

Revision History

Rev.	Note	Date
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1 Introduction

PCOM-B702G is the latest COM Express Type 7, Basic form factor (95mm x 95mm) Computer On Module launched by Portwell, Inc. PCOM-B702G is designed with Intel® Atom-Processor series.

2 Block Diagram



Figure 1 Block Diagram

3 Specifications

Table 1 PCOM-B702GVG SPEC

Product	> PCOM-B702G		
Form Factor	COM Express™ standard pin out Type 7 Rev. 2.1 (Basic 95 x 95mm).		
Processor	Intel®Atom-Processor-C3558		
	Intel®Atom-Processor-C3508		
	Intel®Atom-Processor-C3338		
	Intel®Atom-Processor-C3308		
BIOS	AMI Aptio5 BIOS		
Memory	> SODIMM DDR4		
	Support ECC		
	> Up to 128GB 2400MHz		
Ethernet	➢ Intel® I210IT		
	> 4 x KR(10GbE)		
Audio	Intel® High Definition Audio		
Security	> TPM		

Table 2 PCOM-B702G Specification 1-2

<continued>

I/O	\triangleright	4 PCI Express Gen3 (8.0 GT/s) configuration x1,x2
	≻	1 PCI Express x8 (PEG) up to Gen3 (8.0 GT/s) configuration x4, x8, x16
	\succ	4 x USB2.0 (480 Mbps)
	≻	4 x USB3.0 (5 Gbps)
	\triangleright	2 x SATA3.0 (6 Gbps)

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	\checkmark	GPIO / I2C / 2 Serial Ports / SMBus
Hardware Monitors	\checkmark	ITE8380 Embedded Controller, Voltage, Fan and Temperature
Power Management		ACPI 4.0
Environment	\checkmark	Operating Temperature 0 °C ~ 60 °C (processor dependent)
	\triangleright	Storage Temperature 0°C ~ +60°C
	≻	Relative Humidity 5%~95%

3.1 PCOM-B702G Processor list

PCOM-B702G Series	PCOM-B702G	PCOM-B702G -	PCOM-B702G -	PCOM-B702G
Ordering P/N	AB1-3H49	AB1-3J40	AB1-3H46	AB1-3H45
Processor Number	C3558	C3508	C3338	C3308
Cache	8 MB	8 MB	4 MB	4 MB
Instruction Set	64-bit	64-bit	64-bit	64-bit
# of Cores	4	4	2	2
# of Threads	4	4	2	2
Processor Base	22047			
Frequency	2.2 902	1.5 GHZ	1.5 GHZ	1.0 GHZ
TDP	16 W	11.5 W	9 W	9 W

3.1 PCOM-B702G Processor list

Table 3 PCOM-B702G Processor list

3.2 Supported Operating Systems

The PCOM-B702GVG supports the following operating systems.

Vendor	Operating System	Supported
Microsoft	Windows 7 (32/64bit)	
	Windows 8 (32/64bit)	
	Windows 8.1 (32/64bit)	
	Windows 10 (32/64bit)	
	Microsoft Windows 2008 R2 SP1	
	Microsoft Windows 2012	
	Microsoft Windows 2012 R2	
Linux	Fedora 22 (kernel 4.0.4-301)	
	Ubuntu 15.04 (kernel 3.11.6.4)	

Table 4 Supported OS list

3.3 Windows OS driver

Please download the drivers from Portwell download center website http://www.portwell.tw/support/download_center.php

Drivers file name	Supported Operating Systems
10GLAN_Win7_64	Windows Server 2008 R2 (64bit)
	Microsoft Windows 7 (64bit)
Chipset_Win7_8_81_32_64	Microsoft Windows 7 (32/64bit)
	Microsoft Windows 8 (32/64bit)
	Microsoft Windows 8.1 (32/64bit)
Graphics_Win7_32_64	Microsoft Windows 7 (32/64bit)
Graphics_Win8_81_32_64	Microsoft Windows 8 / 8.1 (32/64bit)
Graphic_Windows10_Driver	Microsoft Windows 10 (32/64bit)
I210LAN_Win7_8_81_32_64	Microsoft Windows 7 (32/64bit)
	Microsoft Windows 8 / 8.1 (32/64bit)
	Windows Server 2008 R2
	Microsoft Windows 2012
	Microsoft Windows 2012 R2
XHCI_Win7_32_64	Microsoft Windows 7 (32/64bit)
	Windows Server 2008 (32/64bit)
10GLAN_Win8_81_64	Microsoft Windows 8 / 8.1 (64bit)
	Microsoft Windows 2012 (64bit)
	Microsoft Windows 2012 R2 (64bit)

Table 5 Windows OS driver list

3.4 Electrical Characteristics

Input voltage	+12VDC (Nominal)
RTC Battery	
Power on mode	AT Mode & ATX Mode

Table 6 Electrical characteristics

Power Distribution



PCOM-B702G Power sequence

Figure 33-1. ACPI Cold Boot Sequence



Figure 1 Power on sequence

Figure 33-3. ACPI Shutdown Sequence



Figure 2 Shutdown sequence

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3.5 Mechanical Dimensions



Figure 3 Mechanical Dimensions - Top

Net weight

Module	.0g +/- 2%
Cooler (H/S+FAN)	.0g +/- 2%

Table 7 Weight

3.6 2x SODIMM socket design

PCOM-B702G has designed additional Memory SODIMM socket, which supports up to DDR4 128GB capacity. There are 2 SODIMM socket of channel 0 & channel 1.

3.7 Environmental Specifications

Storage Temperature	-40°C ~85°C	
Operation Temperature	0°C ~60°C	
	Extended : -40°C ~+85°C (Processor dependent)	
Storage Humidity	0%~95%	
Operation Humidity	0%~95%	

Table 8 Environmental Specifications

3.8 Ordering Guide

PCOM-B702GVG

Product	Ordering P/N	Status
PCOM-B702G-C3558	AB1-3H49	Available
PCOM-B702G-C3508	AB1-3J40	Available
PCOM-B702G-C3338	AB1-3H46	Available
PCOM-B702G-C3308	AB1-3H45	Available

Table 9 Ordering Guide - PCOM-B702G

Accessory

Accessory	Ordering P/N	Status
PCOM-B702G Heatsink	N/A	
Evaluation Carrier PCOM-C701	AB1-3J61Z	Available

Table 10 Ordering Guide - Accessory

3.9 Packaging

Package	Appearance	Size
Anti-Static bubble bag		180x135mm
White Paper Box		210x151x40mm

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Shipping Box	595x300x195mm
(10 pcs White paper box)	

4 **BIOS Setup Items**

PCOM-B702VG is equipped with the AMI BIOS stored in Flash ROM. These BIOS has a built-in Setup program that allows users to modify the basic system configuration easily. This type of information is stored in CMOS RAM so that it is retained during power-off periods. When system is turned on, PCOM-B702VG communicates with peripheral devices and checks its hardware resources against the configuration information stored in the CMOS memory. If any error is detected, or the CMOS parameters need to be initially defined, the diagnostic program will prompt the user to enter the SETUP program. Some errors are significant enough to abort the start up.

4.1 Entering Setup -- Launch System Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press key will enter BIOS setup screen.

Press to enter SETUP

If the message disappears before responding and still wish to enter Setup, please restart the system by turning it OFF and On or pressing the RESET button. It can be also restarted by pressing <Ctrl>, <Alt>, and <Delete> keys on keyboard simultaneously.

Press <F1> to Run General Help or Resume

The BIOS setup program provides a General Help screen. The menu can be easily called up from any menu by pressing <F1>. The Help screen lists all the possible keys to use and the selections for the highlighted item. Press <Esc> to exit the Help screen.

	General Help	
T1+++	: Move	
Enter	: Select	
+/-	: Value	
ESC	: Exit	
F1	: General Help	
F2	: Previous Values	
F3	: Optimized Defaults	
F4	: Save & Exit Setup	
<k></k>	: Scroll help area upwards	
<h></h>	: Scroll help area downwards	
OK		

4.2 Main

Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.MainConfigurationEvent LogsSecurityBootSave & ExitProject NamePCOM-B701GBIOS Version & Build71207T00 (12/07/2017 09:24:22)C Version & Build Da70829T00 (08/29/2007)Access LevelAdministratorMemory Information
Total Memory4096 MB (DDR4)System Language[English]

[00:19:27]

[Tue 01/01/2008]

Version 2.19.1266. Copyright (C) 2017 American Megatrends, Inc.

Figure 4 BIOS MAIN

System Date

System Time

4.3 Configuration

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Main Configuration Event Logs Security Boot Save 3 Exit		
 CPU Configuration LAN Configuration PCI/PCIE Configuration SATA Configuration USB Configuration Power Control Configuration TPM Configuration Super IO Configuration H/W Monitor Serial Port Console Redirection 	CPU Configuration Parameters	
Version 2.19.1266. Copyright (C) 2017 America	n Megatrends, Inc.	

Figure 5 BIOS CONFIGURATION

CPU

Aptio Setup Uti Configuratio	lity — Copyright (C) 201 [.] n	7 American Megatrends, Inc.
CPU Configuration Processor Version Intel(R) Atom(TM) C EIST (GV3) Turbo CPU C State	PU C3308 @ 1.60GHz [Enable] [Enable] [Disable]	Enable/Disable EIST. GV3 and TM1 must be enabled for TM2 to be available. GV3 must be enabled for Turbo. Auto - Enable for B0 CPU stepping, all others disabled, change **: Select Screen 14: Select Item Enter: Select t/-: Change Opt
		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.12	66. Copyright (C) 2017 A	merican Megatrends, Inc.

Figure 12 BIOS CPU

LAN

Aptio Setup Utility – Configuration	Copyright (C) 2016 American	Megatrends, Inc.
LAN Configuration		Intel I210 Controller
Intel Ethernet Controller WGI210AT LAN MAC Address Intel(R) Ethernet Connection I210 Wake on LAN I210	00-90-FB-4E-71-9D [Enabled] [Disabled]	
		<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit F12: Capture Screen ESC: Exit</pre>
Version 2.17.1254. Co	pyright (C) 2016 American Me	egatrends, Inc.

Figure 13 LAN

PCIE



Figure 14 PCIE

SATA

SATA Configuration SATA 1 Port 2 Device Information: Device Size:	[Not Installed] [Unknown]	Enables/Disables SATA Controller port if supported by current cpu SKU.
Hot plug SATA 1 Port 3	[Enabled] [Enabled]	
Device Information: Device Size: Enable/disable port Hot plug	[Not Installed] [Unknown] [Enabled] [Enabled]	++: Select Screen 1 : Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Figure 15 BIOS SATA

USB

Aptio Setup Utility Configuration	– Copyright (C) 2017 Amer	ican Megatrends, Inc.
USB Configuration		Enables Legacy USB
USB Controllers:		disables legacy support
1 XHCI		if no USB devices are
USB Devices:		connected, DISABLE
1 Keyboard, 1 Mou	ise, 1 Hub	option will keep USB
		devices available only
Common USB Configuratio	n	for EFI applications.
Legacy USB Support	[Enabled]	
XHCI Hand-off	[Enabled]	
USB Mass Storage Driv	[Enabled]	↔: Select Screen
Port 60/64 Emulation	[Enabled]	↑↓: Select Item
		Enter: Select
USB hardware delays a		+/-: Change Opt.
USB transfer time-out	[20 sec]	F1: General Help
Device reset time-out	[20 sec]	F2: Previous Values
Device power-up delay	[Auto]	F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
Version 2, 10, 1000	Convertable (C) 2017 America	an Megatrends. Inc.

Figure 16 BIOS USB

Power control

Configuration	American Megatrends, Inc.
Power Control Configuration	Enables or Disables System ability to
Enable Hibernation [Enabled] State After G3 [Soft Strap]	Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems.
	++: Select Screen †4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit

Figure 17 BIOS POWER CONTROL

TPM

Aptio Setup Utili Configuration	ity – Copyright (C) 2016 A	American Megatrends, Inc.
TPM Configuration TPM v1.2 Support Current Status Information SUPPORT TURNED OFF	[Enable]	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.
		<pre>**: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit F12: Capture Screen ESC: Exit</pre>
Version 2.17.125	54. Copyright (C) 2016 Ame	erican Megatrends, Inc.

Figure 18 BIOS TPM

Super IO

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Configuration		
Super IO Configuration Serial Port 1 Configura Module Serial Port 1 Device Settings Module Serial Port 2 Device Settings	tion [Enabled] IO=3F8h; IRQ=4; [Enabled] IO=3E8h; IRQ=3;	Enable or Disable Serial Port (COM)
		<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>

Figure 19 BIOS SUPER IO

HW Monitor

Aptio Setup Utility Configuration	– Copyright (C) 2017 Ameri	can Megatrends, Inc.
System temperature1 System temperature2 Fan1 Speed Fan2 Speed Vcore +3.3V +5V +12V VDIMM	: +37 % N/A : 42006 RPM : N/A : +1.014 V : +3.390 V : +5.136 V : +11.682 V : +1.215 V	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.19.1266.	Copyright (C) 2017 America	in Megatrendo, Inc.

Figure 20 BIOS HW MONITOR

Serial Port



Figure 21 BIOS SERIAL PORT

Security

Passuand Descriptio	20	
If ONLY the Administ then this only limi only asked for when If ONLY the User's is a power on passu boot or enter Setup have Administrator	strator's password is set, its access to Setup and is entering Setup. password is set, then this word and must be entered to b. In Setup the User will rights.	Set Administrator Password
The password length	must be	
in the following ra	inge:	++: Select Screen
Minimum length	3	T↓: Select Item
Maximum length	20	Enter: Select +/-: Change Opt.
		F1: General Help
User Password		F2: Previous Values F3: Optimized Defaults
Secure Boot		F4: Save & Exit ESC: Exit

Figure 22 BIOS Security

4.4 Boot

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Main Configuration Event Logs Security <mark>Boot</mark> Save & Exit			
Boot Configuration Setup Prompt Timeout Bootup NumLock State Post Report Summary Screen CSM Support Quiet Boot HDD BootSector Write	3 [On] [Disabled] [Disabled] [Disabled] [Disabled] [Normal]	▲ Number of seconds to wait for setup activation key. 65535(0×FFFF) means indefinite waiting.	
Boot mode select FIXED BOOT ORDER Prior Boot Option #1 Boot Option #2 Boot Option #3 Boot Option #4 Boot Option #5 Boot Option #6	[UEFI] ities [Hard Disk] [CD/DVD] [USB Hard Disk] [USB CD/DVD] [USB Key] [USB Floppy]	<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 2,19,1266	. Copyright (C) 2017 Ame	erican Megatrends, Inc.	

Figure 23 BIOS BOOT

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4.5 Event Logs

Aptio Setup Utility – Copyright (C) 2016 America Main Configuration Security Boot Event Logs Save & Exit	n Megatrends, Inc.
Change Smbios Event Log Settings View Smbios Event Log	Press <enter> to change the Smbios Event Log configuration.</enter>
	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit F12: Capture Screen ESC: Exit</pre>
Version 2.17.1254. Copyright (C) 2016 American	Megatrends, Inc.

Figure 24 BIOS Event Logs

4.6 Save & Exit

Aptio Setup Utility – Copyright (C) 2016 American Main Configuration Security Boot Event Logs Save & Exit	Megatrends, Inc.
Save Changes and Reset Discard Changes and Reset	
Restore Default Values	
Boot Device Priority JetFlashTranscend 8GB 8.07	
	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit F12: Capture Screen ESC: Exit</pre>
Version 2.17.1254. Copyright (C) 2016 American Me	gatrends, Inc.

Figure 25 BIOS SAVE & EXIT

5 System Resources

LPC

Device	I/O Address	Note
Embedded Controller (ITE8528)	0x6E / 0x6F	EC Address
	0x62 / 0x66	EC ACPI CMD Port
	0x200 / 0x201	EC BRAM Port for I2C function
	0x1300~0x13FF	EC LPC IO Space
	0x3F8~0x3FF	EC UART1
	0x3E8~0x3EF	EC UART2
Carrier SIO	0x2E / 0x2F	W83627UGH Address
	0x3F0~0x3F8	SIO UART1
	0x2F0~0x2F8	SIO UART3

Table 11 System Resources

6 **BIOS Update**

BIOS/EC DOS Update SOP process

Step 1. Create a DOS USB DOK. (Must be FAT or FAT32 format).

Step 2. Unzip update file to the DOS USB DOK.



Step 3. Plug the DOS USB DOK into the target system and boot from the DOS USB DOK.



Step 4. Under the update file folder, type command : "update" and press enter.

Microsoft (C)Coj	t(R) Window pyright Mic	s 98 rosoft C	orp 198:	1-1999.
C:>>dir				
Volume i Volume i Director	in drive C Serial Numb ry of C:\	is 1G DO er is 54	S 58-DC5E	
FLASH README UPDATE	EXE IXI BAT 3 file(s) 0 dir(s)	66,884 513 75 1,005,1	09-24-1 09-24-1 11-22-1 67,472 b 37,920 b	.5 2:29p .5 2:29p .1 10:30a ytes ytes free
C:>>updat	te_			

Step 5. The update process will start and you can see the updating progress. Once finished, please power off and restart the system.



	Intel (R) Flash Programming Tool. Version: 18.8.38.1054 Copyright (c) 2007 – 2014, Intel Corporation. All rights reserved.
Intel (R) Flash Programming Tool, Version: 10.0.30.1054 Copyright (c) 2007 - 2014, Intel Corporation, All rights reserved	Platform: Intel(R) QM87 Express Chipset Reading HSFSTS register Flash Descriptor: Valid Flash Devices Found
Platform: Intel(R) QM87 Express Chipset Reading HSFSTS register Flash Descriptor: Valid	H25Q128BV ID:0xEF4018 Size: 16304KB (131072Kb) PDR Region does not exist.
Flash Devices Found H25Q128BV ID:0xEF4018 Size: 16384KB (131072Kb) PDR Region does not exist.	- Erasing Flash Block [0x1000000] - 100% complete. - Programming Flash [0x1000000] 16384KB of 16384KB - 100% complete. - Verifying Flash [0x1000000] 16384KB of 16384KB - 100% complete. RESULT: The data is identical
- Erasing Flash Block [0x1000000] - 100% complete. _ Programming Flash [0xAB8540] 10977KB of 16384KB - 67% complete.	FPT Operation Passed

<End of BIOS/EC DOS update process>

BIOS/EC UEFI Update SOP process

Step 1. Prepare a USB DOK. (Must be FAT or FAT32 format).

Step 2. Unzip update file to the USB DOK.



Step 3. Select UEFI boot mode in the BIOS boot menu and save, then restart the system.

Aptio Setup Utility Main Configuration Security B	– Copyright (C) 2016 American pot Save & Exit	n Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State GateA20 Active Option ROM Messages	1 [On] [Upon Request] [Force BIOS]	Select boot mode LEGACY/UEFI
Full screen Logo	[Disabled]	
Post Report Summary Screen Fast Boot	[Disabled] [Disabled] Boot mode select	
Boot mode select	UEFI	++: Select Screen
FIXED BOOT ORDER Priorities		↑↓: Select Item
Boot Option #1	[Hard Disk]	Enter: Select
Boot Option #2	[USB Key:JetFlashTra]	+/-: Change Opt.
Boot Option #3	[USB Floppy]	F1: General Help
Boot Option #4	[USB_CD/DVD]	F2: Previous Values
Boot Option #5	[USB Hard Disk]	F3: Optimized Defaults
Boot Option #6	[USB Lan]	F4: Save & Exit
Boot Option #7	[CD/DVD]	ESC: Exit
Boot Uption #8	[Network]	
▶ USB Key Drive BBS Priorities		
Version 2.17.1254.	Copyright (C) 2016 American M	Megatrends, Inc.

Step 4. Plug the USB DOK into the target system and boot from UEFI Shell.

Aptio Setup Utility – Copyright (C) 2016 American Megatrends, Inc. Main Configuration Security Boot Save & Exit	
Save Changes and Reset Discard Changes and Reset Restore Defaults Boot Override	Attempts to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices
JetFlashTranscend 8GB 8.07	
Launch EFI Shell from filesystem device	
	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1254. Copyright (C) 2016 American Megatrends, Inc.	

Step 5. Under the UEFI shell, direct to your USB DOK, below is an example uses fs0. Then direct to the folder with updated file and type command : "update" and press enter.

EFI Shell version 2.40 [5.10]
Surrent running mode 1.1.2
Device mapping table
fs0 :Removable HardDisk - Alias hd18a0c0b b1k0
PciRoct(0x0)/Pci(0x10,0x0)/USB(0x0,0x0)/USB(0x2,0x0)/HD(1,MBR,0xEB7R8CCE,0x25,0x15,0x15,0x15,0x15,0x15,0x15,0x15,0x1
bik0 :Removable HardDisk - Alias hd18a0c0b fs0
PciRoot(0x0)/Pci(0x1D,0x0)/USB(0x0,0x0)/USB(0x2,0x0)/HD(1,MBR.0xFB7B800F.0xFF
bik1 :Handbisk - Alias (null)
PC1R00t(0x0)/Pc1(0x1F,0x2)/Sata(0x0,0xFFFF,0x0)/HD(1,M8R,0x4F243945,0x800,0xr46243945
DIK2 :HardDisk - Alias (null)
PCIROOT(0x0)/PCI(0x1F,0x2)/Sata(0x0,0xFFF,0x0)/HD(2,MBR,0x4F243949,0x6169900,0x1616900,0x16000,0x16000,0x1600000000000000000
Palbast (and the first of the f
httd://locktopy/rc1(0x1F,0x2)/Sata(0x0,0xFFFF,0x0)/HD(3,MBR,0x4E243949_0x19896900_0x19
Britent (und) (und) (und) (und) (und)
blk5 :Removable BlochDoutes allow0,0xFFFF,0x0)
PEIBORITONO (000) PEICONTE ALIAS (null)
(0x2,0x0)/USB(0x2,0x0)/USB(0x2,0x0)
Press ESC in 1 seconds to skip statute and
Shell> fs0:
EFI Shell version 2.40 [5.10]
Current running mode 1.1.2
Device mapping table
fs0 :Removable HandDisk - Alias hd18a0cob blko
PcIRoot(0x0)/PcI(0x1D,0x0)/USB(0x0,0x0)/USB(0x2,0x0)/HD(1,MBR,0xE87B8CCE,0x9E,0x1E1761)
biko :Removable Hardbisk - Alias hd18a0cob fso
PC1R00T(0x0)/PC1(0x10,0x0)/USB(0x0,0x0)/USB(0x2,0x0)/HD(1,MBR,0xEB7B8CCE,0x3F,0x1F17c1)
DIKI HARDUISK - Alias (null)
blk2_Haddlid(xx)/FC1(0x1F,0x2)/Sata(0x0,0xFFFF,0x0)/HD(1,MBR,0x4E243949,0x800,0x6148000)
Pr (Part (on)) Pr (and and and and and and and and and and
hts: HandbickGliss (www.)/Sata(0x0,0xFFFF,0x0)/HD(2,MBR,0x4E243949,0x61A8800.0x136FE000)
PriBat (0x0) (Pri (0x12) (Pri (0x2) (Pri (0x2))
blk4 (BlockDevice _ Alies (Aut))
Primot(0x0)/Pri/(0x15,0x2)/Pot-/0.0 A men-
blk5 :Removable BlockDevice - Alles (avi)
PciRot(0x0)/Pci(0x10,0x0)(UER(0x10,0x0))
(0x2,0x0)/USB(0x2,0x0)
Press ESC in 1 seconds to skip startup nsh any other terms
Shell> fso:
150:10 Cd 51214EFI
fs0:\5121dEET. update

Step 6. The updating process will start and you can see the updating progress. Once finished, please power off and restart the system.



<End of BIOS/EC UEFI update process>

7 PORTWELL Software Tool

PORTWELL Evaluation Tool (PET)

The PORTWELL Evaluation Tool (PET) is an API which PORTWELL's customers can access the GPIO, I2C, SMBus, etc under Windows and Linux OS. For more information please contact PORTWELL.

PORTWELL BIOS web Tool (PBT)

The PORTWELL BIOS web Tool (PBT) is a brand new on-line utility innovated by PORTWELL. PBT now is available for PORTWELL's premiere customers who are able to <u>add customized BIOS logo</u> and <u>change BIOS default settings</u> on American Megatrends (AMI) BIOS. Please contact PORTWELL for more information.

PORTWELL EC Auto Test Tool (PECAT)

The PORTWELL EC Auto Test Tool (PECAT) is a brand new utility innovated by PORTWELL. PECAT now is available for PORTWELL's premiere customers, who are able to <u>Test Embedded Controller Function</u> in UEFI Mode. Please contact PORTWELL for more information.

8 Industry Specifications

The list below provides links to industry specifications that apply to PORTWELL modules.

Low Pin Count Interface Specification, Revision 1.0 (LPC) <u>http://www.intel.com/design/chipsets/industry/lpc.htm</u> Universal Serial Bus (USB) Specification, Revision 2.0 <u>http://www.usb.org/home</u> PCI Specification, Revision 2.3 <u>https://www.pcisig.com/specifications</u> Serial ATA Specification, Revision 3.0 <u>http://www.serialata.org/</u> PICMG® COM Express Module™ Base Specification <u>http://www.pcisig.com/specifications</u> PCI Express Base Specification, Revision 2.0 <u>https://www.pcisig.com/specifications</u>