





# **M2A-00B**

M.2 Out Of Band Module Compact BMC (cBMC) User's Manual

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# FCC and DOC Statement on Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- · Reorient or relocate the receiving antenna.
- · Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- · Consult the dealer or an experienced radio TV technician for help.

# **Notice:**

- 1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- 2. Shielded interface cables must be used in order to comply with the emission limits.

# **Table of Contents**

Chapter 1 - Introduction	5
What's OOB (Out-Of-Band) Management	5
Key Features	
M.2 KEY A cBMC	6
Chapter 2 - Getting Started	7
Hardware Requirements	7
System Requirements	7
OOB Normal Boot	
Default Password Setting	
Remote Control PC Power Un/Uff	
PC Power On/Off Status Check	
Turn On/Off PC Remotely	
Perform a Timed Force Shutdown	/   17
Remote Hardware Monitor Log (Super I/O)	
Super I/O Log	
How to Export Super I/O Logs From OOB	
Using USB Storage / MicroSD Card to run actions	20
The shell scripts for USB storage	
The shell scripts for MicroSD card	
Formatting a microSD Card under OOB	
Chanter 3 - BIOS	21
Demote DIOC Lindete	
Remote BIOS Update Remote BIOS Update (Via Teraterm)	
Check BIOS Set Un from USB Storage	23 24
	<u>ح</u> ¬
Chapter 4 - OOB IP Address Change	27
SSH	27
Console Redirection	

# **About this Manual**

This manual can be downloaded from the website.

The manual is subject to change and update without notice, and may be based on editions that do not resemble your actual products. Please visit our website or contact our sales representatives for the latest editions.

# Warranty

- 1. Warranty does not cover damages or failures that occur from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.
- 2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.
- 3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.
- 4. We will not be liable for any indirect, special, incidental or consequential damages to the product that has been modified or altered.

# **Static Electricity Precautions**

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

- 1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.
- 2. Wear an antistatic wrist strap.
- 3. Do all preparation work on a static-free surface.
- 4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.
- 5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.

Important:
Electrostat
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workstatio

Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

# **Safety Measures**

- To avoid damage to the system, use the correct AC input voltage range.
- To reduce the risk of electric shock, unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

# **Chapter 1 - Introduction**

### ► What's OOB (Out-Of-Band) Management

As Industrial IoT demands rise in recent decades, the number of connected IoT devices drastically grow. However, the personnel responsible for equipment maintenance cannot meet the growing numbers of IoT devices; additionally, unexpected factors occur, e.g. the global pandemic. It seems like it is harder to maintain and repair the equipment in a timely manner.

Remote management without running OS. Out-of-band (OOB) technology can timely predict equipment status before the shutdown and efficiently activate OS auto-backup and recovery despite host crashes. Furthermore, the data of device health status are collected automatically to the cloud, and users can easily monitor all connected devices through a customizable UX dashboard.

#### **Key Features**

- ► Open SSH login
- Remote power on/off & reset control
- Remote hardware monitor log
- Recovery (Factory Mode)
- Remote BIOS setup & uefi shell (serial over lan)
- Remote BIOS update SPI-NAND
- Remote BIOS update SOL & DFI USB-Storage
- Change OOB IP address



# **Chapter 2 - Getting Started**

Please follow the steps to configure M2A-00B.

#### ► Hardware Requirements



#### **System Requirements**

- The remote PC can remotely control the DFI system which installed OOB feature. Remote PC and DFI system shall be in the same network domain
- To avoid setting OOB's power\_button.sh as a power on/off function, please make sure to choose 'shut down' from 'When I press the power button:' on System Settings.



TeraTerm is already included in the DFI system.

#### OOB Normal Boot

#### Step 1:

Make sure the switch 1 & 2 change to off.



#### Step 2:

Start up the main board.

It takes about 2 minutes to wait for the green LED lights up. OOB has been started successfully.



#### Note:

For every system recovery of M2A-OOB, please follow the instruction below.

Once the green LED is on, press and hold the recovery key within 15 seconds. The green LED light starts blinking for a few seconds until the light stays back on. The recovery action is completed.

### Default Password Setting

#### Step 1:

The default password can be obtained through the "ping" and "arp -a" commands.



After entering **ping OOB IP address** and execute "**arp -a**" commands, the screen will show OOB MAC address.

The default password is **OOB MAC address -1**. If there are letters from A to F, make sure they are all uppercase letters.

For example 1: 000129000001-1 --> 000129000000 For example 2: 000129110000-1 --> 00012910FFFF

#### Step 2:

Use a LAN cable to connect a LAN port on PC and a LAN port (i210) on the board.



#### Step 3: (Please note that this setup is only required for the first time use.)

Setup Lan IP Address - Open Network Status go to Advanced network settings and click Change adapter options, double click Ethernet.

Click **Priorities** - Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Priorities**. Type in the following information, then press **OK**.

IP address: 192.168.10.99 Subnet mask: 255.255.255.0



Ethernet Properties	Internet Protocol Version 4 (TCP/IPv4) Properties
Networking Sharing	General
Connect using: Intel(R) I210 Gigabit Network Connection	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Configure	Obtain an IP address automatically Use the following IP address:
Gient for Microsoft Networks     File and Printer Sharing for Microsoft Networks	IP address: 192 . 168 . 10 . 99
QoS Packet Scheduler	Subnet mask: 255 . 255 . 255 . 0
Internet Protocol Version 4 (TCP/IPv4)     Internet Protocol     Internet Protocol     Internet Protocol	Default gateway:
Microsoft LLDP Protocol Driver	O Obtain DNS carvar address automatically
✓ Internet Protocol Version 6 (TCP/IPv6)	Use the following DNS server addresses:
Install Uninstall Properties	Preferred DNS server:
Description	Alternate DNS server:
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.	Validate settings upon exit Advanced
OK Cancel	OK Cancel



#### Step 4:

Execute windows Command Prompt.

To run the command prompt:

Pressing Windows key + R key to open "Run" box. Type "cmd" and then click "OK".

Or

■ Using the search bar in the Windows 10, type "cmd" into the search bar and press enter.



# **Open SSH login**

Please obtain a default password before logging in, and type in the information as follows:

<u>C:\users\user name> :</u> ssh root@192.168.10.100

#### Are you sure you want to continue connecting : yes (This question only appears for the first time login.)

Please go to the next page for how to use SSH key pair to log in without entering a password.



When you enter a default password in Command Prompt, it doesn't appear or show up on the screen.

After entering the password, you will see  $\sim #$ 

Then type in cd DFI.

When it displays **/DFI #**, you may now start typing in commands for each function.

×
^

# **Change Password**

To change the default password, please follow the instructions below. Please make sure to log out OOB before changing the password.

#### Step 1:

Execute windows Command Prompt.

To run the command prompt:

Pressing Windows key + R key to open "Run" box. Type "cmd" and then click "OK".

#### Or

Using the search bar in the Windows 10, type "cmd" into the search bar and press enter.



#### Step 2:

Enter the command below.

Shell Script : ssh root@192.168.10.100 "passwd root"



# Use SSH key Pair Login

#### Step 1:

Execute windows Command Prompt.

To run the command prompt:

Pressing Windows key + R key to open "Run" box. Type "cmd" and then click "OK".

Or

Using the search bar in the Windows 10, type "cmd" into the search bar and press enter.

Please enter the command as follows: C:\users\user name> : ssh-keygen

The file will be saved in C:\users\user name\.ssh folder.



This PC > Local Disk (C:) > Users > test > .ssh					✓ 🖸 Search .ssh	Q
^	Name	^	Date modified	Туре	Size	
	id_rsa			File	3 KB	
	🥘 id_rsa.pub			PUB File	1 KB	

#### Step 2:

Please obtain a default password before logging in, and type in the information as follows: C:\users\user name> : ssh root@192.168.10.100 "mkdir -p ~/.ssh && chmod 700 ~/.ssh"

Are you sure you want to continue connecting : yes (This question only appears for the first time log in)

# Note:

- For creating a default password, please refer to <u>Default Password Setting Step 1</u>.
- When you enter a default password in Command Prompt, it doesn't appear or show up on the screen.



#### Step 3:

Please enter the command as follows:

#### scp C:\Users\test\.ssh\id\_rsa.pub root@192.168.10.100:~/.ssh/authorized\_keys

And then enter the password.



#### Step 4:

Please enter the command as follows: ssh root@192.168.10.100

It will log in automatically, no need to enter any password.

#### And then you will see ~#



• Use SSH key Pair Login - Change A Path and Create A Filename

You can also type in a path location where you want to save the file and create a file name. For example :

Please enter the command as follows: ssh-keygen -f C:\Users\test\.ssh\a4-1c-b4-0a-b0-6a The file will be located in C:\users\test folder. The file name is a4-1c-b4-0a-b0-6a.

Command Prompt	-	×
Microsoft Windows [Version 10.0.19044.4529]		^
(c) Microsoft Corporation. All rights reserved.		
C:\Users\test\ssh-kevgen -f C:\Users\testssh\a4-1c-b4-0a-b0-6a		
Generating public/private rsa key pair.		
Enter passphrase (empty for no passphrase):		
Enter same passphrase again: Press Enter		
Your identification has been saved in C:\Users\test\.s		
Tour public Key has been saved in C:\Users\test\.ssn\a4-ic-b4-0a-b0-oa.pub.		
THE KEY TINGETPTING IS: SHADSG-TURSHIZZDAMKYTQJIJZTABRAKVAGDAMARAFIZVXKZZK tASTAOFSKTOP_ANARGCC		
The key's randomart image is:		
+[RSA 3072]+		
0.0-0+		
0+.==		
. 00.+0€+.   		
0.0.0.		
0 + 0000		
+=.+		
+{ dcSAHC}+		
C:\Users\test>		
		- v

Thi	s PC → Local Disk (C:) → Users → test →	ע ט Search .ssh	Q		
^	Name	Date modified	Туре	Size	
	a4-1c-b4-0a-b0-6a		File	3 KB	
	🗐 a4-1c-b4-0a-b0-6a.pub		PUB File	1 KB	

#### Step 1:

Please obtain a default password before logging in, and type in the information as follows: C:\users\user name> : ssh root@192.168.10.100 "mkdir -p ~/.ssh && chmod 700 ~/.ssh"

#### <u>Are you sure you want to continue connecting</u> : yes (This question only appears for the first time log in)



I See Command Prompt -	×	
Microsoft Windows [Version 10.0.19044.4529]	^	
(c) Microsoft Corporation, All rights reserved.		
(-/ ·		
C:\Users\test>ssh-kevgen -f C:\Users\test\.ssh\a4-1c-b4-0a-b0-6a		
Generating public/private rsa key pair.		
Enter passphrase (empty for no passphrase):		
Enter same passphrase again:		
Your identification has been saved in C:\Users\test\.ssh\a4-1c-b4-0a-b0-6a.		
Your public key has been saved in C:\Users\test\.ssh\a4-1c-b4-0a-b0-6a.pub.		
The key fingerprint is:		
SHA256:IV8SU7X2omKYT92j127gbBdkydsDdnA4BaFiZVxK2zk test@DESKTOP-0NAB6CC		
The key's randomart image is:		
+[RSA 3072]+		
0.0=0+=.		
0+.==		
. oo.+oE+.		
0.+ +*.		
5 00+0		
0.0.0		
0 + 0000		
· + · ·+ ·		
+[SHA256]+		
C:\Users\test\ssh rootW192.168.10.100 "mkdir -p ~/.ssh && chmod /00 ~/.ssh"		
The authenticity of nost 192.108.10.100 (192.108.10.100) Can the established.		
EUDA Key tingerprint is SHAZSB: Jajualahn/MW/VAXSH/IDNIWZQW//qHLC/444078A8.		
Are you sure you want to continue connecting (yes/no/[tingerprint])) yes		
warning, remainently added 192.100.10.100 (LCDSA) to the fist of known nosts.		
1001g192.100.10.100 S password.		
C:\llrane\tagts		

#### Step 2:

Please enter the command as follows:

#### scp C:\Users\test\.ssh\a4-1c-b4-0a-b0-6a. pub root@192.168.10.100:~/.ssh/authorized\_keys

And then enter the password.



#### • For creating a default password, please refer to Default Password Setting - Step 1.

When you enter a default password in Command Prompt, it doesn't appear or show up on the screen.



#### Step 3:

Please enter the command as follows:

ssh -i C:\Users\test\.ssh\a4-1c-b4-0a-b0-6a root@192.168.10.100

It will log in automatically, no need to enter any password.

And then you will see ~#



## Remote Control PC Power On/Off



### PC Power On/Off Status Check

Please complete <u>Default Password Setting - Step 4</u> before entering the following command. Check the current power On/Off status remotely by typing in following command.

#### Shell Script : ./pc\_status.sh



### Turn On/Off PC Remotely

After the status check, you can control PC power on/off remotely. Please complete <u>Default Password Setting - Step 4</u> before entering the following command. To toggle power on or power off, just type in the same command again.

#### Shell Script : ./power\_button.sh



2. Type in shell script: ./power\_button.sh to power on or power off the PC.

3. Then check the staus again.

### Perform a Timed Force Shutdown

To forcibly shut down the PC, please type in the following command. Please complete <u>Default Password Setting - Step 4</u> before entering the following command. Numbers means this will force shutdown your PC in xx seconds (waiting time). Setting it to 5 will shutdown your PC after 5 seconds.

#### Shell Script : ./power\_button.sh 5



#### PC Rebooting

To reboot the PC, please type in the following command. You will hear a single beep, it means PC rebooted successfully. Please complete <u>Default Password Setting - Step 4</u> before entering the following command.

#### Shell Script : ./reset\_button.sh



# Remote Hardware Monitor Log (Super I/O)

I2C bus: Super I/O: Voltage, Temperature, Fan Speed PCH: CPU Temperature



#### Super I/O Log

To start/stop super I/O log, please type in the following commands. Please complete <u>Default Password Setting - Step 4</u> before entering the following command.

To start super I/O log: Shell Script : **./sio\_start\_log.sh YYYY-MM-DD hh:mm:ss hours /DFI/sio\_log &** For example: ./sio\_start\_log.sh 2024-05-24 09:00:00:00 24 /DFI/sio\_log & Make sure to add the ampersand "&" at the end to run in the background.



/DFI #

<u>To stop super I/O log:</u> Shell Script : **./sio\_stop\_log.sh** 

#### FI # ./sio\_stop\_log.sh

== DFI OOB === 1]+ Terminated

./sio\_start\_log.sh 2024-05-24 09:00:00 24 /DFI/sio\_log

### How to Export Super I/O Logs From OOB

To export super I/O log, please type in the following command. Please complete <u>Default Password Setting - Step 4</u> before entering the following command.

Shell Script : **scp -r root@192.168.10.100:/DFI/sio\_log C:\Users\username\.ssh** For example: scp -r root@192.168.10.100:/DFI/sio\_log C:\Users\yili.pan\.ssh



The log file is saved in C drive.



# ► Using USB Storage / MicroSD Card to run actions

#### The shell scripts for USB storage

Please execute the following commands to switch between the USB flash drive and the microSD card for the device operations.

To insert a USB flash drive, please execute a shell script as following: Shell Script : **./insert\_usb\_storage.sh** 

To remove a USB flash drive, please execute a shell script as following: Shell Script : **./eject\_usb\_storage.sh** 

To format a USB flash drive to factory settings, please execute a shell script as following: Shell Script : **./format\_usb\_storage.sh** 

If file operations are performed via a USB flash drive under OOB, need to refresh windows to update. To update a USB flash drive, please execute a shell script as following: Shell Script : **./refresh\_usb\_storage.sh** 

#### The shell scripts for MicroSD card

Please format your MicroSD card to FAT32 before executing any commands, and then insert it into the OOB MicroSD card slot.

There are two ways to format a MicroSD card :

- 1. You can format a microSD card using your Windows computer. Make sure that once you have formatted, your card will be formatted to FAT32 filesystem type.
- 2. You can format a micro SD card using commands.

### Formatting a microSD Card under OOB

Please format a MicroSD card before using it to log in OOB. What are the situations do you need to format a MicroSD card :

- A brand new MicroSD card.
- Your MicorSD card is not formatted as FAT32.

The instructions are as follows :



To remove a MicroSD card, please execute a shell script as following: Shell Script : **./eject\_uSD.sh** 

If file operations are performed via a MicroSD card under OOB, need to refresh windows to update. To update a USB flash drive, please execute a shell script as following: Shell Script : **./refresh\_uSD.sh /dev/mmcblk0p1** 

# Chapter 3 REMOTE BIOS UPDATE

# **Chapter 3 - BIOS**

### Remote BIOS Update

#### Step 1:

Before starting the update, you will have to prepare BIOS bin file.

**BIOS bin file** (Every BIOS file has a different file name to be used as a command, please enter the file name accordingly.) How to request to obtain the files and update BIOS, please watch the video below for more information:

https://www.dfi.com/tw/knowledge/video/5





#### Step 2:

Copy BIOS bin file to its corresponding users folder in C drive.

Command Prompt -	×			🔻   yili.pan			×
Microsoft Windows [Version 10.0.19045.3448] (c) Microsoft Corporation. All rights reserved.		î	File H	Home Share View	✓ Ŏ	in	~ 0
C:\Users\yili.pan>_			^	Name	Date modified	Туре	
				bios.bin	2023/7/26下午11:12	BIN File	
		~	7 items				

# Chapter 3 REMOTE BIOS UPDATE

#### Step 3:

Open command prompt and type in the command below. Every BIOS file has a different file name used as a command, please enter the file name accordingly.

Shell Script : scp bios.bin file name root@192.168.10.100:~/DFI/bios/

For example: BIOS file name : B246.18A Shell Script : scp B246.18A root@192.168.10.100:~/DFI/bios/

#### C:\Users\test>scp B246.18A root@192.168.10.100:~/DFI/bios/

Please enter a default password. root@192.168.10.100's password:



For creating a default password, please refer to <u>Default Password Setting - Step 1</u>.

Refresh DFI USB storage to notify windows

Shell Script : ssh root@192.168.10.100 ./DFI/refresh\_usb\_storage.sh

C:\Users\test>ssh root@192.168.10.100 ./DFI/refresh\_usb\_storage.sh root@192.168.10.100's password:

=== DFI 00B ===

C:\Users\test>

#### Step 4:

Run SSH command: Please type in the information as follows:

<u>C:\users\user name> :</u> ssh root@192.168.10.100

# Are you sure you want to continue connecting : yes (This question only appears for the first time log in)

root@192.168.10.100's password:

For creating a default password, please refer to Default Password Setting - Step 1.

After entering the password, you will see ~# Then type in cd /DFI/bios/

#### Step 5:

For the next step, you will have to shut down the PC if the power is still on. To turn off the pc, enter **cd** .. to go back one level. Type in **./power\_button.sh** to execute shutdown. Then type in **cd bios/** and the final step, type in **/DFI/bios #./update\_bios.sh BIOS bin file name** to begin the BIOS update.

Enter the following command to start updating BIOS:

Shell Script : ./updatebios.sh bios bin file name For example: BIOS file name : B246.18A Shell Script : ./updatebios.sh B246.18A

OpenSSH SSH clien

icrosoft Windows [Version 10.0.19045.3448] c) Microsoft Corporation. All rights reserved.

C:\Users\yili.pan>ssh root@192.168.10.100 root@192.168.10.100's password: ~ # cd DFI/bios/. /DFI/bios # ./updatebios.sh **B246.18A** Please shut down the PC, and execute again

/DFI/bios # cd .. /DFI # ./power\_button.sh /DFI # cd bios/ /DFI/bios # ./updatebios.sh **B246.18A** 

== DFI 00B === Ising clock\_gettime for delay loops (clk\_id: 1, resolution: lns). "he following protocols are supported: SPI. Probing for Winbond W250256JV Q, 32768 kB: compare\_id: idl 0xef, id2 0x4019 Found Winbond flash chip "W250256JV\_Q" (32768 kB, SPI) on linux\_spi. "hip status register is 0x00.

Please wait...

Reading old flash chip contents... Reading old flash chip contents... done. Frasing and writing flash chip... ..... /erifying flash... VERIFIED. BIOS update is finished

/DFI/bios # 🗕

### **Remote BIOS Update (Via Teraterm)**

• Remote BIOS Setup & UEFI shell (Serial Over Lan)

• Remote BIOS Update (SOL & DFI USB-Storage)





### Check BIOS Set Up from USB Storage

Before starting BIOS update, please make sure the BIOS set up is on USB storage.

To check BIOS set up, please execute a shell script as following: Shell Script : **./insert\_usb\_storage.sh** If BIOS set up is on USB storage, it shows **USB Storage is exist, Please eject it.** 

/DFI # /DFI # ./insert\_usb\_storage.sh

```
USB Storage is exist, Please eject it
```

If BIOS set up is on MircoSD, it shows **This is USB uSD, Please execute eject\_uSD.sh.** and execute **./eject\_uSD.sh** and then execute **./insert\_usb\_storage.sh** 

/DFI # ./eject\_usb\_storage.sh

This is USB uSD, Please exec eject\_uSD.sh

/DFI # ./eject\_uSD.sh /DFI # ./insert\_usb\_storage.sh /DFI #

# Chapter 3 REMOTE BIOS UPDATE

#### Step 1:

Before starting the update, you will have to prepare two files:

1. AfuEfiU64.efi

2. BIOS bin file

How to request to obtain the files and update BIOS, please watch the video below for more information:

https://www.dfi.com/tw/knowledge/video/5



#### Step 2:

TeraTerm is already included in the DFI system.

After successfully booting to OOB, you will see a USB flash drive in the DFI system. Please copy the teraterm folder from the USB flash drive to the computer where you want to operate the OOB.



Go to Teraterm folder and open **telnet.bat**. Press "**ESC**" key ,when system power on.

Run SSH command:

Please type in the information as follows:

• <u>Copy BIOS from local PC to remote OOB module</u> scp AfuEfiU64.efi root@192.168.10.100:~/DFI/USB/files scp bios.bin file name root@192.168.10.100:~/DFI/USB/files Shell Script : scp bios.bin file name root@192.168.10.100:~/DFI/USB/files

#### For example:

BIOS file name : B246.18A Shell Script : scp B246.18A root@192.168.10.100:~/DFI/USB/files

Shell Script : scp AfuEfiU64.efi root@192.168.10.100:~/DFI/USB/files

C:\Users\test>scp <b>B246.18A</b> root@192.168.10.100:/DFI/USB/files root@192.168.10.100's password: <b>B246.18A</b>	100%	32MB 953.4KB/s	00:34
C:\Users\test>scp <b>AfuEfiU64.ef</b> i root@192.168.10.100:/DFI/US8/files root@192.168.10.100's password: <b>AfuEfiU64.efi</b>	100%	606KB 554.6KB/s	00:01
C:\Users\test>			

Refresh DFI USB storage to notify windows

C:\Users\test>ssh root@192.168.10.100 ./DFI/refresh\_usb\_storage.sh root@192.168.10.100's password:

=== DFI 00B ===

C:\Users\test>

How to Access BIOS Setup Menu When Power on

If the DFI system is power on which installed OOB, executing **power\_button.sh** script to off/on the system. The script must be executed twice, first is for powering off the system, second is for powering on the system.

After the first execution, check if the system status is power off, then proceed with the second execution to be able to enter BIOS setup menu.

For the baud rate setting change, please input the shell script below to choose from 115200 or 921600. Make sure the baud rate setting from BIOS console redirection is matched.

#### Shell Script : ./setbaudrate.sh For example: baud rate : 921600 Shell Script : ./setbaudrate.sh 921600

# # cd DFI/

'DFI # ./setbaudrate.sh 921600 'DFI #

# Chapter 3 REMOTE BIOS UPDATE

#### Step 3:

Access BIOS setup menu.

When system power is on, press "ESC" key in the teraterm window.

192.168.10.100 - Tera Term VT		- 🗆 X
Main Advanced Chipset Security	<b>Aptio Setup - AMI</b> Boot Save & Exit MEBx	
Product Name BIOS Version	RPS630 B236.01A_UART2	Set the Date. Use Tab to switch between Date elements. Default Ranges:
FSP version RC version	0C.00.9D.20 0C.E0.9D.20	Year: 1998-9999 Months: 1-12 Days: Dependent on month Range
13th Gen Intel(R) Core(TM) i7-13700 ID Stepping Number of Efficient-cores Number of Performance-cores Microcode Revision	ITE 0x80671 B0 8Core(s) / 8Thread(s) 8Core(s) / 16Thread(s) 112	of Years may vary.
Nemory RC Version Total Nemory Nemory Frequency	0.0.4.112 16384 MB 4000 MHz	><: Select Screen ^v: Select Item Enter: Select
PCH SKU ME FW Version ME Firmware SKU PMC FH Version System Date System Time	PCH-S R680E 16.1.25.2101 Corporate SKU 160.2.0.1041 [Tue 05/22/2023] [06:10:57]	F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
\		

Boot from DFI USB-Storage device & Update BIOS in uefi mode.

Use arrow key to select Save & Exit ---> UEFI: DFI USB-Storage



#### Step 4:

Please contact technical support or your sales representative for the files and specific instructions about how to update BIOS with the flash utility.

When there is no error message displayed, the BIOS update will be completed successfully.

Pc1Roof(0x0)/Pc1(0x14,0x0)/USB(0x3,0x0)
blk0 :HardDisk - Alias hd37b fs0
PciRoot(0x0)/Pci(0x1D.0x4)/Pci(0x0.0x0)/NVNe(0x1.41-44-F6-05-52-48-35-
C)/HD(1.GPT.9D17F1AF-37F4-4654-98CF-F74BF3857A9F.0x800.0x32000)
blk1 :Removable BlockDevice - Alias f18d0 fs1
PciRoot(0x0)/Pci(0x14,0x0)/USB(0x3,0x0)
blk2 :HardDisk - Alias (null)
PciBoo1(0x0)/Pci(0x10,0x4)/Pci(0x0,0x0)/NVNe(0x1,41-44-F6-05-52-48-35-
C)/HD(2.GPT.87648C69-E547-45F4-9A9F-114CBAB8F322.0x32800.0x40000)
blka :HardDisk - Alias (null)
PciRoot(0x0)/Pci(0x10.0x4)/Pci(0x0.0x0)/NVNe(0x1.41-44-F6-05-52-48-35-
C)/HD(3.GPT,7093A5EE-E9AD-4CCC-A12B-3A56AB6C0DBE.0x72800.0x1DC80800)
blk4 :BlockDevice - Alias (null)
PciRoot(0x0)/Pci(0x10.0x4)/Pci(0x0.0x0)/NVMe(0x1.41-44-F6-05-52-48-35-
c)
Press ESC in 3 seconds to skip startup.nsh. any other key to continue.
startup.nsb> fs1:
startup.nsh> Afuefiu.efi bios.bin /p /b /n /reboot
L
AMI Firmware Update Utility v5.15.03.0081
Copyright (c) 1985-2022, American Megatrends International LLC.
All rights reserved. Subject to AMI licensing agreement.
Reading flash
Redding Fluan

# Chapter 4 - OOB IP Address Change

#### SSH

#### Step 1:

Execute windows Command Prompt.

To run the command prompt:

Pressing Windows key + R key to open "Run" box. Type "cmd" and then click "OK". Or

Using the search bar in the Windows 10, type "cmd" into the search bar and press enter.

Typing in following command and you will see a message to ask for a new IP address.

(For example: 192.168.10.88)

#### Shell Script : ssh root@192.168.10.100 ./DFI/ipconfig.sh



Press Enter and close the current window since it is frozen and unable to operate. Please open a new window to login new IP address and run command prompts. After the network changes, make sure it should be in the same network domain as OOB.



prompts with new IP address.

#### Step 2:

In the new command prompts window, login to OOB with SSH ssh root@(Input new IP address)

#### Shell Script : ssh root@192.168.10.88

#### :\Users\test>ssh root@192.168.10.88

The authenticity of nost 192.168.10.88 (192.168.10.88)' can't be established. ECDSA key fingerprint is SHA256:JajOaldFhPMNvvGx9Fylbhlw2gcWr7qhLC2Y4Aor8A8. Are you sure you want to continue connecting (yes/no/[fingerprint])? yes Warning: Permanently added '192.168.10.88' (ECDSA) to the list of known hosts. root@192.168.10.88's password:

# Chapter 4 OOB IP ADDRESS CHANGE

### Console Redirection

#### Step 1:

After the IP address changes, Console Redirection is unable to run commands. To fix the problme, please navigate to **C:\Program Files (x86)\teraterm** to look for a TTL file named '**telnet.ttl**.' This file needs to be modified. After that, Console Redirection has been updated successfully.

teraterm					- 0	×
🕀 New - 🎽	0 0 0 0	∫ ↑↓ Sort ~				
$\leftarrow \rightarrow \checkmark \uparrow$	> This PC > Local Disk (C:) > Progr	ram Files (x86) → teraterm	~ C <	Q Search teraterm		
	Name	Date modified	Туре	Size		
e Home	🚯 telnet.bat	9/5/2023 7:05 AM	Windows Batch File	1 KB		
Desktop	*	9/5/2023 7:05 AM	Configuration sett	25 KB		
Downloads	* Einet.ttl	11/30/2023 6:48 PM	TTL File	1 KE		
Documents	TelnetKB.CNF	9/5/2023 7:05 AM	CNF File	5 KB		
Pictures	* 😵 teraterm.chm	5/31/2021 9:34 PM	Compiled HTML	2,242 KB		
loneDrive	TERATERM.INI	2/6/2025 6:11 PM	Configuration sett	25 KB		
This PC	ያ teratermj.chm	5/31/2021 9:34 PM	Compiled HTML	2,178 KB		
	ttermpro.exe	5/31/2021 9:35 PM	Application	1,756 KB		
<ul> <li>USB Drive (D:)</li> </ul>	🗟 ttpcmn.dll	5/31/2021 9:34 PM	Application exten	272 KB		
🔄 Network	() ttpfile.dll	5/31/2021 9:34 PM	Application exten	252 KB		
	💻 ttpmacro.exe	5/31/2021 9:34 PM	Application	1,432 KB		
	🚯 ttpset.dll	5/31/2021 9:34 PM	Application exten	216 KB		
	🚯 ttptek.dll	5/31/2021 9:34 PM	Application exten	228 KB		
	TTXProxy.dll	5/31/2021 9:35 PM	Application exten	296 KB		
5 items   1 item select	ted 314 bytes					= [

#### The old IP address

show 0

#### connect '192.168.10.100:50005 /nossh /T=1

:detpwd

loadkeymap 'TelnetKB.CNF'

wait "Enter Password"

testlink

if result=0 then mpause 200 end

#### **Change to the new IP address**

show 0

connect '192.168.10.88:50005 /nossh /T=1'

:detpwd

loadkeymap 'TelnetKB.CNF'

wait "Enter Password"

testlink

if result=0 then mpause 200 end endif

loadkeymap 'KEYBOARD.CNF'