

# FWS-2277

Network Appliance

User's Manual 2<sup>nd</sup> Ed

Last Updated: October 17, 2022

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### Packing List

Before setting up your product, please make sure the following items have been shipped:

ltem		Quantity
•	FWS-2277	1
•	Power adapter	1
•	Antenna	2

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

### About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the AAEON.com for the latest version of this document.

#### Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

- 1. All cautions and warnings on the device should be noted.
- All cables and adapters supplied by AAEON are certified and in accordance with the material safety laws and regulations of the country of sale. Do not use any cables or adapters not supplied by AAEON to prevent system malfunction or fires.
- 3. Make sure the power source matches the power rating of the device.
- 4. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- Always completely disconnect the power before working on the system's hardware.
- No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
- 7. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
- 8. Always disconnect this device from any AC supply before cleaning.
- 9. While cleaning, use a damp cloth instead of liquid or spray detergents.
- 10. Make sure the device is installed near a power outlet and is easily accessible.
- 11. Keep this device away from humidity.
- 12. Place the device on a solid surface during installation to prevent falls
- 13. Do not cover the openings on the device to ensure optimal heat dissipation.
- 14. Watch out for high temperatures when the system is running.
- 15. Do not touch the heat sink or heat spreader when the system is running
- 16. Never pour any liquid into the openings. This could cause fire or electric shock.

FWS-2277

- As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
- 18. If any of the following situations arises, please the contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device

19. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

#### Caution:

There is a danger of explosion if the 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 and your local government's recycling or disposal directives.

#### Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

# 产品中有毒有害物质或元素名称及含量

AAEON System

QO4-381 Rev.A0

			有	毒有害物质或	成元素	
部件名称	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)
印刷电路板		$\sim$	0	$\sim$	0	0
及其电子组件	×	0	0	0	0	0
外部信号	X	$\circ$	$\circ$	$\bigcirc$	$\circ$	$\circ$
连接器及线材	×	0	0	0	0	0
外壳	0	0	0	0	0	0
中央处理器	~	$\circ$	$\circ$	$\circ$	$\circ$	$\bigcirc$
与内存	×	0	0	0	0	0
硬盘	×	0	0	0	0	0
液晶模块	×	0	0	0	0	0
光驱	×	0	0	0	0	0
触控模块	×	0	0	0	0	0
电源	×	0	0	0	0	0
电池	×	0	0	0	0	0

本表格依据 SJ/T 11364 的规定编制。

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572标准规定的限量要求以下。

×: 表示该有害物质的某一均质材料超出了GB/T 26572的限量要求, 然而该部件 仍符合欧盟指令2011/65/EU 的规范。

备注:

一、此产品所标示之环保使用期限,系指在一般正常使用状况下。

- 二、上述部件物质中央处理器、内存、硬盘、光驱、电源为选购品。
- 三、上述部件物质液晶模块、触控模块仅一体机产品适用。

## China RoHS Requirement (EN)

#### Hazardous and Toxic Materials List

#### AAEON System

#### QO4-381 Rev.A0

	Hazardous or Toxic Materials or Elements					
Component Name	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominat ed biphenyls (PBBs)	Polybrominat ed diphenyl ethers (PBDEs)
PCB and	V	0	0	0	0	0
Components	^	0	0	0	0	0
Wires &						
Connectors for	Х	0	0	0	0	0
Ext.Connections						
Chassis	0	0	0	0	0	0
CPU & RAM	Х	0	0	0	0	0
HDD Drive	Х	0	0	0	0	0
LCD Module	Х	0	0	0	0	0
Optical Drive	Х	0	0	0	0	0
Touch Control Module	Х	0	0	0	0	0
PSU	Х	0	0	0	0	0
Battery	Х	0	0	0	0	0

This form is prepared in compliance with the provisions of SJ/T 11364.

O: The level of toxic or hazardous materials present in this component and its parts is below the limit specified by GB/T 26572.

X: The level of toxic of hazardous materials present in the component exceed the limits specified by GB/T 26572, but is still in compliance with EU Directive 2011/65/EU (RoHS 2).

Notes:

1. The Environment Friendly Use Period indicated by labelling on this product is applicable only to use under normal conditions.

2. Individual components including the CPU, RAM/memory, HDD, optical drive, and PSU are optional.

3. LCD Module and Touch Control Module only applies to certain products which feature these components.

# Table of Contents

Chapter	1 - Prod	uct Specifications	1		
1.1	Specifications				
Chapter	2 – Haro	dware Information	5		
2.1	Dim	iensions	6		
2.2	Jum	pers and Connectors	9		
2.3	List	of Jumpers	11		
	2.3.1	CMOS Setting Selection (CN19)	11		
2.4	List	of Connectors	12		
	2.4.1	SATA Power Connector (CN2)	13		
	2.4.2	Serial Port 1 Connector (RS232/RS485/RS422) (CN11)	13		
2.5	GPI	O Mapping	14		
	2.5.1	LED GPIO Mapping (LED1~3)	14		
	2.5.2	DIO Connector GPIO Mapping (CN13)	14		
	2.5.3	Switch GPIO Mapping (SW2)	15		
Chapter	3 - AMI	BIOS Setup	16		
3.1	Syst	em Test and Initialization	17		
3.2	AMI BIOS Setup1				
3.3	Setu	ıp Submenu: Main	19		
3.4	Setup Submenu: Advanced		20		
	3.4.1	Advanced: Trusted Computing	21		
	3.4.2	Advanced: CPU Configuration	23		
	3.4.3	Advanced: USB Configuration	24		
	3.4.4	Advanced: Hardware Monitor	25		
	3.4.5	Advanced: Power Management	26		
3.5	Setu	ıp submenu: Chipset	27		
	3.5.1	Chipset: North Bridge	28		

FWS-2277

	3.5.2	Chip	oset: South Bridge	
	3.5.3	Chip	oset: SCC Configuration	
3.6	5 Setu	ıp Subr	nenu: Security	
	3.6.1	Secur	ity: Secure Boot	
	3.6	5.1.1	Secure Boot: Key Management	
3.7	' Setu	ıp Subr	nenu: Boot	
3.8	8 Setu	ıp Subr	nenu: Save & Exit	
Chapter	r 4 – Drive	er Instal	lation	
4.1	Drive	er Instal	lation	

# Chapter 1

Product Specifications

## 1.1 Specifications

System	
Form Factor	Desktop Network Appliance
Processor	Intel® Celeron® Processor N3350 SoC
Chipset	SoC
System Memory	Onboard LPDDR4, 4GB
Network	
Ethernet	Intel® i211, Gigabit Ethernet x 2
Bypass	_
Display	
Graphic Controller	Intel <sup>®</sup> UHD Graphics
Connector	HDMI x 1
Storage	
HDD	—
CF/CFast/mSATA	On-board 16GB eMMC
Internal/Expansion Interface	
PCIe Slot	—
Mini-PCIe Slot	Mini-Card Full Size Slot x1
Keyboard and Mouse	_
USB	USB 3.2 Gen 1 x 2

Miscellaneous	
RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1
ТРМ	(TPM SLB9670 VQ2.0 FW7.85 Optional)
GPIO	(4 bits input, 4bits output optional)
Fan	Fan-less
MTBF (Hours)	TBD
Color	Black

Environmental	
Power Requirement	12V DC Power Input Connector non-lock, 24W
	power adapter
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10%~80% relative humidity, non-condensing
Storage Humidity	10%~80% @40°C; non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz / operation (mSATA)
	1.5 Grms/ 5 ~ 500Hz / non-operation
Shock	10 G peak acceleration (11 m sec. duration),
	operation
	20 G peak acceleration (11 m sec. duration),
	non-operation
Dimension (W x D x H)	4.53" x 4.53" x 1.26" (115mm x 115mm x 32mm)

I/O	
Front Panel	USB 3.2 Gen 1 x 2
	Power Button x 1
	Reset Button x 1
Rear Panel	DC Power Input Connector non-lock x 1
	1GbE RJ45 Ports x 2
	HDMI x 1

# Chapter 2

Hardware Information

## 2.1 Dimensions

## System











#### Board

### Component Side









Chapter 2 – Hardware Information

Vetwork Appliar

#### Solder Side



### 2.2 Jumpers and Connectors

#### Component Side



#### Solder side



## 2.3 List of Jumpers

Please refer to the table below for all of the board's jumpers that you can configure for your application

Label	Function
CN19	Clear CMOS

## 2.3.1 CMOS Setting Selection (CN19)





Normal	1-2
Clear CMOS	2-3

## 2.4 List of Connectors

Please refer to the table below for all of the board's connectors that you can configure for your application

Label	Function
CN20	DC-INPUT (9V~24V)
CN6	LAN Port 1/2 RJ45
CN7	LAN Port 3 RJ45 (optional)
HDMI1	HDMI Connector
CN9	Mini Card (option) with Micro-SIM
CN2	SATA Power Connector (only +5V) (optional)
CN16	USB 3.0 x 2
CN1	SATA Connector (optional)
CN13	DIO Connector (optional)
CN11	Serial Port 1 (optional)
LED3~1	Status LED (optional)
SW2	Software Reset
SW1	Power Button
U21	Onboard Wi-Fi Chipset (optional)
CN10	Micro-SIM (optional)
CN8	Micro-SD (optional)
CN18	Micro-USB Console (Serial Port 2) (optional)
CN3	Battery Connector
CN5	BIOS Flash Download Header
CN14	HW Reset Header
CN15	PWRBTN Header

## 2.4.1 SATA Power Connector (CN2)

Pin	Signal	Pin	Signal
1	NA	2	GND
3	GND	4	+5V

## 2.4.2 Serial Port 1 Connector (RS232/RS485/RS422) (CN11)

Pin	Signal	Pin	Signal
1	DCD (485DATA-/422TX-)	6	CTS
2	DSR	7	DTR (422RX-)
3	RXD (422RX+)	8	RI
4	RTS	9	GND
5	TXD (485DATA+/422TX+)		

## 2.5 GPIO Mapping

## 2.5.1 LED GPIO Mapping (LED1~3)

LED	On SIO81866	Color	Control	Power
	GP10	Blue	Addr 0xA00h[bit0] "0"=on,"1"=off	VSB
LED1	GP22	Red	Addr 0xA01h[bit2] "0"=on,"1"=off	VSB
_	GP23	Green	Addr 0xA01h[bit3] "0"=on,"1"=off	VSB
	GP56	Blue	Addr 0xA04h[bit6] "0"=on,"1"=off	VCC
LED2	GP54	Red	Addr 0xA04h[bit4] "0"=on,"1"=off	VSB
_	GP40	Green	Addr 0xA03h[bit0] "0"=on,"1"=off	VSB
	GP61	Blue	Addr 0xA05h[bit1] "0"=on,"1"=off	VCC
LED3	GP60	Red	Addr 0xA05h[bit0] "0"=on,"1"=off	VCC
	GP57	Green	Addr 0xA04h[bit7] "0"=on,"1"=off	VCC

## 2.5.2 DIO Connector GPIO Mapping (CN13)

Pin	Signal	GPIO Mapping	Pin	Signal	GPIO Mapping
2	Bit0	Mapping SIO GP80	7	Bit4	Mapping SIO GP84
3	Bit1	Mapping SIO GP81	8	Bit5	Mapping SIO GP85
4	Bit2	Mapping SIO GP82	9	Bit6	Mapping SIO GP86
5	Bit3	Mapping SIO GP83	10	Bit7	Mapping SIO GP87

## 2.5.3 Switch GPIO Mapping (SW2)

SW2 GPIO Mapping

Mapping SIO GP64

# Chapter 3

AMI BIOS Setup

#### 3.1 System Test and Initialization

The system uses certain routines to perform testing and initialization. If an error, fatal or non-fatal, is encountered, a few short beeps or an error message will be outputted. The board can usually continue the boot up sequence with non-fatal errors.

The system configuration verification routines check the current system configuration against the values stored in the CMOS memory. If they do not match, an error message will be outputted, in which case you will need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

- You are starting your system for the first time
- You have changed your system's hardware
- The CMOS memory has lost power and the configuration information is erased

The system's CMOS memory uses a backup battery for data retention, which is to be replaced once emptied.

#### 3.2 AMI BIOS Setup

The AMI BIOS ROM has a pre-installed Setup program that allows users to modify basic system configurations, which is stored in the battery-backed CMOS RAM and BIOS NVRAM so that the information is retained when the power is turned off.

To enter BIOS Setup, press <Del> or <F2> immediately while your computer is powering up.

The function for each interface can be found below.

Main – Date and time can be set here. Press <Tab> to switch between date elements

Advanced – Enable/ Disable boot option for legacy network devices

Chipset - For hosting bridge parameters

Boot - Enable/ Disable quiet Boot Option

Security - The setup administrator password can be set here

Save & Exit – Save your changes and exit the program

# 3.3 Setup Submenu: Main

Aptio Setup Utility – Copyright (C) 2021 American Megatrends, Inc. Main Advanced Chipset Security Boot Save & Exit			
BIOS Information FWS-2277 R1.2 (	K277AM12)(12/10/2021)	Set the Date. Use Tab to switch between Date elements.	
BIOS Vendor Compliancy	American Megatrends UEFI 2.5; PI 1.4	Vear: 2005–2099 Months: 1–12 Days: dependent on month	
System Date System Time	[Mon 12/13/2021] [08:44:13]	bagot dependent on month	
Access Level	Administrator		
		++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
Vanc	ion 2 18 1263 . Conunight (C) 2021 Americ	can Meriatrende. Inc	

## 3.4 Setup Submenu: Advanced

Main Advanced Chipset Security Boot Save & Exit	
<ul> <li>Trusted Computing</li> <li>CPU Configuration</li> <li>USB Configuration</li> <li>Hardware Monitor</li> <li>AAEON Features</li> <li>Power Management</li> </ul>	Trusted Computing Settings
	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

## 3.4.1 Advanced: Trusted Computing

Aptio Setup Utility - Advanced	Copyright (C) 2021 American	Megatrends, Inc.
TPM20 Device Found Firmware Version: Vendor: Security Device Support Active PCR banks Available PCR banks SHA-1 PCR Bank SHA256 PCR Bank	5.51 IFX [Enable] SHA-1,SHA256 SHA-1,SHA256 [Enabled] [Enabled]	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INTIA interface will not be available.
Pending operation Platform Hierarchy Storage Hierarchy Endorsement Hierarchy TFM2.0 UEFI Spec Version Physical Presence Spec Version TFM 20 InterfaceType Device Select	[None] [Enabled] [Enabled] [TG6_2] [1.3] [TIS] [Auto]	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt, F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

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Security Deice	Enable	Optimal Default, Failsafe Default	
Support	Disable		
Enables or Disables B	IOS support for security device	. O.S. will not show Security Device.	
TCG EFI protocol and	INT1A interface will not be ava	ilable.	
SHA-1 PCR Bank	Enabled	Optimal Default, Failsafe Default	
	Disabled		
Enable or Disable SH	A-1 PCR Bank		
SHA256 PCR Bank	Enabled	Optimal Default, Failsafe Default	
	Disabled		
Enable or Disable SHA256 PCR Bank.			
Pending operation	None	Optimal Default, Failsafe Default	

	TPM Clear		
Schedule an Operati	on for the Security Device. NOT	E: Your Computer will reboot	
during restart in order to change State of Security Device.			
Platform Hierarchy	Enabled	Optimal Default, Failsafe Default	
	Disabled		
Enable or Disable Pla	atform Hierarchy		
Storage Hierarchy	Enabled	Optimal Default, Failsafe Default	
	Disabled		
Enable or Disable Sto	orage Hierarchy		
Endorsement	Enabled	Optimal Default, Failsafe Default	
Hierarchy	Disabled		
Enable or Disable En	dorsement Hierarchy		
TPM 2.0 UEFI Spec	TCG_2	Optimal Default, Failsafe Default	
Version	TCG_1_2		
Select the TCH2 Spe	c Version Support.		
TCG_1_2: the Compa	tible mode for Win8/Win10		
TCG_2: Support new	TCG2 protocol and event forma	at for Win10 or later	
Physical Presence	1.3	Optimal Default, Failsafe Default	
Spec Version	1.2		
Select to Tell O.S. to s	support PPI Spec Version 1.2 or 1	1.3. Note some HCK tests might not	
support 1.3			
Device Select	Auto	Optimal Default, Failsafe Default	
	TPM 1.2		
	TPM 2.0		
TPM 1.2 will restrict s	upport to TPM 1.2 devices, TPM	1 2.0 will restrict support to TPM 2.0	
devices, Auto will sup	oport both with the default set t	to TPM 2.0 devices if not found,	
TPM 1.2 devices will	be enumerated.		

## 3.4.2 Advanced: CPU Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2021 American	Megatrends, Inc.
CPU Configuration		When enabled, a VMM can
Intel(R) Celeron(R) CPU N3350 @ 1 10	0GHz	hardware canabilities provided
CPU Signature	50609	hu Vandernool Technologu
Microcode Patch	30	by randor poor roomioroay
Max CPU Speed	1100 MHz	
Min CPU Speed	800 MHz	
Processor Cores	2	
Intel HT Technology	Not Supported	
Intel VT-x Technology	Supported	
L1 Data Cache	24 kB x 2	
L1 Code Cache	32 kB x 2	
L2 Cache	1024 kB x 2	++: Select Screen
L3 Cache	Not Present	↑↓: Select Item
		Enter: Select
Speed	1100 MHz	+/-: Change Opt.
64-bit	Supported	F1: General Help
		F2: Previous Values
Intel Virtualization Technology		F3: Optimized Defaults
VT-d	[Enabled]	F4: Save & Exit
EIST	[Disabled]	ESC: Exit
CPU Power Management Configuration		
Power Limit 1 Enable	[Disabled]	

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Intel Virtualization	Enabled	Optimal Default, Failsafe Default
Technology	Disabled	
When enabled, a VM	M can utilize the additional har	dware capabilities provided by
Vanderpool Technolo	ду	
VT-d	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable/Disable CPU	VT-d	
EIST	Enable	
	Disable	Optimal Default, Failsafe Default
Enable/Disable Intel SpeedStep		
Power Limit 1 Enable	Enable	

Disable

Enable/Disable Power Limit 1

## 3.4.3 Advanced: USB Configuration

Aptio Setup Advanced	o Utility – Copyright (C) 2021 Ame	rican Megatrends, Inc.
USB Configuration		Enables Legacy USB support.
Legacy USB Support		support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
		<pre>%: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2	18 1263 Conucidht (C) 2021 Ameri	can Mergatrands Inc

Options summary:

Legacy USB Support	Enabled	Optimal Default, Failsafe Default
	Disabled	
	Auto	
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.

## 3.4.4 Advanced: Hardware Monitor

Aptio Setup Utility	– Copyright (C) 2	021 American Mega	trends, Inc.
Haruware Monitor			
CPU DTS Temperature	: +80 °c		
System Temperature	: +52 °c		
VCORE	• +1 188 V		
VMEM	: +1.104 V		
+5V	: +4.870 V		
+3.3V	: +3.268 V		
5VDUAL	: +4.896 V		
VBAT	: +3.024 V		
		4	Calact Scheen
		t1:	Select Item
		Enter	r: Select
		+/-:	Change Opt.
		F1: 0	General Help
		F2: 1	Previous Values
		F3: 1	Optimized Defaults
		F4: 3	Save & Exit
		ESC:	Exit

## 3.4.5 Advanced: Power Management

Aptio Setup Util Advanced	ity – Copyright (C) 2021 Am	erican Megatrends, Inc.
Power Management		Select system power mode.
Power Mode Restore AC Power Loss	[ATX Type] [Last State]	
Wake Events RTC wake system from S5	[Disabled]	
		++: Select Screen ↑↓: Select Item
		Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
		ESC: Exit
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Power Mode	АТХ Туре	Optimal Default, Failsafe Default	
	АТ Туре		
Select power supply	<sup>y</sup> mode.		
Restore AC Power	Last State	Optimal Default, Failsafe Default	
Loss	Always On		
	Always Off		
RTC wake system	Disabled	Optimal Default, Failsafe Default	
from S5	Fixed Time		
	Dynamic Time		
Fixed Time : System will wake on the hr :: min :: sec specified			
Dynamic Time : System will wake on the current time + Increase minutes(s).			

# 3.5 Setup submenu: Chipset

<ul> <li>North Bridge</li> <li>South Bridge</li> <li>SCC Configuration</li> <li>**: Select Screen</li> <li>**: Select Screen</li> <li>**: Select Item</li> <li>Enter: Select</li> <li>*/-: Change Opt.</li> <li>F1: General Help</li> <li>F2: Previous Values</li> <li>F3: Optimized Defaults</li> <li>F4: Sale Exit</li> <li>ESC: Exit</li> </ul>	Aptio Setup Main Advanced Chipset	Utility – Copyright (C) 20 Security Boot Save & Exi	21 American Megatrends, Inc. t
++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	<ul> <li>North Bridge</li> <li>South Bridge</li> <li>SCC Configuration</li> </ul>		North Bridge Parameters
			++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

## 3.5.1 Chipset: North Bridge

Memory Information		Enable : Enable Integrated
Total Memory	2048 MB (LPDDR4)	Graphics Device (160) when selected as the Primary Vid Adaptor. Disable: Alwarys disable IGD
Integrated Graphics Device Primary Display	[Enable] [IGD]	
		++: Select Screen ↑↓: Select Item
		Enter: Select +/-: Change Opt. F1: General Help
		F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Integrated Graphics	Enabled	Optimal Default, Failsafe Default		
Device	Disabled			
Enable : Enable Integ	Enable : Enable Integrated Graphics Device (IGD) when selected as the Primary Video			
Adaptor.	Adaptor.			
Disable: Alwarys disable IGD				
Primary Display	IGD	Optimal Default, Failsafe Default		
	PCle			
Select which of IGD/PCI Graphics device should be Primary Display				

## 3.5.2 Chipset: South Bridge

	Aptio Setup Utility – Copyright (C) 2021 America Chipset	n Megatrends, Inc.
OS Selection	[Linux]	Select the target OS.
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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OS Selection	Windows	
	Linux	Optimal Default, Failsafe Default
Select the target OS		

# 3.5.3 Chipset: SCC Configuration

Aptio Se Chips	etup Utility – Copyright set	(C) 2021 American	Megatrends, Inc.
SCC eMMC Support (D28: eMMC Max Speed	:F0) [Enable] [HS400]		Enable/Disable SCC eMMC Support
			<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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SCC eMMC	Enabled	Optimal Default, Failsafe Default	
Support (D28:F0)	Disabled		
Enable/Disable SCC	eMMC Support		
eMMC Max Speed	HS400	Optimal Default, Failsafe Default	
	HS200		
	DDR50		
Select the eMMC max Speed allowed			

#### 3.6 Setup Submenu: Security

Aptio Setup Main Advanced Chipset	Utility – Copyright (C) 2021 Security Boot Save & Exit	American Megatrends, Inc.
Password Description		Set Setup Administrator
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 length must be in the following range:		
Minimum length	3	
Maximum length	20	++: Select Screen 11: Select Item
Setup Administrator Passwo		Enter: Select
User Password		+/-: Change Opt.
▶ Secure Boot		F1: General Heip F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### Change User/Administrator Password

You can set a User Password once an Administrator Password is set. The password will be required during boot up, or when the user enters the Setup utility. Please Note that a User Password does not provide access to many of the features in the Setup utility.

Select the password you wish to set, press Enter to open a dialog box to enter your password (you can enter no more than six letters or numbers). Press Enter to confirm your entry, after which you will be prompted to retype your password for a final confirmation. Press Enter again after you have retyped it correctly.

#### Removing the Password

Highlight this item and type in the current password. At the next dialog box press Enter to disable password protection.

## 3.6.1 Security: Secure Boot

System Mode Vendor Keys	Setup Not Modified	Secure Boot activated when: Secure Boot is enabled Blatform Key(PK) is encolled
	[Disabled] Not Active	System mode is User/Deploye and CSM is disabled
Secure Boot Customization Restore Factory Keys Reset To Setup Mode	[Custom]	
Key Management		
		++: Select Screen
		T∔: Select Item Enter: Select
		+/-: Change Opt. E1: General Heln
		F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit
		ESC: Exit

Secure Boot	Disabled	Optimal Default, Failsafe Default	
	Enabled		
Secure Boot activated when: Secure Boot is enabled Platform Key(PK) is enrolled,			
System mode is User/Deployed, and CSM is disabled			
Secure Boot	Standard		
Customization	Custom	Optimal Default, Failsafe Default	
Secure Boot Mode - Custom & Standard, Set UEFI Secure Boot Mode to STANDARD			
mode or CUSTOM mode, this change is effect after save. And after reset, the mode will			
return to STANDARD mode.			
Restore Factory	Force System to User Mode.Configure NVRAM to contain		
Keys	OEM-defined factory default Secure Boot keys		

		Provision factory default key
· Restore Factory Keys		on next re-poot only when System in Setup Mode
· Reset To Setup Mode		
· Expont Secure Boot Variables · Enroll Efi Image		
Device Guard Ready		
· Remove 'UEFI CA' trom DB · Restore DB defaults		
Secure Boot variable   Size  H	(eys  Key Source	
Platform Key(PK)   0      Key Systems   0	0 No Keys	
· Authorized Signatures]	01 No Keys	11: Select Item
· Forbidden Signatures  0	0 No Keys	Enter: Select
Authorized TimeStamps  0	0 No Keys	+/−: Change Opt.
· OsRecovery Signatures  0	0  No Keys	F1: General Help
		E3: Ontimized Defaults
		F4: Save & Exit
		ESC: Exit

#### Options summary:

Factory Key	Disabled	Optimal Default, Failsafe Default	
Provision	Enabled		
Provision factory default keys on next re-boot only when System in Setup Mode			
Restore Factory	Force System to User Mode. Configure NVRAM to contain		
Keys	OEM-defined factory default Secure Boot keys		
Enroll Efi Image	Allow the image to run in Secure Boot mode. Enroll SHA256 Hash		
	certificate of a PE image into Authorized Signature Database (db)		
Restore DB defaults	Restore DB variable to factory defaults		

#### Secure Boot Variables

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate in:

- a) EFI\_SIGNATURE\_LIST
- b) EFI\_CERT\_X509 (DER encoded)
- c) EFI\_CERT\_RSA2048 (bin)
- d) EFI\_CERT\_SHAXXX
- 2. Authenticated UEFI Variable
- 3. EFI PE/COFF Image(SHA256)

Key Source:

Default, External, Mixed

# 3.7 Setup Submenu: Boot

Aptio Setup Utility – Main Advanced Chipset Security	Copyright (C) 2021 American Boot Save & Exit	Megatrends, Inc.
Boot Configuration	1	Enables or disables Quiet Boot
Quiet Boot CSM Support Launch PXE ROM Network Stack Boot mode select	(Enabled) [Enabled] [Disabled] [Disabled] [DUAL]	
FIXED BOOT ORDER Priorities Boot Option #1 Boot Option #2	[UEFI USB Device] [UEFI Hard Disk:UEFI OS (Lilee SSM 16B v1.0 0910)1	. Splact Senace
Boot Option #3 Boot Option #4 Boot Option #5 Boot Option #6	[UEFI CD/DVD] [UEFI SD] [UEFI Network] [USB Device:Lilee SSM	H: Select Item Enter: Select +/-: Change Opt. F1: General Help E2: Proving Values
Boot Option #7 Boot Option #8 Boot Option #9 Boot Option #10	[Hard Disk] [CD/DVD] [SD:MMC - DG4016] [Network]	F3: Optimized Defaults F4: Save & Exit ESC: Exit
▶ UEFI Hard Disk Drive BBS Priorities		

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Quiet Boot	Disabled		
	Enabled	Optimal Default, Failsafe Default	
Enable or Disable Quiet Boot option.			
CSM Support	Disabled		
	Enabled	Optimal Default, Failsafe Default	
Enable or Disable CSM Support.			
Launch PXE ROM	Enabled		
	Disabled	Optimal Default, Failsafe Default	
Controls the execution of UEFI and Legacy PXE OpROM			
Network Stack	Disabled	Optimal Default, Failsafe Default	
	Enabled		

Enable/Disable UEFI Network Stack.				
PXE boot wait time		Wait	Wait time to press ESC key to abort the	
		PXE	PXE boot	
Boot mode select	oot mode select LEGACY UEFI			
	DUAL		Optimal Default, Failsafe Default	
Select boot mode LEGACY / UEFI				
UEFI Hard Disk Drive BBS Priorities.		Spe	Specifies the Boot Device Priority sequence	
		from	from available UEFI Hard Disk Drives.	
USB Drive BBS Priorities		Spe	Specifies the Boot Device Priority sequence	
		from	from available USB Drives.	
SD Drive BBS Priorities		Spe	Specifies the Boot Device Priority sequence	
		from	n available SD Drives.	

Aptio Setup Utility – Copyright (C) 2021 American Main Advanced Chipset Security Boot <mark>Save &amp; Exit</mark>	Megatrends, Inc.
Save Options	Reset the system after saving the changes.
Save Changes and Reset Discard Changes and Exit	
Default Options Restore Defaults	
	→+: Select Screen ↑↓: Select Item
	Enter: Select +/-: Change Opt.
	F1: General Help F2: Previous Values F3: Optimized Defaults
	F4: Save & Exit ESC: Exit
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# Chapter 4

Driver Installation

FWS-2277

#### 4.1 Driver Installation

Drivers for the FWS-2277 can be downloaded from the product page on the AAEON website by following this link:

https://www.aaeon.com/en/p/desktop-network-appliance-sd-wan-intel-apollo-lake-fw s-2277

Download the driver(s) you need, extract them to their respective folders and follow the steps below to install them.

#### Step 1 - Install LAN Driver

- 1. Open the Intel LAN folder
- 2. Follow the "readme" to install

#### Step 2 - Install USB UART Driver

- 1. Open the USB UART folder
- 2. Run the 2500\_installer.EXE file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically