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Delta MH1-S30D User Guide



User Information

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1.1 Inspection

Please inspect the following items carefully.

- 1. Package: Make sure the package is complete.
- 2. Bubble wrap: It can protect the product. Please make sure the sticker is firmly stuck on it.
- 3. MH1-S30D: Please check if there is any damage shown on its appearance and the accessories are all attached.
- 4. Installation guide: Check if there is an installation guide.

1.2 Model Explanation

MH1	-	S30	D	-	Α	0	0	D0
(1)		(2)	(3)		(4)	(5)	(6)	(7)

(1)	Product Type	MH1 = Motion Control Hub 1 st Generation			
(2)	CPU Type	S30 = VIA	S30 = VIA Nano X2 Dual Core 1.2GHz		
(3)	Extension Interface	D = DMCNET			
(4)	Slot Interface	(B) = no extension A = 2 PCI slo s = 2 PCIE slot x	slot t 1+x1	
(5)	DRAM & Micro-SD Card Options	0	DRAM 4GB 4GB	micro-SD - 4GB	
(6)	CFast Card &SSD Options	0 1 4 7	CFast - 16GB 16GB 16GB	SSD - - 64GB 128GB	
(7)	Customer version	C	00 = Standard ve	ersion	

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2.1 Product Figure



Figure 2.1 Front View

2.2 Specifications and Dimensions of MH1-S30D

2.2.1 Electrical Specifications of MH1-S30D

Mc	odel Name	MH1-S30D
	Processor	VIA Nano X2 Dual Core 1.2GHz
Broossor	System Chip Set	VIA VX900
System	BIOS	AMI BIOS
System	System Momory	1 x 4GB DDR3L-1600 800MHz SO-DIMM
	System Memory	(Max. up to 8 GB)
	CRT	2048 x1536 / 75Hz
Display	LVDS	-
Interface	HDMI	-
	DVI	-
	Ethernet	2 x IEEE 802.3/802.3u/802.3ab 1Gbps
	Protocol	DMCNET
1/O Interface	USB	4 x USB 2.0
	Serial Port	1 x RS-232 (supports hardware flow control)
	Expansion	2 x PCI slot or
	Expansion	2 x PCIE slot x1
	CFast Card	1 x CFast Card (optional)
Storage	Micro-SD Card	1 x Micro-SD Card (optional)
	Solid State Disk	1 x 2.5" SATA SSD (optional)
Power	Input Voltage & Type	DC12~30\/+10% ATX
Requirements	input voltage a rype	DO12-00V±10/0, ////
Certification Safety		CE
Dimensi	ons (W x H x D)	127 x 175 x 250 mm
Operatio	on Temperature	0°C ~50°C
Softy	vare Support	Window Embedded, WinCE 7.0,
Software Support		Windows 7, RTX

2.2.2 Dimensions of MH1-S30D

Host dimension of MH1-S30D: 230mm (L) x 127mm (W) x 175mm (H)





Figure 2.2 Host Dimensions of MH1-S30D

Dimension of MH1-S30DRetainer: 150mm (L) x 160mm (W) x 6mm (H)



Figure 2.2 MH1-S30D– Dimensions of Base Retainer

3.1 Description of Each Part



Figure 3.1 MH1-S30D Front View

No.	Description	No.	Description
Α	Product ID Number	G	Gigabit LAN
В	Power Switch	Н	VGA Connector (D-SUB 15)
С	PCI / PCIE Extension Slot	I	External Serial Port - Comport
D	CFast CompactFlash	J	Power Port
	Memory Card Slot		
E	Connection Port for DMCNET	K	Reset Switch
F	Connection Port for USB	L	Ground Screw





Label	Description
1	1 st RS485 Transmission Signal (+)
2	1 st RS485 Transmission Signal (-)
3	2 nd RS485 Transmission Signal (+)
6	2 nd RS485 Transmission Signal (-)
7	External GND
8	External GND
LED	Driver Enable Lamp (Yellow)
Left	
LED	External Power ON Lamp (Green)
Right	

Figure 3.2 Pin Definition of DMCNET



Label	Description			
1	Transmitte	d Data + (TX+)		
2	Transmitte	d Data - (TX -)		
3	Received	Data + (RX+)		
4		NC		
5	NC			
6	Received Data - (RX -)			
7	NC			
8	NC			
LED	ACT/LINK LED (Yellow)			
Left				
LED		Orange: 1000M		
Right	SPEED LED	Green: 100M		



Figure 3.4 Connection Port of USB

Label	Description
1	VCC (+5V)
2	Data -
3	Data +
4	GND



Figure 3.5 Port Definition of VGA

Label	Description	Label	Description
1	Red	9	+5V
2	Green	10	GND
3	Blue	12	SDA
5	GND	13	Horizontal
			Sync
6	Red GND	14	Vertical Sync
7	Green GND	13	SCL
8	Blue GND	Others	NC



Figure 3.6 Port Definition of VGA

Label	Description
2	Received Data (RX)
3	Transmitted Data (TX)
5	Signal Ground (GND)
7	Request to Send (RTS)
8	Clear to Send (CTS)
Others	NC



Figure 3.7 Power Port Definition

Label	Description
1	Main Power (+24V)
2	Ground (GND)
3	Earth Ground (FGND)
4	UPS Reset Signal (S)

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4.1 Wiring of MH1-S30D Input Point

Power Supply 24VDC 0V Internal Circuit CM1 X08 W

Wiring of UPS

Figure 4.1 Wiring Example of UPS

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Chapter 5 Disassembling

5.1 Installation and Disassembling Steps

a. Installation steps of disassembling the base retainer:

- 1. Base plate in figure B and tapped hole in figure A should align.
- 2. Tighten the attached sole screws (figure C) to fix the base retainer.
- 3. The completion is shown in figure D.



С

D



b. Install PCI card:

1. Disassemble the thinner heat sink. See the figure below. There are 4 screws in total.



2. Loosen the screws and remove the cover. There are 9 screws in total, which locate at the top (figure A) and in the back (figure B).



3. Then, remove the cover. (figure C).



4. Loosen the screws inside PCI. There are 4 in total (2 on the left and 2 on the right).



5. Install the PCI card into the slot. See the figure below.



6. Tighten the screws to fix PCI Card.



7. Tighten the screws inside PCI. There are 4 in total (2 on the left and 2 on the right).



8. Tighten the screws back, which locate at the top (figure A) and in the back (figure B).



9. Install the heat sink. (Tighten the 4 screws back.)





※ Make sure the direction of two heat sinks has to be correct.

c. Install CFast Card



- 1. Loosen the screw on CFast protecting masking in the front and remove the masking.
- 2. Aim the arrowhead of CFast Card at the slot. The sticker side should face PCI card. Insert the card in parallel direction.



d. Install SSD Hardware

1. Disassemble the thinner heat sink. See the figure below. There are 4 screws in total.



2. Loosen the screws and remove the cover. There are 9 screws in total, which locate at the top (figure A) and in the back (figure B).



3. Then, remove the cover (figure C).



4. Loosen the screws inside PCI. There are 4 in total (2 on the left and 2 on the right).



5. Then, disassemble the back cover. See the figure below. Loose the two screws.



6. Place the disassembled back cover on SSD card. See the right figure below.



7. Tighten the 4 screws (attached with SSD card).



8. Then, place the SSD card into the back cover. (Follow the direction which shown in the figure.)



Follow the arrow and put the cover in.

9. Place the back cover back to the mechanism.



10. Slightly press it to insert the SSD card. Follow the arrow.



11. Tighten the screws on the back cover.



12. Tighten the screws inside PCI. There are 4 in total (2 on the left and 2 on the right).



13. Tighten the screws back, which locate at the top (figure A) and in the back (figure B).



9. Install the heat sink. (Tighten the 4 screws back.)



 $\ensuremath{\mathbbmm}$ Make sure the direction of two heat sinks has to be correct.



6.1 BIOS Program Setup

6.1.1 Entering BIOS Setup Page

"Press or <F2> to enter setup" will be shown after starting up. Press or <F2> key to enter the setup page of BIOS.

6.1.2 Use of Function Keys

$\uparrow\downarrow \longleftarrow \rightarrow :$	Move to Select Screen and Item
Enter:	Enter or Select the Item
+,-:	Adjust the value
Esc:	Exit the program
F1:	General Help
F2:	Previous Values
F3:	Optimized Defaults (Restore Defaults)
F4:	Save the current setting

6.1.3 Program Menu

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc. Main Advanced Chipset Boot Security Save & Exit

Main:	Basic Setup	
Advanced:	Advanced Setup	
Chipset:	Chipset Setup	
Boot:	Power Setup	
Security:	Security Setup	
Save & Exit:	Set up and Exit	
$(\leftarrow, \rightarrow \text{ can be used to browse each menu})$		

6.2 Main

Aptio Setup Utility - Main Advanced Chipset Boot Sec	- <mark>Copyright (C) 2011 American</mark> curity Save & Exit	Megatrends, Inc.
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time	American Megatrends 4.6.4.0 UEFI 2.0 1APBN 0.06 x64 02/25/2014 10:39:52	Choose the system default language
Memory Information Total Memory System Language	4096 MB (DDR3) [English]	
System Date System Time	[Tue 03/04/2014] [10:37:12]	++: Select Screen ↑↓: Select Item
Access Level	Administrator	Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Item	Default	Description
System Language	English	
System Date		System Date Setup
System Time		System Time Setup

6.3 Advanced

Aptio Setup Util Main Advanced Chipset Boot	ity – Copyright (C) 2011 America Security Save & Exit	an Megatrends, Inc.
Legacy OpROM Support Launch PXE OpROM Launch Storage OpROM > PCI Subsystem Settings > ACPI Settings > CPU Configuration > IDE Configuration > Other Setting > USB Configuration > Clock Generator Configuration	[Disabled] [Enabled]	PCI, PCI-X and PCI Express Settings.
▶ Demo Board		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.13.12	16. Copyright (C) 2011 American	Megatrends, Inc.

ltem	Default	Description
Launch PXE OpROM	Disabled	
Launch Storage OpROM	Enabled	
PCI Subsystem Settings		
ACPI Settings		
CPU Configuration		
IDE Configuration		
Other Setting		
USB Configuration		
Clock Generator Configuration		
Demo Board		

6.3.1 PCI Subsystem Settings

Aptio Setup Utility – (Advanced	Copyright (C) 2011 American	Megatrends, Inc.
PCI Bus Driver Version PCI ROM Priority	V 2.03.00 [EFI Compatible ROM]	In case of multiple Option ROMs (Legacy and EFI Compatible), specifies what
PCI Common Settings Settings		PCI Option ROM to launch.
PCI Latency Timer	[32 PCI Bus Clocks]	
VGA Palette Snoop	[Disabled]	
PERR# Generation	[Disabled]	
SERR# Generation	[Disabled]	
PCI Express Device Settings		
Relaxed Ordering	[Disabled]	
Extended Tag	[Disabled]	
No Shoop	[Enabled]	
Maximum Payload	[Auto]	++: Select Screen
Maximum Read Request	[Auto]	T∔: Select Item
		Enter: Select
PCI Express Link Settings		+/−: Change Opt.
ASPM Support	[Disabled]	F1: General Help
WARNING: Enabling ASPM may cause some	9	F2: Previous Values
PCI–E devices to fail		F3: Optimized Defaults
Extended Synch	[Disabled]	F4: Save & Exit
		ESC: Exit
Vanaian 0 10 1016 - Pa	pupidht (C) 2011 Amorican M	orotaondo Tao

Item	Default	Description
PCI ROM Priority	EFI Compatible ROM	
PCI Latency Timer	32 PCI Bus Clocks	
VGA Palette Snoop	Disabled	
PERR# Generation	Disabled	
SERR# Generation	Disabled	
Relaxed Ordering	Disabled	
Extended Tag	Disabled	
No Snoop	Enabled	
Maximum Payload	Auto	
Maximum Read Request	Auto	
ASPM Support	Disabled	
Extended Synch	Disabled	

6.3.2 ACPI Settings

Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
ACPI Settings		Enables or Disables BIOS ACPI
Enable ACPI Auto Configuration	[Disabled]	Huto configuration.
Enable Hibernation ACPI Sleep State Lock Legacy Resources	[Enabled] [S3 (Suspend to RAM)] [Disabled]	
		<pre> ++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2 13 1216 Co	ounight (C) 2011 American M	edatrends Inc

ltem	Default	Description
Enable ACPI Auto Configuration	Disabled	
Enable Hibernation	Enabled	
ACPI Sleep State	S3 (Suspend to RAM)	
Lock Legacy Resources	Disabled	

6.3.3 CPU Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2011 Americar	n Megatrends, Inc.
CPU Configuration		CMPXCHG8B Instruction Support
Manufacturer VIA Nano X2 U4300 @ 1.2+ GHz Processor Speed System Bus Speed Processor Stepping Processor Core Microcode Revision L1 Cache RAM L2 Cache RAM	VIA 1197 MHz 266 MHz 6fd Dual c 128 k 1024 k	
CMPXCHG8B Instruction Support Enable MSR 3A[2][0] Cx State Control Configuration	[Enabled] [Enabled]	
VIA Processor C State Conditional C4 VIA Processor C5 State	[Disabled] [Auto] [Disabled]	+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2 13 1216	Conunight (C) 2011 American k	Andrande The

ltem	Default	Description
CMPXCHG8B Instruction Support	Enabled	
Enable MSR 3A [2] [0]	Enabled	
VIA Processor C State	Disabled	
Conditional C4	Auto	
VIA Processor C5 State	Disabled	

6.3.4 IDE Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2	011 American	Megatrends, Inc.
IDE Configuration			SATA Configure as IDE or RAID.
SATA PortO SATA Port1	Not Present CFast 3ME	(4.0GB	
SATA Configure as Channel Operating Mode SATA Gen2 Support Enhance SATA PM VIA SATA Driver Cap PortO VIA SATA Driver Cap Port1 GENIII HDD Patch Support	[IDE] [Compatible] [Enabled] [Disabled] [Hot-Plug] [Hot-Plug] [Disabled]		
			<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Vancion 9 19 1916	Conunight (C) 201	1 Amonicon M	

ltem	Default	Description
SATA Configure as	IDE	
Channel Operating Mode	Compatible	
SATA Gen2 Support	Enabled	
Enhance SATA PM	Disabled	
VIA SATA Driver Cap Port0	Hot-Plug	
VIA SATA Driver Cap Port1	Hot-Plug	
GENIII HDD Patch Support	Disabled	

6.3.5 Other Setting

Aptio Setup Utility Advanced	y – Copyright (C) 2011 Ame	erican Megatrends, Inc.
Other Setting		Enable C4P Function
C4P Control DPSLP# to SLP# VRDPSLP# to DPSLP# SB Dynamic Clock Control HDAC Dynamic Clock Control CCA Burst Access CCA Burst Access Mobile Center Control AC Adapter Control PLLOK Selection Control USB S4 WakeUp CPU Fan Control EUPERP LOT6 SUPPORT	[Disabled] [10] [00] [Enabled] [Enabled] [Enabled] [Enabled] [Logic Control] [Disabled] [Auto Control] [Disabled]	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Vencion 2 13 1216	- Conuniabt (C) 2011 Amoni	con Modathondo Inc

ltem	Default	Description
C4P Control	Disabled	
DPSLP# to SLP#	10	
VRDPSLP# to DPSLP#	00	
SB Dynamic Clock Control	Enabled	
HDAC Dynamic Clock Control	Enabled	
CCA Burst Access	10	
CCA Burst Access	Enabled	
Mobile Center Control	Enabled	
AC Adapter Control	Enabled	
PLLOK Selection Control	Logic Control	
USB S4 Wakeup	Disabled	
CPU Fan Control	Auto Control	
EUPERP LOT6 SUPPORT	Disabled	

6.3.6 USB Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
USB Configuration		Enables Legacy USB support. AUTO ontion disables legacy
USB Devices: 1 Drive, 1 Keyboard		support if no USB devices are connected. DISABLE option will keep USB devices available
Legacy USB Support	[Enabled]	only for EFI applications.
USB3.0 Support	[Enabled]	
XHCI Hand-off	[Enabled]	
EHCI Hand-off	[Disabled]	
USB hardware delays and time-outs: USB transfer time-out Device reset time-out Device power-up delay Mass Storage Devices: Generic USB Flash Drive 1.00	[20 sec] [20 sec] [Auto] [Auto]	<pre>++: Select Screen t↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

ltem	Default	Description
Legacy USB Support	Enabled	
USB3.0 Support	Enabled	
XHCI Hand-off	Enabled	
EHCI Hand-off	Disabled	
USB transfer time-out	20 sec	
Device reset time-out	20 sec	
Device power-up delay	Auto	
Generic USB Flash Drive 1.00	Auto	

6.3.7 Clock Generator Configuration

Advance	Aptio Setup Utility – d	Copyright (C) 2011 American	Megatrends, Inc.
Clock Generato Clock Generato	r Enable r Program	[Enabled] [0 %]	Help for Clock Generator Enable
			<pre> ++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
	Version 2.13.1216. Co	pyright (C) 2011 American M	egatrends, Inc.

ltem	Default	Description
Clock Generator Enable	Enabled	
Clock Generator Program	0 %	

6.3.8 Demo Board

Aptio Advanced	Setup Utility – Copyright (C) 2011 American	Megatrends, Inc.
CRB Test	[Enabled]	Help for CRB Test
		<pre> ++: Select Screen tl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

ltem	Default	Description
CRB Test	Enabled	

6.4 Chipset

Aptio Setup Utility — Copyright (C) 2011 American Main Advanced <mark>Chipset</mark> Boot Security Save & Exit	Megatrends, Inc.
▶ North Bridge ▶ South Bridge	North Bridge Parameters
	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.13.1216. Copyright (C) 2011 American Me	egatrends, Inc.

ltem	Default	Description
North Bridge		
South Bridge		

6.4.1 North Bridge

Aptio Setup Chipset	Utility – Copyright (C) 2011 America	n Megatrends, Inc.
VX900 S/P/E Setting Generic Debug Enable DRAM Configration Video Configration PCIE Configuration V-Link Configration	[E->P->S] [Disabled]	Note. Choose [Manual] for each NB functions S/P/E independent setting.
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

ltem	Default	Description
VX900 S/P/E Setting	E->P->S	
Generic Debug Enable	Disabled	
DRAM Configuration		
Video Configuration		
PCIE Configuration		
V-Link Configuration		

6.4.1.1 DRAM Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2011 American	Megatrends, Inc.
Memory Information Current FSB Frequency Current DRAM Frequency Total Memory Memory Slot0 Memory Slot1 DRAM Configration DRAM Timing SDRAM CAS Latency [DDR2/DDR3] Bank Interleave Precharge to Active(Trp) [DDR2/DDR3] Active to Precharge(Tras) [DDR2/DDR3] REF to ACT/REF(Trfc) ACT(0) to ACT(1) (Trrd) Read to Precharge (Trtp) [DDR2/DDR3] Write to Read CMD (Twtr) Write Recovery Time (Twr)[DDR2/DDR DDR3 CAS Write Latency Tfaw - 4*Trrd Output Impedance Control Memory Chip ODT[DDR2/DDR3]	1066 MHz 1066 MHz 4096 MB (DDR3) 4096 MB (DDR3) Not Present [By SPD] [Auto by SPD] [77/8T] [SPD] [97/11T] [207/30T] [97/11T] [107/156T] [97/9T] [57/6T] [97/9T] [57/6T] [97/9T] [57/6T] [11T] [11T] [15T]	Select DRAM frequency. ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

ltem	Default	Description
DRAM Clock	By SPD	
DRAM Timing	Auto by SPD	
SDRAM CAS Latency	7T/8T	
Bank Interleave	SPD	
Precharge to Active (Trp)	9T/11T	
Active to Precharge (Tras)	20T/30T	
Active to CMD (Trcd)	9T/11T	
REF to ACT/REF (Tric)	10T/156T	
ACT(0) to ACT(1) (Trrd)	9T/9T	
Read to Precharge (Trtp)	5T/6T	
Write to Read CMD (Twtr)	9T/9T	
Write Recovery Time (Twr)	6T/8T	
DDR3 CAS Write Latency	11T	
Tfaw – 4*Trrd	15T	

Aptio Setup Utility - Chipset	Copyright (C) 2011 Americar	n Megatrends, Inc.
Read to Precharge (Trtp)[DDR2/DDR3 Write to Read CMD (Twtr) Write Recovery Time (Twr)[DDR2/DDR DDR3 CAS Write Latency Tfaw - 4*Trrd Output Impedance Control Memory Chip ODT[DDR2/DDR3] DDR3 Dynamic ODT BAO SEL BA1 SEL BA2 SEL VR Interleave Address Bit 0 VR Interleave Address Bit 1 Virtual Rank Interleave BA Scramble DRDY Timing VGA Share Memory (Frame Buffer) Internal VGA DVO Support Dram init Method Remap Function Control CPU Direct Access Frame Buffer DRAM Self Refresh Dynamic CKE	[5T/6T] [9T/9T] [6T/8T] [11T] [11T] [15T] [Auto] [Auto] [Auto] [A13] [A14] [A15] [A17] [A16] [A17] [A16] [Auto] [Enabled] [Default] [512 MB] [Disabled] [J] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled]	Dynamic CKE ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

ltem	Default	Description
Output Impedance Control	Normal	
Memory Chip ODT	Auto	
DDR3 Dynamic ODT	Auto	
BA0 SEL	A13	
BA1 SEL	A14	
BA2 SEL	A15	
VR Interleave Address Bit 0	A17	
VR Interleave Address Bit 1	A16	
Virtual Rank Interleave	Auto	
BA Scramble	Enabled	
DRDY Timing	Default	
VGA Share Memory (Frame Buffer)	512 MB	
Internal VGA DV0 Support	Disabled	
Dram init Method		
Remap Function Control	Enabled	
CPU Direct Access Frame Buffer	Disabled	
DRAM Self Refresh	Enabled	
Dynamic CKE	Enabled	

6.4.1.2 Video Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2011 American	Megatrends, Inc.
Video Configration		UMA Enable/Disable.
UMA Enable Select Display Device Control Select Display Device 1 Select Display Device 2 Panel Type Panel Type TV H/W Layout TV Type TV Output Connector HDTV Type Select HDTV Output Connector Enging Clock Control ECLK Frequency SSC On/Off SSC Path Selection SSC Original/FiFo Mode Display Clock SSC Linux Video IP Enablement	<pre>[Enabled] [MANUAL] [LCD] [CRT] 9 2 [Default] [NTSC] [CVBS (Composite)] [HDTV 720P] [R/G/B] [Disabled] 250 [Enabled] [External] [Original] [Mode 1 (8X)] [Enable all]</pre>	<pre>++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

ltem	Default	Description
UMA Enable	Enabled	
Select Display Device Control	MANUAL	
Select Display Device 1	LCD	
Select Display Device 2	CRT	
Panel Type	9	
Panel Type2	2	
TV H/W Layout	Default	
TV Туре	NTSC	
TV Output Connector	CVBS (Composite)	
HDTV Type	HDTV 720P	
Select HDTV Output Connector	R/G/B	
Engine Clock Control	Disabled	
SSC On/Off	Enabled	
SSC Path Selection	External	
SSC Original/FiFo Mode	Original	
Display Clock SSC	Mode 1 (8X)	
Linux Video IP Enablement	Enabled all	

6.4.1.3 PCIE Configuration

Aptio Setup Chipset	Utility – Copyright (C) 20	11 American Megatrends, Inc.
Chipset PCIE Configuration Maximum Payload Size Reset PCIE When Link Fail Reset PE0 When Link Fail Reset PE1 When Link Fail Reset PE2 When Link Fail Reset PE3 When Link Fail ASPM Support PCIE Target Link Speed PCIE Root Port PCIE PE0 Control PCIE PE1-3 Control	[Auto] [Enabled] [Enabled] [Enabled] [Enabled] [Auto] [Auto] [Enabled] [Enabled] [Enabled] [Enabled]	Select Maximum Payload Size.
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Item	Default	Description
Maximum Payload Size	Auto	
Reset PCIe When Link Fail	Enabled	
Reset PE0 When Link Fail	Enabled	
Reset PE1 When Link Fail	Enabled	
Reset PE2 When Link Fail	Enabled	
Reset PE3 When Link Fail	Enabled	
ASPM Support	Auto	
PCIE Target Link Speed	Auto	
PCIE Root Port	Enabled	
PCIE PE0 Control	Enabled	
PCIE PE1-3 Control	Enabled	

6.4.2 South Bridge

Aptio Setup Utility - Chipset	Copyright (C) 2011 Americ	an Megatrends, Inc.
		▲ Note. Choose [Manual] for each
VX900 S/P/E Setting	[E->P->S]	SB functions S/P/E independent setting.
SDIO / Card Reader Configuration		Ŭ,
SDIO Host controller	[Enabled]	
Voltage Support 1.8v	[Disabled]	
High Speed Support	[Enabled]	
Base Clock Frequency For SD Clock	[48MHz]	
Timeout Clock Frequency	[48MHz]	
SDIO PAD Slew Rate Control	[3.3V/3ns]	
Card Reader Host Controller	[Enabled]	
SD/MMC Card Control by	[SDIO Controller]	
Audia Carlinumatian		
Audio Configuration	[Freehled]	++: Select Screen
UNUMID HUHU DEVICE	[Enabled]	I+: Select Item
HD HUUIO FIFO 200 Dytes Supported	[Enabled]	+/-: Change Ont
USB Configuration		F1: General Help
OnChin UHCI 1 Device	[Enabled]	E2: Previous Values
OnChip UHCI 2 Device	[Enabled]	F3: Optimized Defaults
OnChip UHCI 3 Device	[Enabled]	F4: Save & Exit
OnChip UHCI 4 Device	[Enabled]	ESC: Exit
OnChip EHCI 1 Device	[Enabled]	
USBD Configuration		•

ltem	Default	Description
VX900 S/P/E Setting	E->P->S	
SDIO Host controller	Enabled	
Voltage Support 1.8V	Disabled	
High Speed Support	Enabled	
Base Clock Frequency For SD Clock	48MHz	
Timeout Clock Frequency	48MHz	
SDIO PAD Slew Rate Control	3.3V/3ns	
Card Reader Host Controller	Enabled	
SD/MMC Card Control by	SDIO Controller	
OnChip HDAC Device	Enabled	
HD Audio FIFO 256 Bytes Supported	Enabled	
OnChip UHCI 1 Device	Enabled	
OnChip UHCI 2 Device	Enabled	
OnChip UHCI 3 Device	Enabled	
OnChip UHCI 4 Device	Enabled	
OnChip EHCI 1 Device	Enabled	

Aptio Setup Utility — C Chipset	opyright (C) 2011 American	Megatrends, Inc.
USB Device Mode Control	[Disabled]	SMBus Clock Control
CEC Configuration OnChip CEC Device	[Disabled]	
SNMI Configuration APIC Cycle Control PCICFG Cycle Control	[CCA] [BLOCK]	
High Precision Event Timer Configurat High Precision Timer	ion [Enabled]	
SB Other Configuration WATCHDOG Timer Enable WATCHDOG Timer RUN/STOP WATCHDOG Timer ACTION WATCHDOG Timer COUNT PCI Delay Transaction	[Enabled] [Stop] [Power Off] [1023SEC] [Enabled]	<pre>++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values E2: Optimized Defoulte</pre>
Restore AU Power Loss PCI to PCI Bridge Keyboard/Mouse Wakeup Control SMBus Device Switch SMBus Clock Switch	[Power Un] [Enabled] [New SMBus Device] [128K Clock]	F3: Uptimized Defaults F4: Save & Exit ESC: Exit
Version 2 13 1216 Cor	uright (C) 2011 American Mu	egatrends Inc

ltem	Default	Description
USB Device Mode Control	Disabled	
OnChip CEC Device	Disabled	
APIC Cycle Control	CCA	
PCICFG Cycle Control	BLOCK	
High Precision Timer	Enabled	
WATCHDOG Timer Enable	Enabled	
WATCHDOG Timer RUN/STOP	Stop	
WATCHDOG Timer ACTION	Power Off	
WATCHDOG Timer COUNT	1023SEC	
PCI Delay Transaction	Enabled	
Restore AC Power Loss	Power On	
PCI to PCI Bridge	Enabled	
Keyboard/Mouse Wakeup Control	Enabled	
SMBus Device Switch	New SMBus Device	
SMBus Clock Switch	128K Clock	

Aptio Setup Utility - Chipset	Copyright (C) 2011 Americar	n Megatrends, Inc.
PCICFG Cycle Control	[BLOCK]	DVP or VCP Pad Switch
High Precision Event Timer Configura High Precision Timer	tion [Enabled]	
SB Other Configuration WATCHDOG Timer Enable WATCHDOG Timer RUN/STOP WATCHDOG Timer ACTION WATCHDOG Timer COUNT PCI Delay Transaction	[Enabled] [Stop] [Power Off] [1023SEC] [Enabled]	
Restore AC Power Loss PCI to PCI Bridge Keyboard/Mouse Wakeup Control SMBus Device Switch SMBus Clock Switch	[Last State] [Enabled] [Enabled] [New SMBus Device] [128K Clock]	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help</pre>
Peripheral Configuration OnBoard LAN Enable	[OnBoard PCIE Lan E]	F2: Previous Values F3: Optimized Defaults F4: Save & Exit
UART Configuration OnChip UART Mode IRQ3/4 Used by Legacy UART DVP or VCP Pad	[LEGACY] [UARTO/1(GFX)] [VCP]	ESC: Exit
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ltem	Default	Description
OnBoard LAN Enable	OnBoard PCIE LAN Enabled	
OnChip UART Mode	LEGACY	
IRQ3/4 Used by Legacy UART	UART0/1 (GFX)	
DVP or VCP Pad	VCP	

6.5 Boot

Aptio Setup Utility Main Advanced Chipset <mark>Boot</mark> S	<mark>– Copyright (C) 2011 America</mark> ecurity Save & Exit	n Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State	<mark>3</mark> [0n]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite
Quiet Boot	[Disabled]	waiting.
CSM16 Module Version	07.69	
GateA2O Active Option ROM Messages INT19 Trap Response CSM Support	[Upon Request] [Force BIOS] [Immediate] [Enabled]	
UEFI Boot Boot Option Priorities	[Disabled]	++: Select Screen ↑↓: Select Item
Boot Option #1	[SATA PS: CFast 3M]	Enter: Select +/-: Change Opt.
Hard Drive BBS Priorities		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.13.1216.	Copyright (C) 2011 American	Megatrends, Inc.

Item	Default	Description
Setup Prompt Timeout	3	
Bootup NumLock State	On	
Quiet Boot	Disabled	
GateA20 Active	Upon Request	
Option ROM Messages	Force BIOS	
INT19 Trap Response	Immediate	
CSM Support	Enabled	
UEFI Boot	Disabled	
Boot Option Priorities		Choose the device that you wish to use when start-up.
Hard Drive BBS Priorities		Set the priority when starting up with hard drives.

6.6 Security

Aptio Setup Utility – Copyright (C) 2011 American Main Advanced Chipset Boot <mark>Security</mark> Save & Exit	Megatrends, Inc.
Password Description	Set Setup Administrator Password
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights. The password must be 3 to 20 characters long.	
Administrator Password	
User Password	↔: Select Screen t↓: Select Item Enter: Select
HDD Security Configuration: HDD 0:CFast 3ME	+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

ltem	Default	Description
Administrator Password		Set up/change administrator password
User Password		Set up/change user password
HDD Security Configuration		Hardware drive configuration

6.7 Save & Exit

Aptio Setup Utility – Copyright (C) 2011 American Main Advanced Chipset Boot Security Save & Exit	Megatrends, Inc.
Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Options Save Changes	Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available filesystem devices
Discard Changes Restore Defaults Save as User Defaults	
Restore User Defaults	
Boot Overnide SATA PS: CFast 3ME	↔ Select Screen ↓: Select Item Enter: Select
Launch EFI Shell from filesystem device	+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

ltem	Default	Description
Save Changes and Exit		Save the current setting and exit
Discard Changes and Exit		Restore the previous setting and exit
Save Changes and Reset		Save the current setting and restart
Discard Changes and Reset		Restore previous setting and restart
Save Changes		Save the current setting
Discard Changes		Restore the previous setting
Restore Defaults		
Save as User Defaults		Save user's default setting
Restore User Defaults		Restore user's default setting
Boot Override		Force shutdown

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