Item</b>
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
	V	Version 2.18.12	64. Convrigh	t (C) 2017	American Megatre	nds. Inc.

Field Name	System Agent (SA) Configuration
Help	System Agent (SA) Parameters
Comment	Press Enter when selected to go into the associated Sub-Menu.
Field Name	PCH-IO Configuration
Help	PCH Parameters

Press Enter when selected to go into the associated Sub-Menu.

# 3.1 SYSTEM AGENT (SA) CONFIGURATION

Main	Advanced	Chipset	Security	Boot	Save & Exit	
System Agent (SA) Configuration						Item help
Gra	phics Configur	ration				
						→←: Select Screen
						<b>↑↓: Select Item</b>
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
	7	Version 2.18.12	64. Copyrigl	nt (C) 201	7 American Megatre	nds, Inc.

Field Name	Graphics Configuration
Help	Graphics Configuration
Comment	Press Enter when selected to go into the associated Sub-Menu.

# 3.1.1 <u>Graphics Configuration</u>

Main	Advanced	Chipset	Security	Boot	Save & Exit		
Grap	ohics Configu	Item help					
DVM	IT Pre-Allocate	ed		[64M]			
DVM	IT Total Gfx M	lem		[256M]		→←: Select Screen	
						<b>↑↓: Select Item</b>	
						Enter: Select	
						+/- : Change Opt	
						F1: General Help	
						F2: Previous Values	
						F3: Optimized Defaults	
						F4: Save & Reset	
						ESC: Exit	
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# Field NameDVMT Pre-AllocatedDefault Value[64M]Possible Value64M /32M/F7/ 36M/ 40M/ 44M/ 48M/ 52M/ 56M/ 60MHelpSelect DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by

the Internal Graphics Device.

Field Name	DVMT Total Gfx Mem
Default Value	[256M]
Possible Value	128MB / 256MB / MAX
Help	Select DVMT5.0 Total Graphic Memory size used by the Internal
	Graphics Device.

#### 3.2 PCH-IO CONFIGURATION

Main	Advanced	Chipset	Security	Boot	Save & Exit	
PCH-I	O Configurat	tion				Item help
► SAT	A And RST Co	onfiguration				
► HD .	Audio Configu	iration				→←: Select Screen
						<b>↑↓: Select Item</b>
Wake	On LAN			[Disabled]	l	Enter: Select
Deep	Sx Power Poli	cies		[Enable in	S4-S5]	+/- : Change Opt
State	After G3			[S5 State]		F1: General Help
Chass	sis Intrusion			[Enable]		
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit

Field Name	SATA And RST Configuration
Help	SATA Device Options Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	HD Audio Configuration
Help	HD Audio Subsystem Configuration Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	DeepSx Power Policies
Default Value	[Enabled in S4-S5]
Possible Value	Enabled in S4-S5
	Disabled
Help	configure the DeepSx Mode configuration.

Field Name	Wake On LAN
Default Value	[Disabled]
Possible Value	Enabled
	Disabled
Help	Enabled/Disabled integrated LAN to wake the system.

Field Name	State After G3
Default Value	[S5 State]
Possible Value	S0 State
	S5 State
Help	Specify what state to go to when power is re-applied after a power

	failure (G3 state).		
Field Name	Chassis Intrusion		
Default Value	[Enable]		
Possible Value	Disable		
	Enable		
	Reset		
Help	Configure Chassis Intrusion.		

# 3.2.1 <u>SATA And RST Configuration</u>

Main	Advanced	Chipset	Boot	Security	Save & Exit				
SATA	And RST Co	Item help							
SATA	Mode Selecti	on		[AHCI]					
						→←: Select Screen			
						<b>↑↓: Select Item</b>			
						Enter: Select			
						+/- : Change Opt			
						F1: General Help			
						F2: Previous Values			
						F3: Optimized Defaults			
						F4: Save & Reset			
						ESC: Exit			
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Field Name	SATA Mode Selection
Value	[AHCI]
Possible Value	AHCI / Intel RST Premium With Intel Optane System Acceleration
Help	Determines how SATA controller(s) operate.

# 3.2.2 HD Audio Configuration

Main	Advanced	Chipset	Boot	Security	Save & Exit				
HD A	Audio Subsyst	Item help							
HD A	udio			[Enable]					
						→←: Select Screen			
						<b>↑↓: Select Item</b>			
						Enter: Select			
						+/- : Change Opt			
						F1: General Help			
						F2: Previous Values			
						F3: Optimized Defaults			
						F4: Save & Reset			
						ESC: Exit			
	Version 2.18.1264. Copyright (C) 2017 American Megatrends, Inc.								

Field Name	HD Audio
Value	[Enable]
Possible Value	Enable / Disable
Help	Control Detection of the HD-Audio device.
	Disabled = HDA will be unconditionally disabled
	Enable = HDA will be unconditionally enabled

# 4. **<u>SECURITY PAGE</u>**

Main	Advanced	Chipset	Security	Boot	Save & Exit			
Pass	sword Descri	Item help						
If O	nly the Admir							
then	this only lim	its access to S	letup and is					
only	asked for wh							
If O	NLY the User	's password i	s set, then thi	s				
is a	power on pass	sword and mu	ist be entered	to				
boot	or enter Setu	p. In Setup th	e User will					
have	Administrato	or rights						
The	password len	gth must be						
in th	e following ra							
Min	imum length			3				
Max	imum length			20		→←: Select Screen		
		<b>↑↓: Select Item</b>						
Adn	ninistrator Pas	ssword				Enter: Select		
User	r Password					+/- : Change Opt		
						F1: General Help		
HDI	O Security Co	onfiguration:				F2: Previous Values		
HDI	O Security dri		F3: Optimized Defaults					
		F4: Save & Reset						
► Se	ecure Boot	ESC: Exit						
►B	IOS Update							
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Field Name	Administrator Password
Help	Set Administrator Password

Field Name	User Password
Help	Set User Password.

Field Name	HDD Security drive
Help	HDD Security Configuration for selected drive
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Secure Boot
Help	Secure Boot configuration
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	BIOS Update
Help	BIOS Update support
Comment	Press Enter when selected to go into the associated Sub-Menu.

#### 4.1 HDD SECURITY

Main	Advanced	Chipset	Security	Boot	Save & Exit				
HDD	Password Des	scription :				Item help			
Allows	Allows Access to Set, Modify and Clear								
Hard D	Hard Disk User Password								
And	Master Pa	ssword.							
User Pa	ssword is ma	ndatory to Ei	nable HDD s	ecurity.					
If Maste	er password is	s installed (oj	ptional),						
It can al	lso be used to	unlock the H	IDD.						
If the 'S	Set User Passy	word' option	is hidden,						
do pow	er cycle to en	able the option	on again.						
HDD P.	ASSWORD (	CONFIGURA	ATION:						
						→←: Select Screen			
Security	y Supported	:	Yes	5		<b>↑↓: Select Item</b>			
Security	y Enabled	:	No			Enter: Select			
Security	y Locked	:	No			+/- : Change Opt			
Security	y Frozen	:	No			F1: General Help			
HDD U	ser Pwd Statu	18 :	NO	T INSTA	LLED	F2: Previous Values			
						F3: Optimized Defaults			
Set Use	Set User Password F4: Save & Reset								
	ESC: Exit								
	-								

Field Name	Set User Password
Help	Set HDD User Password. *** Advisable to Power Cycle System after Setting Hard
	Disk Passwords ***. Discard or Save changes option in setup does not have any impac
	on HDD when password is set or removed. If the 'Set HDD User Password' option is
	hidden out, do power cycle to enable the option again

#### 4.2 SECURE BOOT

Main Advanced Chi	pset	Security	Boot	Save & Exit	
System Mode		Set	up		Item help
Secure Boot		[Di	sabled]		→←: Select Screen
		No	t Active		<b>↑↓: Select Item</b>
					Enter: Select
Secure Boot Mode		[Cu	istom]		+/- : Change Opt
					F1: General Help
Restore Factory Keys					F2: Previous Values
► Reset To Setup Mode					F3: Optimized Defaults
					F4: Save & Reset
► Key Management					ESC: Exit

Field Name	Secure Boot Enable
Default Value	[Disabled]
Possible Value	Enabled
	Disabled
Help	Secure Boot feature is active if Secure Boot is Enabled. Platform Key(PK) is enrolled
	and the System is in User mode. The mode change requires platform reset

Field Name	Secure Boot Mode
Default Value	[Custom]
Possible Value	Standard
	Custom
Help	Secure Boot mode options: Standard or Custom. In Custom mode Secure Boot Policy
	variables can be configured by a physically present user without full authentication

Field Name	Key Management
Help	Enables expert users to modify Secure Boot Policy variables without full
	authentication
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	<b>Restore Factory Keys</b>	
Help	Force System to User Mode.	Install factory default Secure Boot key databases

# 4.2.1 Key Management

Main	Advanced	Chipset	Security	Boot	Save & Exit	
Ven	dor Key				Valid	Item help
Fact	tory Key Provi	sion			[Disabled]	
► Res	store Factory K	leys				
► Res	set To Setup M	ode				
► Exp	port Secure Bo	ot variable	s			
► Enr	oll Efi Image					
Dev	vice Guard read	dy				
► Rer	nove 'UEFI C.	A' from DI	3			→←: Select Screen
► Res	store DB defau	lts				<b>↑↓: Select Item</b>
						Enter: Select
Secur	e Boot variable	e	Size	Key	Key Source	+/- : Change Opt.
► Pla	atform Key(PK	) (	0	0	No Key	F1: General Help
► Ke	y Exchange K	ey	0	0	No Key	F2: Previous Values
► Au	thorized Signa	tures	0	0	No Key	F3: Optimized Defaults
► Fo	rbidden Signat	ures	0	0	No Key	F4: Save & Reset
► Au	thorized Times	Stamps	0	0	No Key	ESC: Exit
► Os	Recovery Sign	atures	0	0	No Key	

Field Name	Factory Key Provision
Default Value	[Disabled]
Possible Value	Enabled
	Disabled
Help	Install factory default Secure Boot keys after the platform reset and while the System i
-	in Setup mode

Field Name	Restore Factory Keys
Help	Force System to User Mode. Install factory default Secure Boot keys databases

Field Name	Reset to Setup Mode
Help	Delete all Secure Boot key databases from NVRAM

Field Name	Export Secure Boot variables
Help	Copy NVRAM content of Secure Boot variables to files in a root folder on a file

of steril de liee		system device
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Field Name	Enroll Efi Image
Help	Allow the image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE
	image into Authorized Signature Database (db)

Field Name	Remove 'UEFI CA' from DB
Help	Device Guard ready system must not list 'Microsoft UEFI CA' Certificate in
	Authorized Signature database (db)

Field Name	Remove DB defaults
Help	Restore DB variable to factory defaults

Field Name	Platform Key (PK)			
Default Value	Size:0, Keys, Key source: No Key			
Help	Enroll Factory Defaults or load certificates from a file:			
_	1. Public Key Certificate:			
	a)EFI_SIGNATURE_LIST			
	b)EFI_CERT_X509 (DER encoded)			
	c)EFI_CERT_RSA2048 (bin)			
	d)EFI_CERT_SHA256,384,512			
	2. Authenticated UEFI Variable			
	3.EFI PE/COFF Image(SHA256)			
	Key Source:			
	Factory,External,Mixed			
comment	Press Enter when selected to go into the associated Sub-Menu "Key Management".			

Field Name	Key Exchange Key				
Default Value	Size:0, Keys, Key source: No Key				
Help	Enroll Factory Defaults or load certificates from a file:				
	1. Public Key Certificate:				
	a)EFI_SIGNATURE_LIST				
	b)EFI_CERT_X509 (DER encoded)				
	c)EFI_CERT_RSA2048 (bin)				
	d)EFI_CERT_SHA256,384,512				
	2. Authenticated UEFI Variable				
	3.EFI PE/COFF Image(SHA256)				
	Key Source:				
	Factory,External,Mixed				
comment	Press Enter when selected to go into the associated Sub-Menu.				

Field Name	Authorized Signature	
Default Value	Size:0, Keys, Key source: No Key	
Help	Enroll Factory Defaults or load certificates from a file:	
	1. Public Key Certificate:	
	a)EFI_SIGNATURE_LIST	
	b)EFI_CERT_X509 (DER encoded)	

	c)EFI_CERT_RSA2048 (bin)
	d)EFI_CERT_SHA256,384,512
	2. Authenticated UEFI Variable
	3.EFI PE/COFF Image(SHA256)
	Key Source:
	Factory,External,Mixed
comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Forbidden Signature			
Default Value	Size:0, Keys, Key source: No Key			
Help	Enroll Factory Defaults or load certificates from a file:			
	1. Public Key Certificate:			
	a)EFI_SIGNATURE_LIST			
	b)EFI_CERT_X509 (DER encoded)			
	c)EFI_CERT_RSA2048 (bin)			
	d)EFI_CERT_SHA256,384,512			
	2. Authenticated UEFI Variable			
	3.EFI PE/COFF Image(SHA256)			
	Key Source:			
	Factory,External,Mixed			
comment	Press Enter when selected to go into the associated Sub-Menu.			

Field Name	Authorized TimeStamps			
Default Value	Size:0, Keys, Key source: No Key			
Help	Enroll Factory Defaults or load certificates from a file:			
	1. Public Key Certificate:			
	a)EFI_SIGNATURE_LIST			
	b)EFI_CERT_X509 (DER encoded)			
	c)EFI_CERT_RSA2048 (bin)			
	d)EFI_CERT_SHA256,384,512			
	2. Authenticated UEFI Variable			
	3.EFI PE/COFF Image(SHA256)			
	Key Source:			
	Factory,External,Mixed			
comment	Press Enter when selected to go into the associated Sub-Menu.			

Field Name	OsRecovery Signatures				
Default Value	Size:0, Keys, Key source: No Key				
Help	Enroll Factory Defaults or load certificates from a file:				
	1. Public Key Certificate:				
	a)EFI_SIGNATURE_LIST				
	b)EFI_CERT_X509 (DER encoded)				
	c)EFI_CERT_RSA2048 (bin)				
	d)EFI_CERT_SHA256,384,512				
	2. Authenticated UEFI Variable				
	3.EFI PE/COFF Image(SHA256)				
	Key Source:				
	Factory,External,Mixed				
comment	Press Enter when selected to go into the associated Sub-Menu.				

## 4.3 **BIOS UPDATE**

Main	Advanced	Chipset	Security	Boot	Save & Exit	
► Path	for ROM Ima	age				Item help
Notice	:					
ROM	mage must in	the root fold	er of storage	device.		→←: Select Screen
File na	me must mate	ch with curren	nt BIOS proje	ect.		<b>↑↓: Select Item</b>
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
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Field Name	Path for ROM Image
Help	Enter the path to the Secure flash option

#### 5. **<u>BOOT PAGE</u>**

Main	Advanced	Chipset	Security	Boot	Save & Exit	
Boot	Configuratio	on				Item help
Setup	Prompt Time	eout		1		
Booti	ap NumLock	State		[On]		
FIYE	ΤΟ ΒΟΟΤ ΟΙ	RDFR Prior	itios			Select Screen
Root	Option $#1$		lites	IUSBE	Hoppyl	↑ : Select Item
Boot	Option $#2$				VD1	↓. Sciect Item Enter: Select
Boot	Option $#2$				נסי וחעק/ח?	Liner. Select
Boot	Option #4			[USD ( [Hord I		F1: Conoral Holn
Boot	Option #5					F1. General Help F2. Provious Voluos
Boot	Option #6				Hard Dick]	F2: Optimized Defaults
Boot	Option #7				rk]	FJ: Sava & Desat
DOOL	Option #7			Includ	лкј	F4. Save & Resel
► USI	B Floppy Drive	BBS Priorities				ESC. EXIL
► CD	ROM/DVD Driv	ve BBS Prioriti	es			
► USI	B CDROM/DVI	D Drive BBS P	riorities			
Har	d Disk Drive BI	BS Priorities				
► USI	B Key Drive BB	<b>S</b> Priorities				
► USI	B Hard Disk Dri	ive BBS Priorit	ies			
► USI	B Lan Drive BB	S Priorities				
Net	work Drive BBS	S Priorities				

Field Name	Setup Prompt Timeout
Default Value	1
Possible Value	1~65535
Help	Number of seconds to wait for setup activation key. 65535(0xFFFF)
	means indefinite waiting.

Field Name	Bootup NumLock State
Default Value	[On]
Possible Value	On
	Off
Help	Select the keyboard NumLock state

Field Name	Boot Option #1
Default Value	[USB Floppy]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk, USB Key, USB
	Hard Disk, Network, Disable
Help	Sets the system boot order

Field Name	Boot Option #2
Default Value	[CD/DVD]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk, USB Key, USB
	Hard Disk, Network, Disable
Help	Sets the system boot order

Field Name	Boot Option #3
Default Value	[USB CD/DVD]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk, USB Key, USB
	Hard Disk, Network, Disable
Help	Sets the system boot order

Field Name	Boot Option #4
Default Value	[Hard Disk]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk, USB Key, USB
	Hard Disk, Network, Disable
Help	Sets the system boot order

Field Name	Boot Option #5
Default Value	[USB Key]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk, USB Key, USB
	Hard Disk, Network, Disable
Help	Sets the system boot order

Field Name	Boot Option #6
Default Value	[USB Hard Disk]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk, USB Key, USB
	Hard Disk, Network, Disable
Help	Sets the system boot order

Field Name	Boot Option #7
Default Value	[Network]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk, USB Key, USB
	Hard Disk, Network, Disable
Help	Sets the system boot order

Field Name	USB Floppy Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available UEFI USB
	Floppy
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	CDROM/DVD Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available
	CDROM/DVD
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	USB CD/DVD ROM Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available UEFI USB
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	USB Hard Disk Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available UEFI USB
	Hard Disk
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	USB KEY Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available UEFI USB
	Key Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Hard Disk Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available UEFI Hard
	Disk Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	NETWORK Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available UEFI NETWORK.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Main	Advanced	Chipset	Security	Boot	Save & Exit	
Boo	t Option #1		[Boo	t Device	Name 1]	Item help
Boo	t Option #2		[Boo	t Device	Name 2]	
						→←: Select Screen
						<b>↑↓: Select Item</b>
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
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#### 5.1 (LIST BOOT DEVICE TYPE) DRIVE BBS PRIORITIES

Field Name	Boot Option #1
Default Value	
Possible Value	Boot Device Name 1 of this type
Help	Sets the system boot order

Field Name	Boot Option #2
Default Value	
Possible Value	Boot Device Name 2 of this type
Help	Sets the system boot order

# 7. SAVE & EXIT PAGE

Main	Advanced	Chipset	Security	Boot	Save & Exit	
Save	Options					Item help
Disca	rd Changes a	nd Exit				
Save	Changes and	Reset				
Disca	rd Changes a	nd Reset				
Resto	re Defaults					
						→←: Select Screen
						<b>↑↓: Select Item</b>
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
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Field Name	Discard Changes and Exit
Help	Exit system setup without saving any changes.

Field Name	Save Changes and Reset
Help	Reset the system after saving the changes.

Field Name	Discard Changes and Rest
Help	Reset system setup without saving any changes.

Field Name	Restore Defaults	
Help	Restore/Load Default values for all the setup options.	

# 8. <u>RECOVERY PAGE</u> (ACTIVE FOR 4.3 SECURE FLASH UPDATE ONLY)

Main	Advanced	Chipset	Security	Boot	Save & Exit	Recovery
Please	e select block	you want to	update			Item help
Reset	NVRAM			[Disabled]	l	
► Pro	cess with flas	sh update				
						→←: Select Screen
						<b>↑↓: Select Item</b>
						Enter: Select
						+/- : Change Opt
						F1: General Help
						F2: Previous Values
						F3: Optimized Defaults
						F4: Save & Reset
						ESC: Exit
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Field Name	Reset NVRAM	
Default Value	[Disabled]	
Possible Value	Enabled	
	Disabled	
Help	Set this option to reset NVRAM to default values	

Field Name	Process with flash update
Help	Select this to start flash update