

MINIX IPC RIC SJ64 Series

User Manual

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FCC :

This device complies with the requirements in part 15 of the FCC rules: Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.

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 commercial environment. 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. Operation of this device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense. The user is advised that any equipment changes or modifications not expressly approved by the party responsible for compliance would void the compliance to FCC regulations and therefore, the user's authority to operate the equipment.

Caution! There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

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CHAPTER 1

Introduction

1.1 Initial Inspection

Before you begin installing your computer, please make sure that the following materials have been shipped.

1. 1 x RIC SJ64 series device
2. 1 x Power Adapter
3. 2 x Antennas
4. 1 x VESA Mount
5. 1 x SATA Cable

Verify the exact model number:

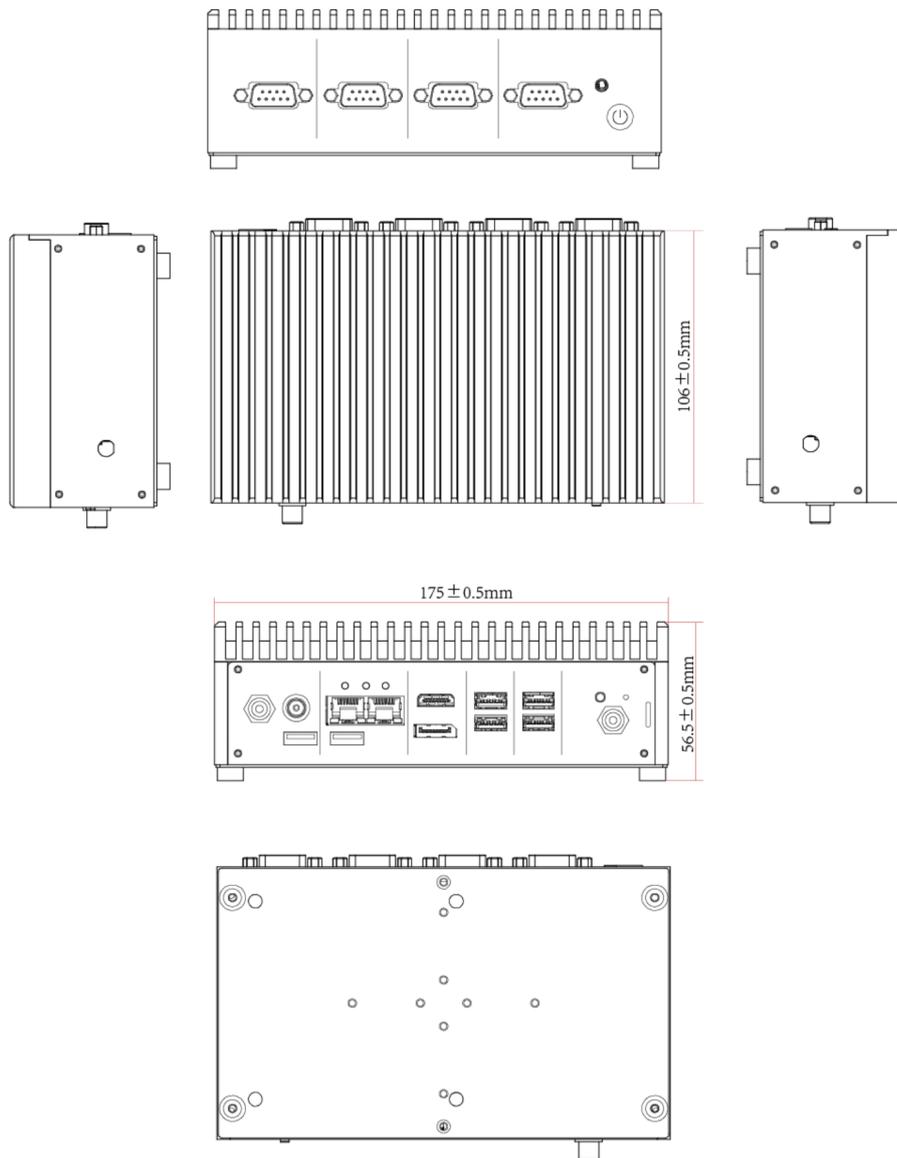
Model Number	Memory	Storage	OS
RIC SJ64-4W	4GB	256GB	Windows
RIC SJ64-8W	8GB	256GB	Windows
RIC SJ64-16W	16GB	512GB	Windows
RIC SJ64-32W	32GB	512GB	Windows
RIC SJ64-4U	4GB	256GB	Ubuntu
RIC SJ64-8U	8GB	256GB	Ubuntu
RIC SJ64-16U	16GB	512GB	Ubuntu
RIC SJ64-32U	32GB	512GB	Ubuntu

If any of these items are missing or damaged, contact your distributor or sales representative immediately. We have carefully inspected the mechanically and electrically before shipment. It should be free of marks and scratches and in perfect working order upon receipt. As you unpack the motherboard, check it for signs of shipping damage. (For example, damaged box, scratches, dents, etc.) If it is damaged or it fails to meet the specifications, notify our service department or your local sales representative immediately. Also notify the carrier. Retain the shipping carton and packing material for inspection by the carrier. After inspection, we will make arrangements to repair or replace the unit.

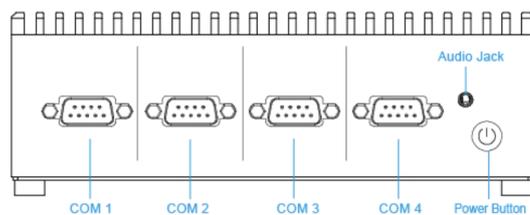
1.2 Product Specification

Processor	Intel® Celeron® J6412 Processor (up to 2.60GHz)
System Memory	Single 260-pin DDR4 SO-DIMM Socket, Supports Up to 32GB DDR4 3200MHz (non ECC Supported)
I/O Chipset	Nuvoton NCT6126D
BIOS Information	AMI BIOS, 128M-bit SPI Flash ROM
Watchdog Timer	Programmable 1~ 255 sec, support system reset
TPM 2.0	Infineon_ SLB9670VQ2.0
Expansion	1 x M.2(Key-B, 3042, PCIe x1 + USB3.0), 1 x M.2(Key-M, M.2 SATA 2242/2280)
Storage	M.2 SATA SSD (Upgradable to 1TB), volume depends on model number.
USB Port	3 x USB 3.2 GEN1 Type A, 3 x USB 2.0 Type A
COM Port	4 x RS-232 / 422 / 485
SATA	1 x SATA3.0
Graphic Chipset	Intel® UHD Graphics for 10th Gen Intel® Processors
Spec. & Resolution	HDMI 2.0 Max resolution 4096x2160@60Hz, DP 1.4a Max resolution 4096x2160@60Hz
Multiple Display	Dual Display
Audio Codec	ALC897-VA2-CG
Audio Interface	Mic-In, Line-Out, 2-in-1 3.5mm audio jack
Certification Information	CE, UKCA, FCC Class B
LAN Chipset	2 x Intel® I226V
Ethernet Interface	2 x 10M/100M/1000M/2.5G Ethernet
LAN Port	2 x RJ-45
Operating Temperature	Operating Standard Temp: 0°C ~ 60°C .
Storage Temperature	40°C ~ 85°C (-40°F ~ 185°F)
Operating Humidity	5% - 95% Relative Humidity, Non-condensing
Power Requirement	DC IN + 12V-24V ±5%
Dimension (L x W x H)	175 x 106 x 56.5mm
OS Information	Depends on the model
Power Adapter	19V/3.42A

1.3 System Overview and Dimensions

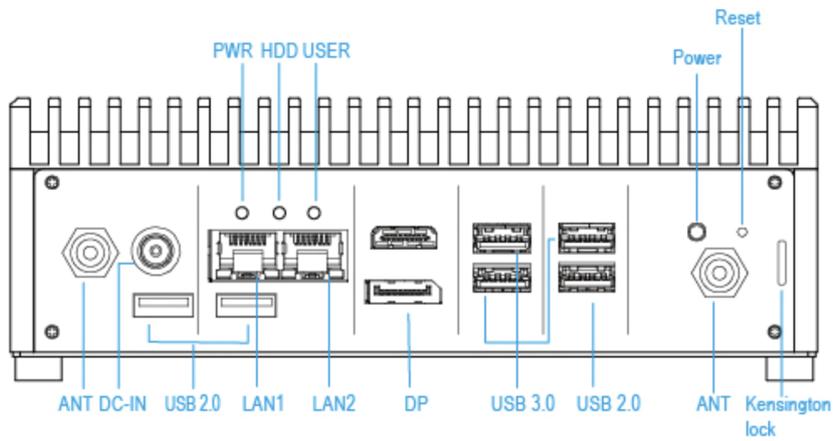


1.3.1 Front View



Connectors	
Label	Function
COM1~COM4	RS-232/422/485
Power	Power on button
MIC IN	Mic-In, Line-Out, 2-in-1 audio jack

1.3.2 Rear View



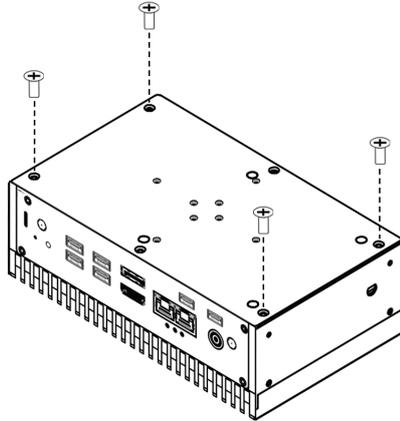
Ports	
Label	Function
LAN 1/2	Intel® I226V
USB 3.0	USB 3.0 connector x3
USB 2.0	USB 2.0 connector x3
DP	DP 1.4a
HDMI	1 x HDMI 2.0
PWR	System Power Indicator
HDD	HDD Indicator
USER	
Power	
Reset	
DC IN	Wide DC-Input, +12V ~ 24V ±5%

CHAPTER 2

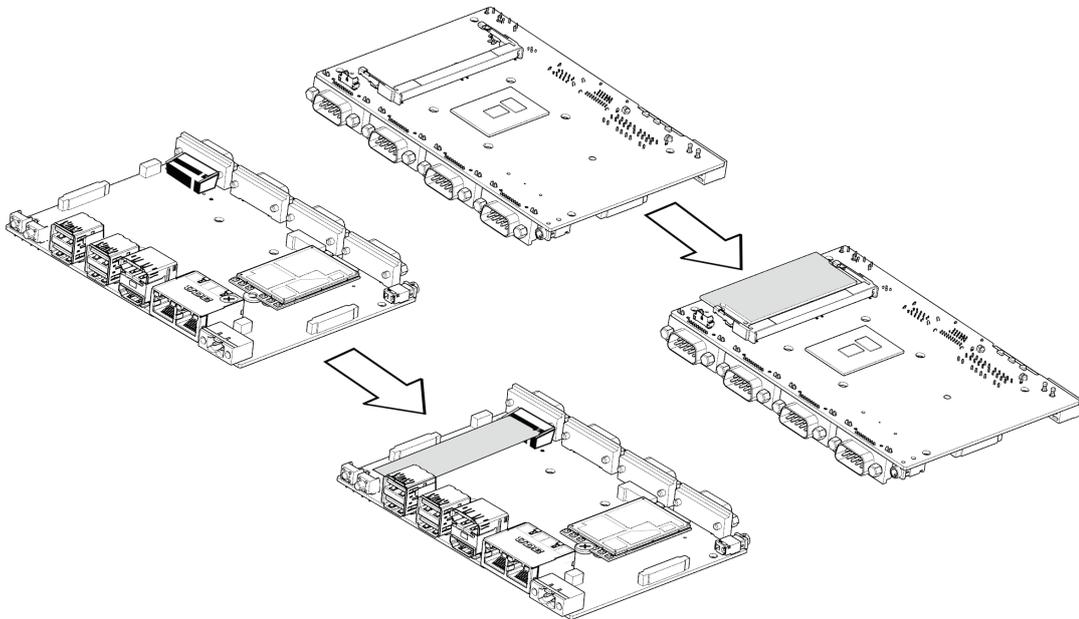
Installation of components

2.1 Installing SSD & Memory

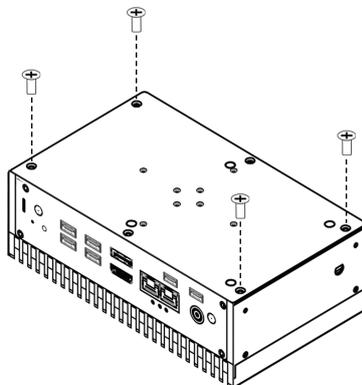
Step1. Remove 4 screws from the bottom of your system and take it off.



Step2. Properly install the memory modules and press until properly seated.



Step 3, Place back the cover and fasten 4 screws back to complete.

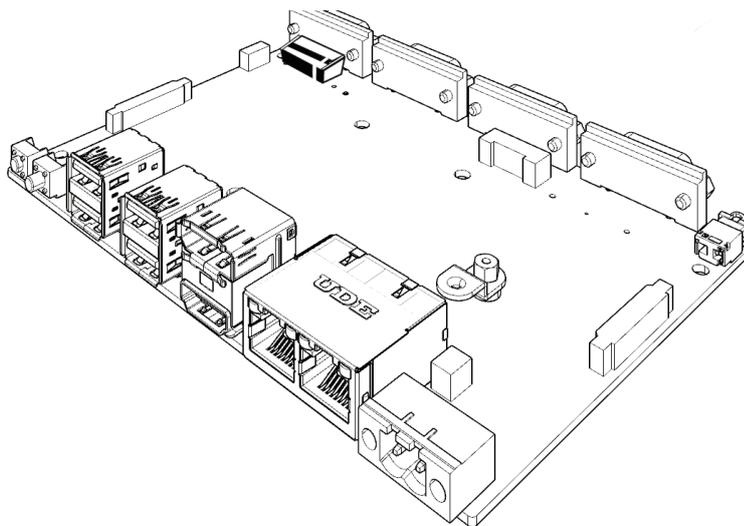
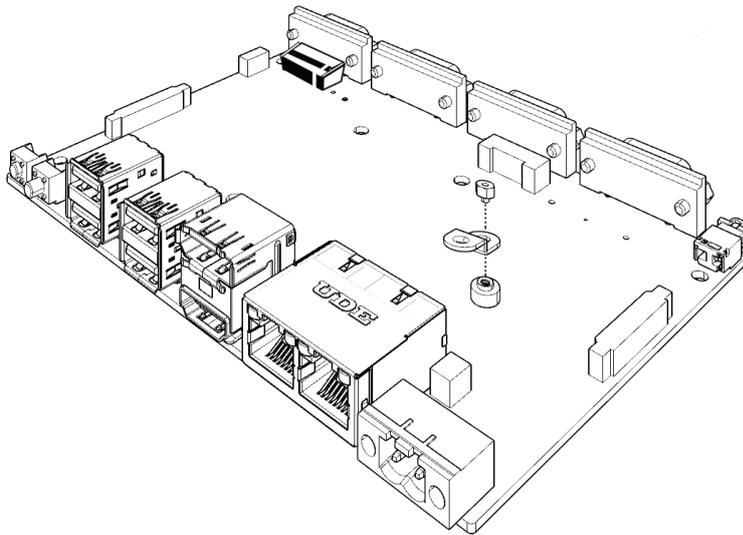


2.2 Installing 4G/5G Module

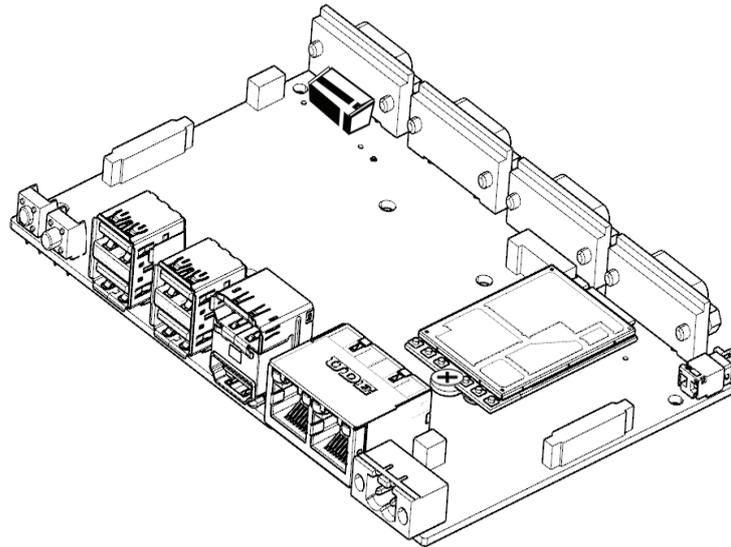
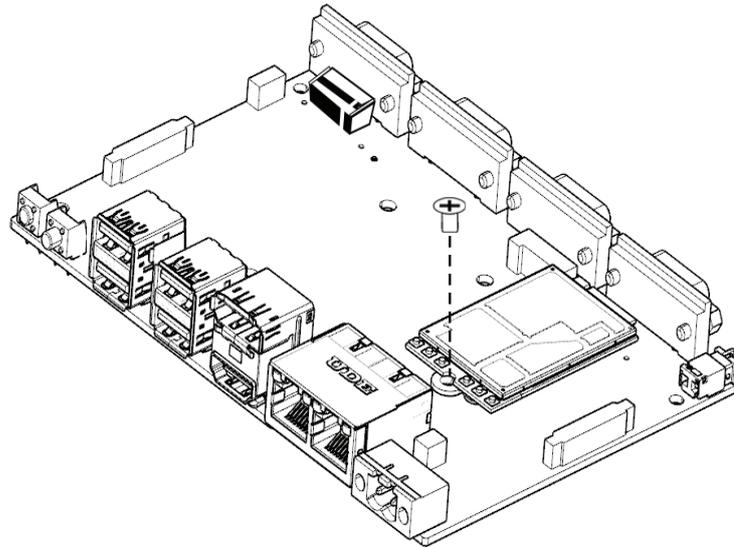
Note: 4G/5G module is not included.

Step 1. Remove the installed Wi-Fi module.

Then install the bearing pad and the screw, so that the 4G/5G module can be installed.



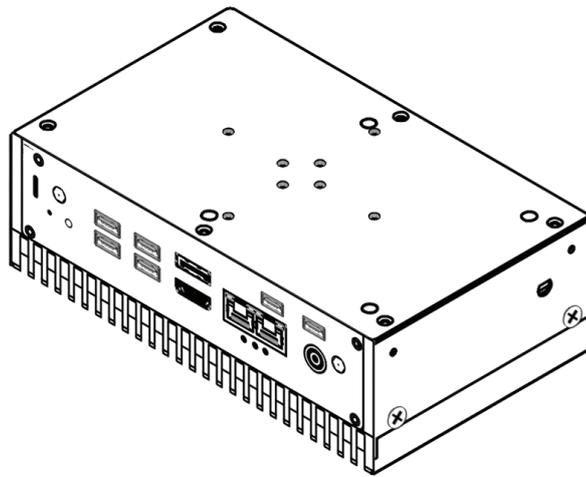
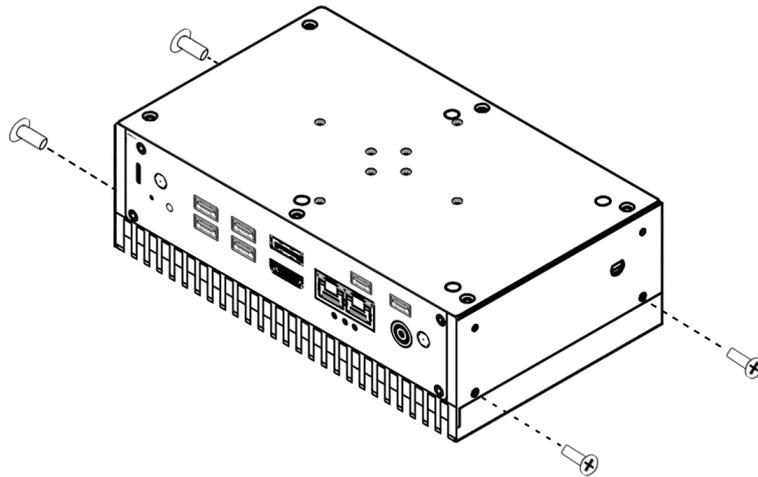
Step 2. Insert 4G/5G module (M.2 B-Key card) into designated locations and fasten with the screws to complete installation.



2.3 Installing Mounting Bracket

Step1. Remove 4 screws from the side.

Step2. Insert and fasten screw on each side of the system to secure Mounting Bracket.



CHAPTER 3

BIOS Setup Utility

3.1 Introduction

This section explains how to use the BIOS SETUP UTILITY to configure your system. The BIOS chip on the motherboard stores the BIOS SETUP UTILITY. You may run the BIOS SETUP UTILITY when you start up the computer. Please press during the Power-On-Self-Test (POST) to enter the BIOS SETUP UTILITY, otherwise, POST will continue with its test routines. If you wish to enter the BIOS SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.



Because the BIOS software is constantly being updated, the following BIOS setup and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

Some features of this device will be available here.

3.2 Watchdog

To enable/disable Watchdog, in BIOS, go to 'Advanced' > 'WatchDog Configuration', enable/disable the 'WatchDog Support'. Then [Save Changes and Exit].

3.3 COM Ports Setup

COM ports setup are available in BIOS > 'Advanced' > 'Super IO Configuration'.

Serial Port 1 Configuration:

Serial Port	: [Enabled], [Disabled]
COM Port Mode Setting	: [RS232], [RS422], [RS485 TX]
Device Settings	: [IO=2E8h; IRQ=7;]
Change Settings	: [Auto], [IO=2E8h; IRQ=7;], [IO=3E8h; IRQ=5, 6, 7, 10, 11, 12;], [IO=2E8h; IRQ=5, 6, 7, 10, 11, 12;], [IO=220h; IRQ=5, 6, 7, 10, 11, 12;], [IO=228h; IRQ=5, 6, 7, 10, 11, 12;],

Serial Port 2 Configuration:

Serial Port :[Enabled], [Disabled]
COM Port Mode Setting :[RS232], [RS422], [RS485 TX]
Device Settings :[IO=3F8h; IRQ=4;]
Change Settings :[Auto],
[IO=3F8h; IRQ=4;],
[IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;]
[IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;]
[IO=3E8h; IRQ=5, 6, 7, 10, 11, 12;]
[IO=2E8h; IRQ=5, 6, 7, 10, 11, 12;]

Serial Port 3 Configuration:

Serial Port :[Enabled], [Disabled]
COM Port Mode Setting :[RS232], [RS422], [RS485 TX]
Device Settings :[IO=2F8h; IRQ=3;]
Change Settings :[Auto],
[IO=2F8h; IRQ=3;],
[IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;]
[IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;]
[IO=3E8h; IRQ=5, 6, 7, 10, 11, 12;]
[IO=2E8h; IRQ=5, 6, 7, 10, 11, 12;]

Serial Port 4 Configuration:

Serial Port :[Enabled], [Disabled]
COM Port Mode Setting :[RS232], [RS422], [RS485 TX]
Device Settings :[IO=3E8h; IRQ=7;]
Change Settings :[Auto],
[IO=3E8h; IRQ=7;],
[IO=3E8h; IRQ=5, 6, 7, 10, 11, 12;]
[IO=2E8h; IRQ=5, 6, 7, 10, 11, 12;]
[IO=220h; IRQ=5, 6, 7, 10, 11, 12;]
[IO=228h; IRQ=5, 6, 7, 10, 11, 12;]

3.4 Hardware Monitor

To check out the status of the device, go to BIOS > 'Advanced' > 'Hardware Monitor'.

Real time status of these information is available:

[CPU temperature], [SYS temperature], [+5V], [Memory Vol] and [VCORE].

3.5 FPANEL3 2.54mm port

G3 specifies what state to go to when power is re-applied after a power failure.

To setup, go to BIOS > 'Advanced' > 'Power Management Configuration' > 'State After G3'. There are 3 options for users: [Power On], [Power Off], [Last State].

3.6 Wake System with Fixed Time:

Setup a time when the device should power on.

This option is available here: BIOS > 'Advanced' > 'Power Management Configuration'.

If the option is [Enabled], it allows you to set the [Wake up DAY], [Wake up hour], [Wake up minute] and [Wake up second].

[Wake up DAY] : Select 0 for daily system wake up, 1-31 for which day of the month that you would like the system to wake up.

[Wake up hour] : Select 0-23, For example, 3 for 3am, and 15 for 3pm.

[Wake up minute] : Select 0-59.

[Wake up second]: Select 0-59.

3.7 Network Stack:

Location: BIOS > 'Advanced' > 'Network Stack Configuration'.

This option is 'Disabled' by default. When 'Enabled', it allows you to set up below options:

IPv4 PXE Support :[Disabled], [Enabled].

IPv4 HTTP Support :[Disabled], [Enabled].

IPv6 PXE Support :[Disabled], [Enabled].

IPv6 HTTP Support :[Disabled], [Enabled].

PXE boot wait time :0

Media detect count :1

3.8 Wake on LAN (WOL)

This feature allows the device to be power up remotely.

To enable/disable it, go to BIOS > 'Chipset' > 'PCH-IO Configuration' > 'Onboard LAN Configuration'.

3.9 PCIE 5G

Location: BIOS > 'Chipset' > 'PCH-IO Configuration' > 'Onboard LAN Configuration'.

Options: Disabled, Enabled.

3.10 Onboard LAN 1/2

This option is to enable/disable the LAN ports. It's available here: BIOS > 'Chipset' > 'PCH-IO Configuration' > 'Onboard LAN Configuration'.

CHAPTER 4

Installation of OS/BIOS

MINIX provide 2 kinds of operating system (OS) for users, they are Windows OS and Linux based OS. Also, we provide alternative BIOS versions. This chapter is about how to install the OS and flash the BIOS.

4.1 How to install Linux based OS.

MINIX officially provides Ubuntu for users, and the following instructions are based on this. To install Ubuntu OS onto the device, these things are need to be prepared.

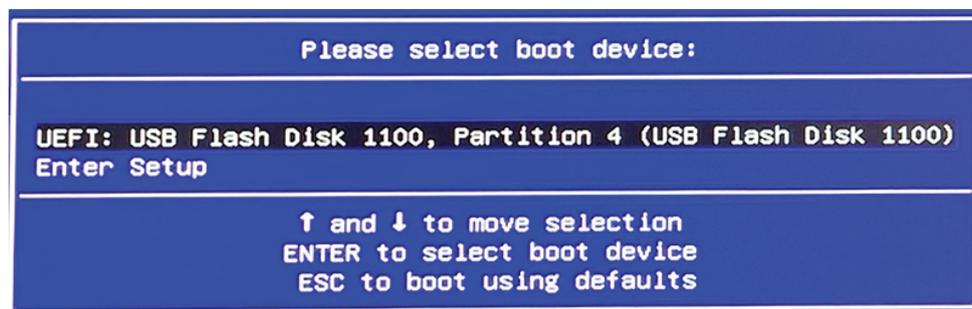
- 2 USB drives (USB Drive A and B).
- Image writing tool: Rufus or UltraISO
- The installation tool: Clonezilla
- Ubuntu OS provided by MINIX.

Preparation:

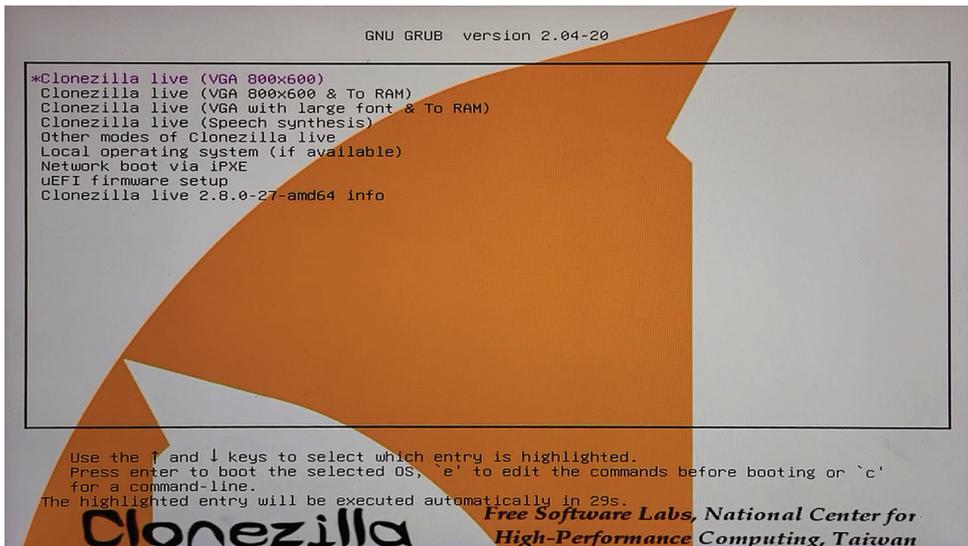
1. Write [Clonezilla] to **USB Drive A** with the image writing tool – Rufus or UltraISO.
2. Format the **USB Drive B** to NTFS format, then copy the downloaded Ubuntu OS file to it. Please note, do NOT unzip the file.

Installation instruction begin.

- 1) Insert **USB Drive A** onto the RIC SJ64 device. Power it up, and continuously press F11 key until you see below window.
Choose the USB option and press 'Enter'.

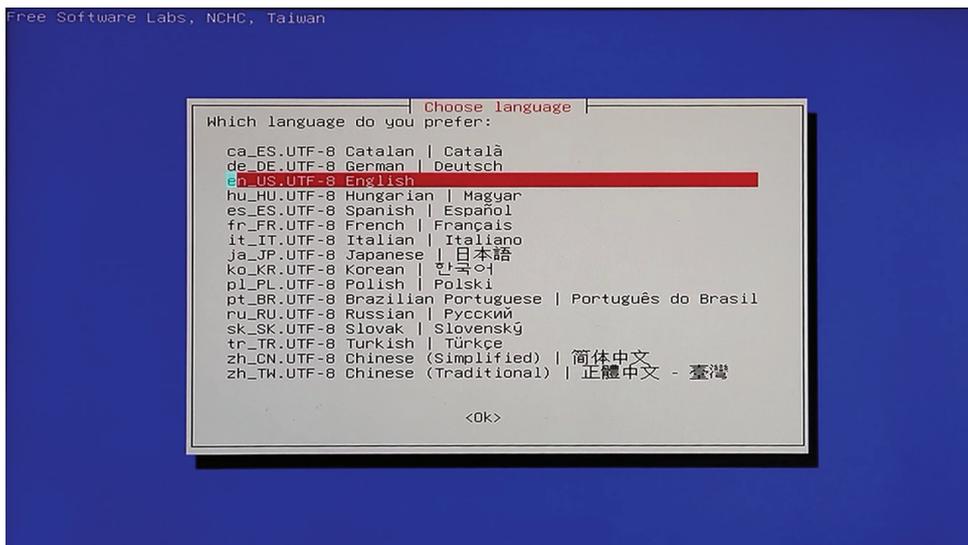


2) Choose the first one, and wait for a couple of seconds.

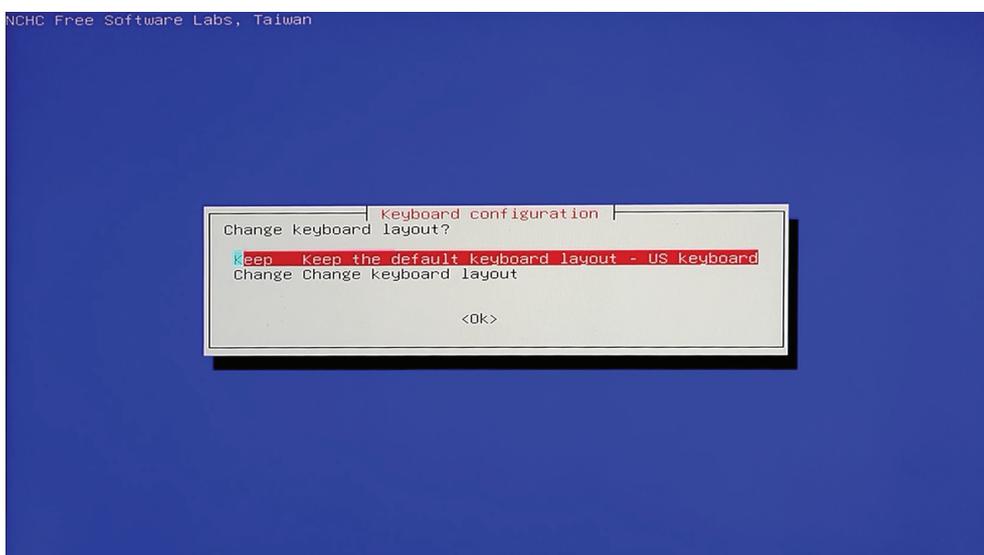


3) Choose a language for the OS.

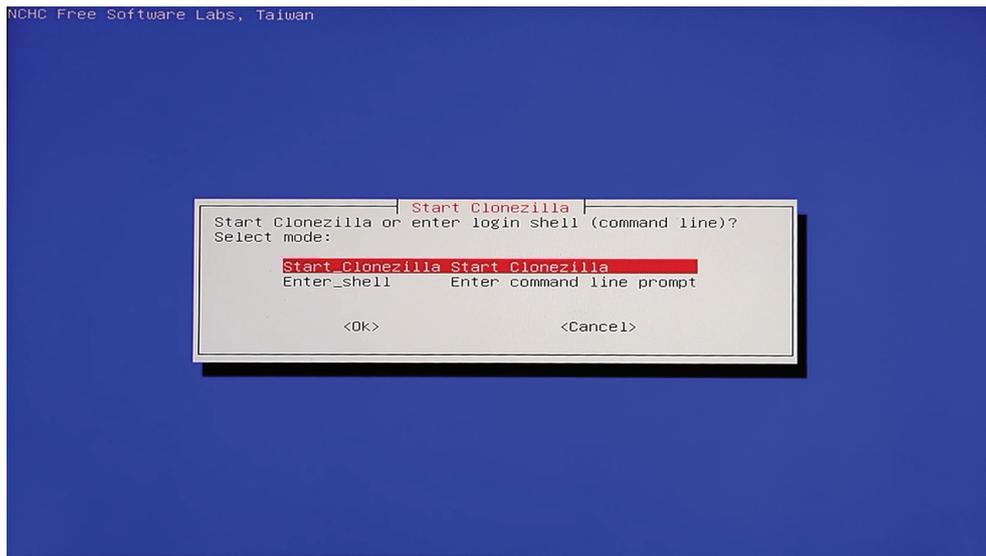
English is chosen here to make this instruction.



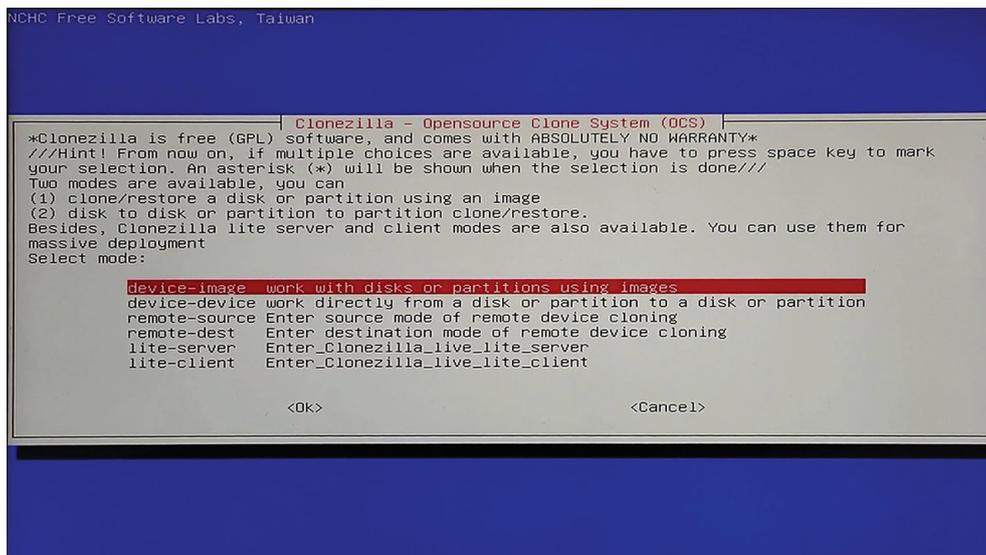
4) Choose a keyboard layout.



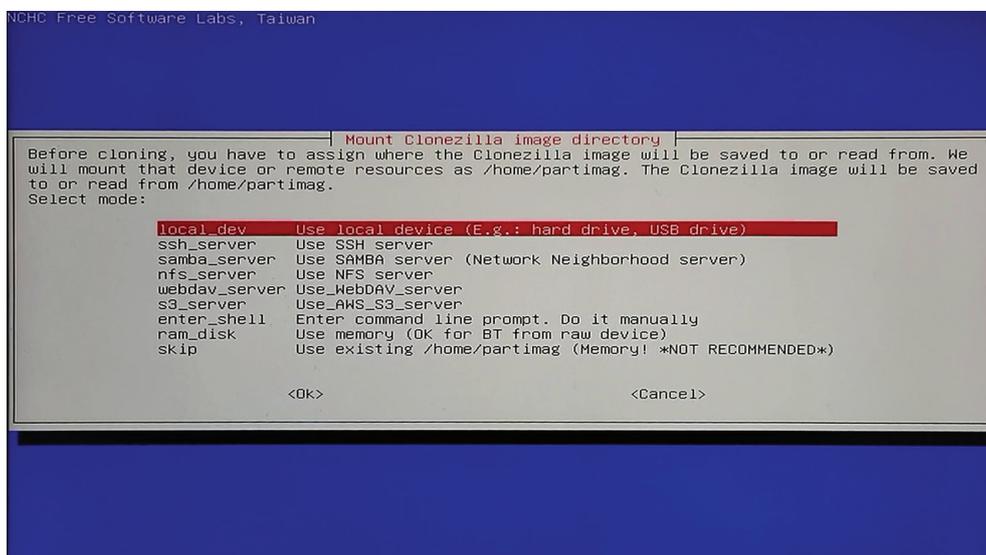
5) Choose 'Start_Clonezilla Start Clonezilla'.



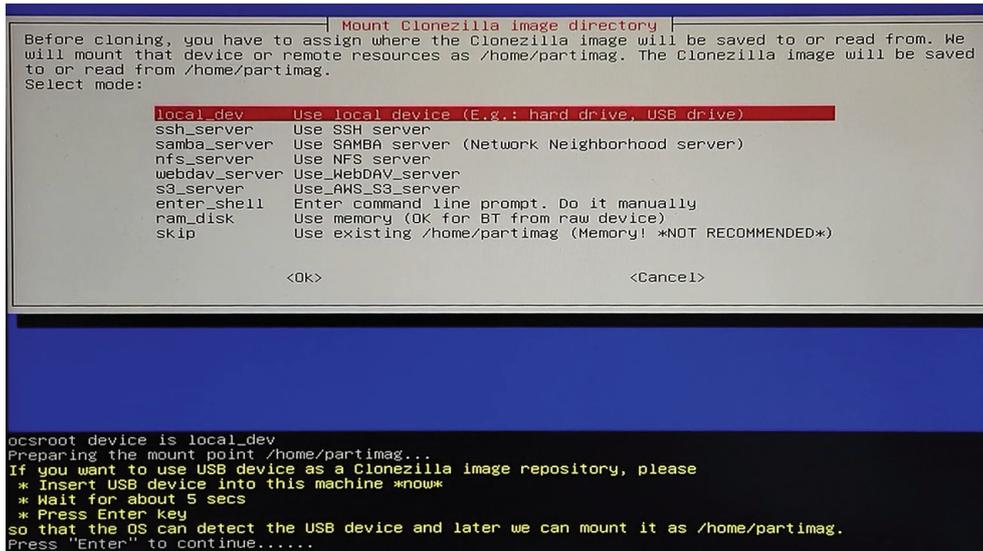
6) Choose 'device-image work with disks or partitions using images'.



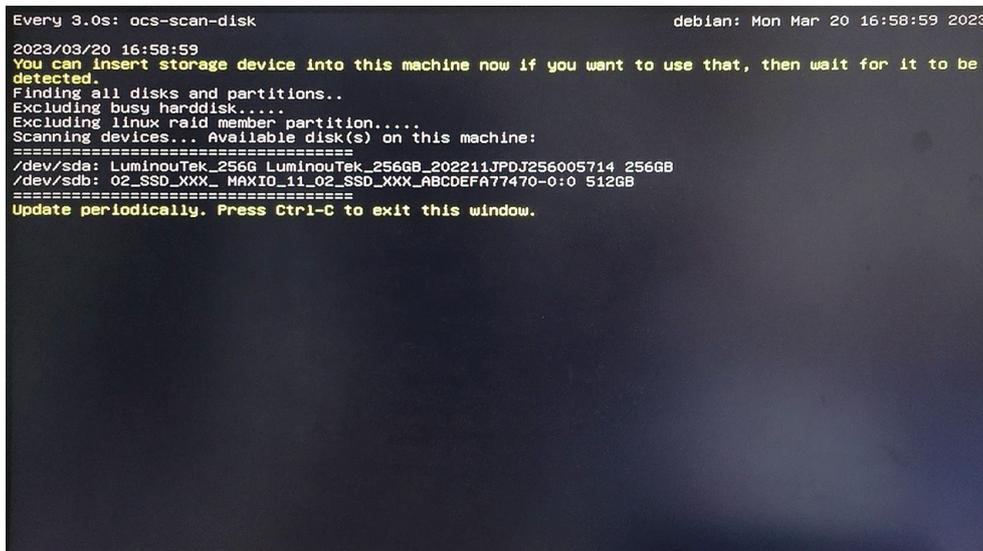
7) Choose 'local_dev Use local device (E.g.: hard drive, USB drive)'.



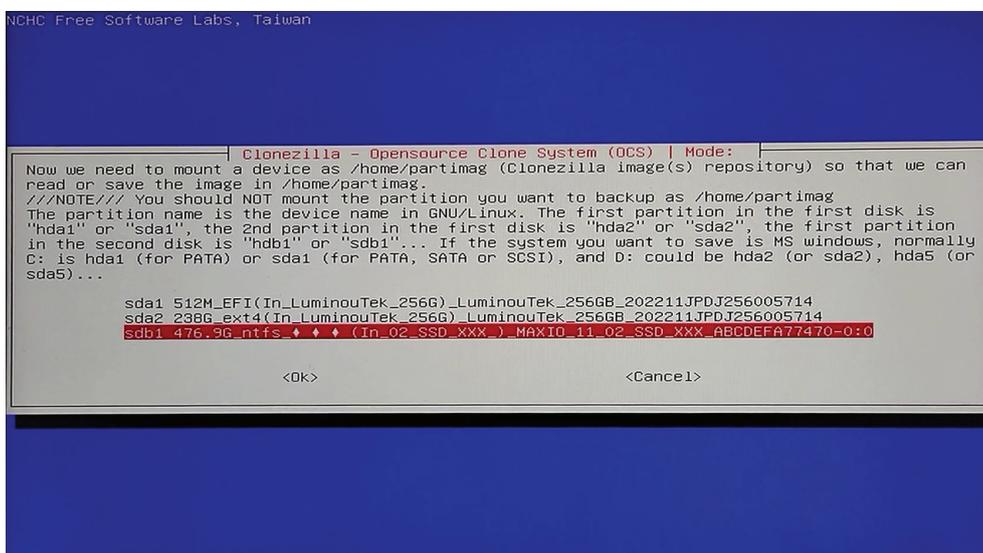
8) Press **ENTER** key to continue.



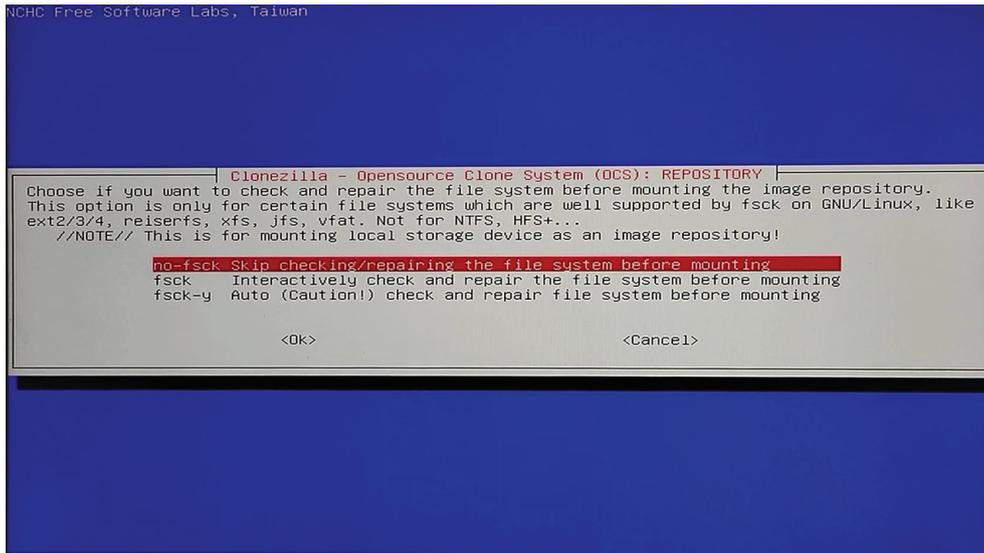
9) Insert USB Drive B to RIC SJ64 device. This window will be refreshed automatically.
When the USB Drive B is listed here, press combination key **[Ctrl-C]** to continue.



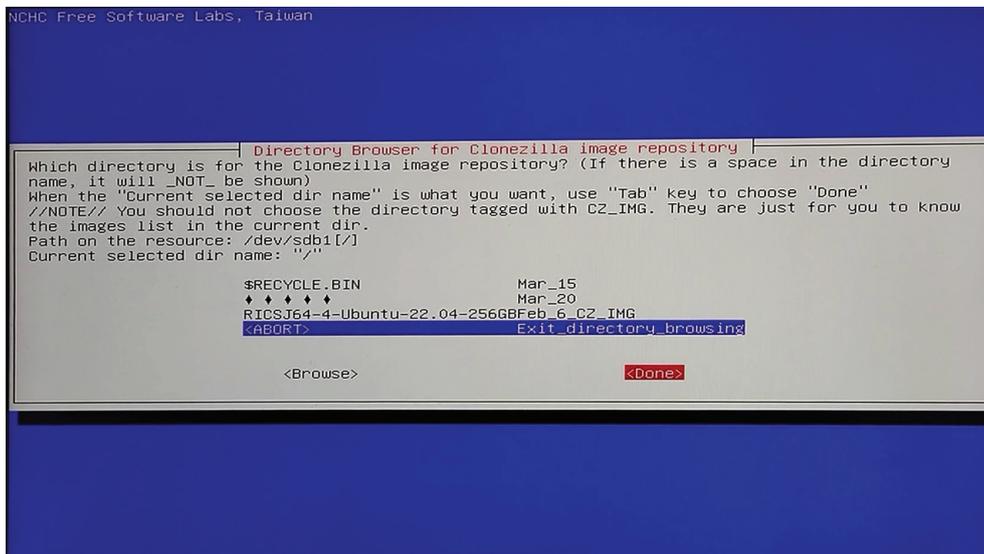
10) Choose USB Drive B. USB Drive B in this picture is **'sdb1'**.



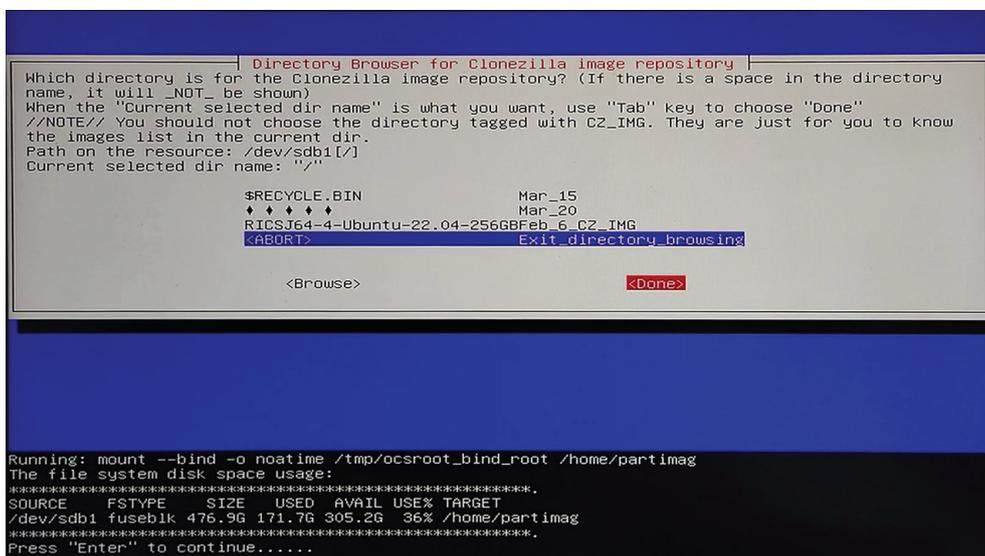
11) Choose 'no-fsck Skip checking/repairing the file system before mounting'.



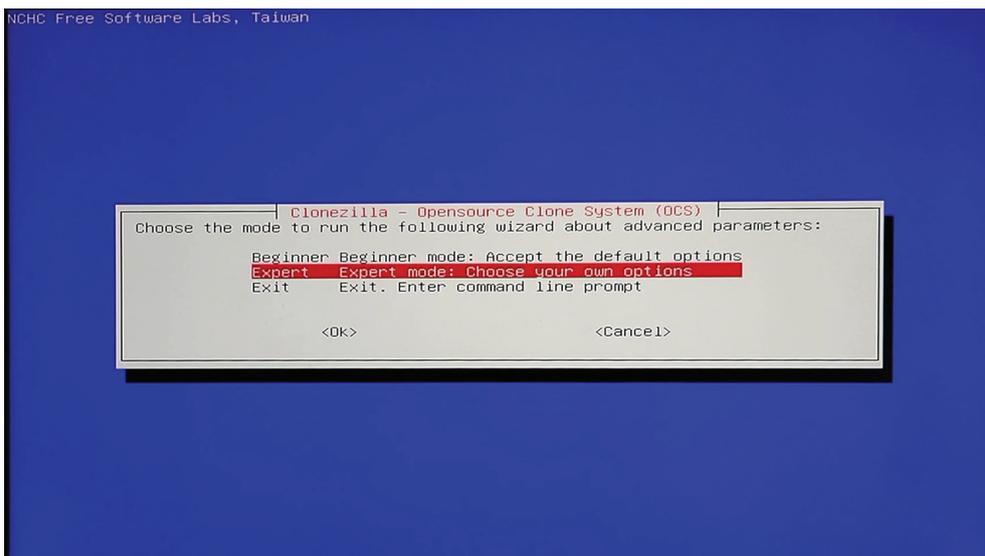
12) Press [TAB] key to choose 'Done', and press ENTER.



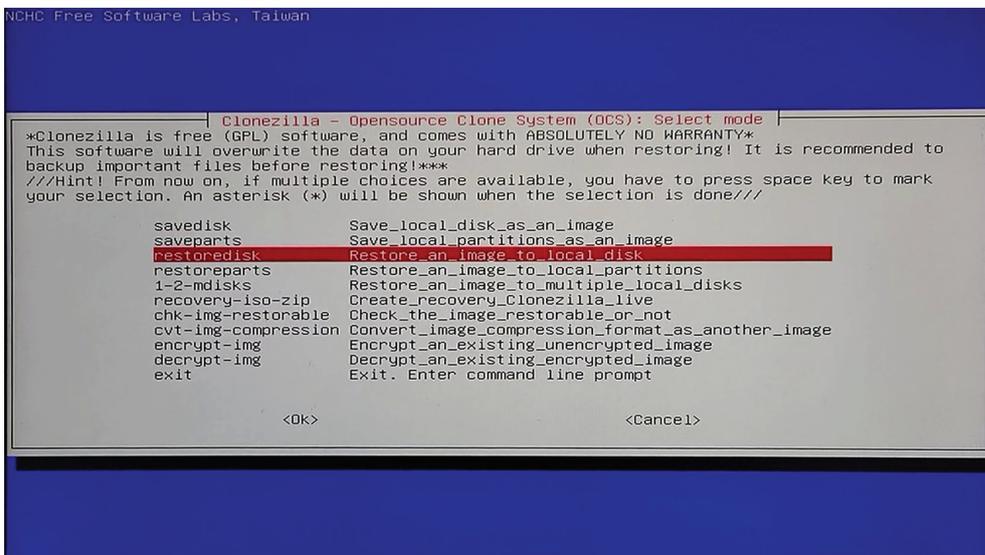
13) Press 'Enter' to continue.



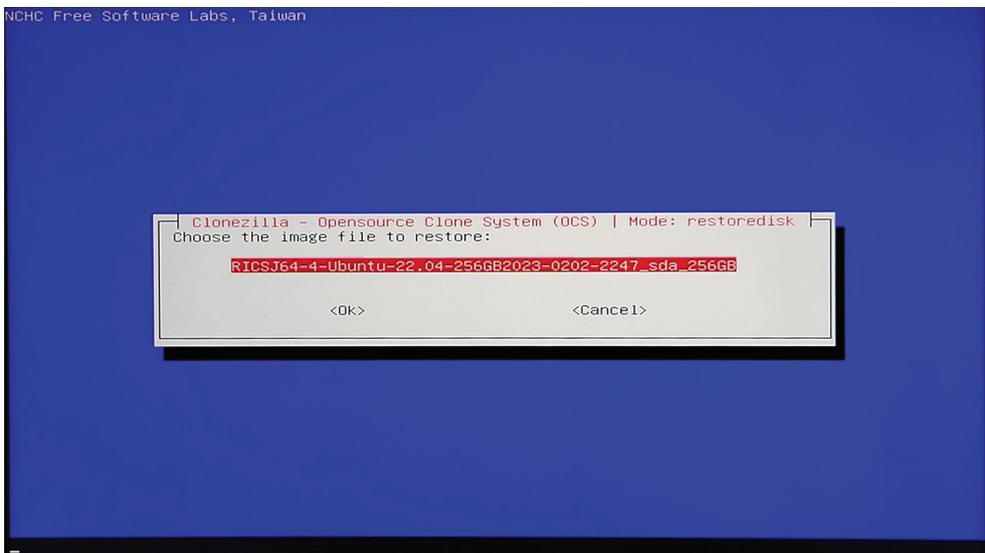
14) Choose 'Expert Expert mode: Choose your own options'.



15) Choose 'restoredisk Restore_an_image_to_local_disk'.

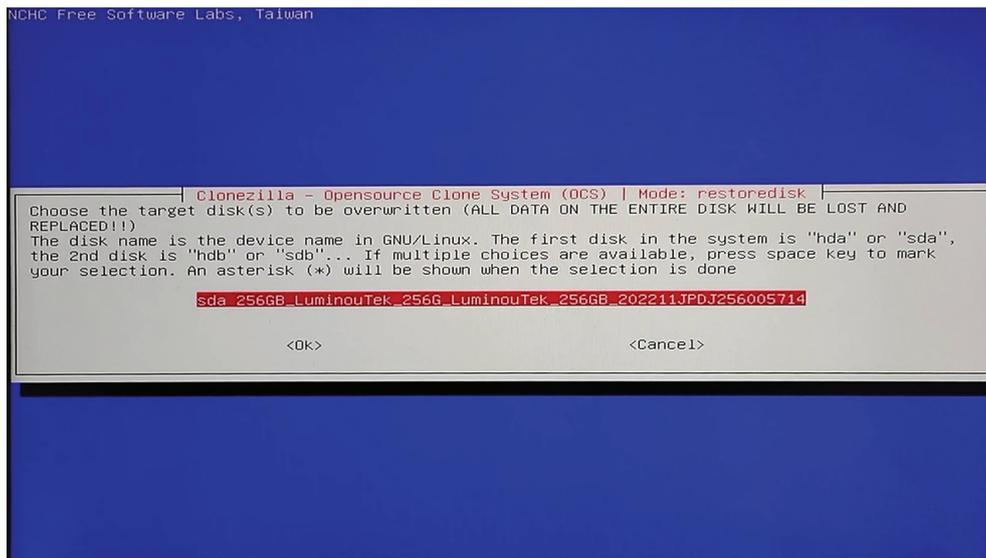


16) The Ubuntu OS file is detected in this step. Choose it and continue.

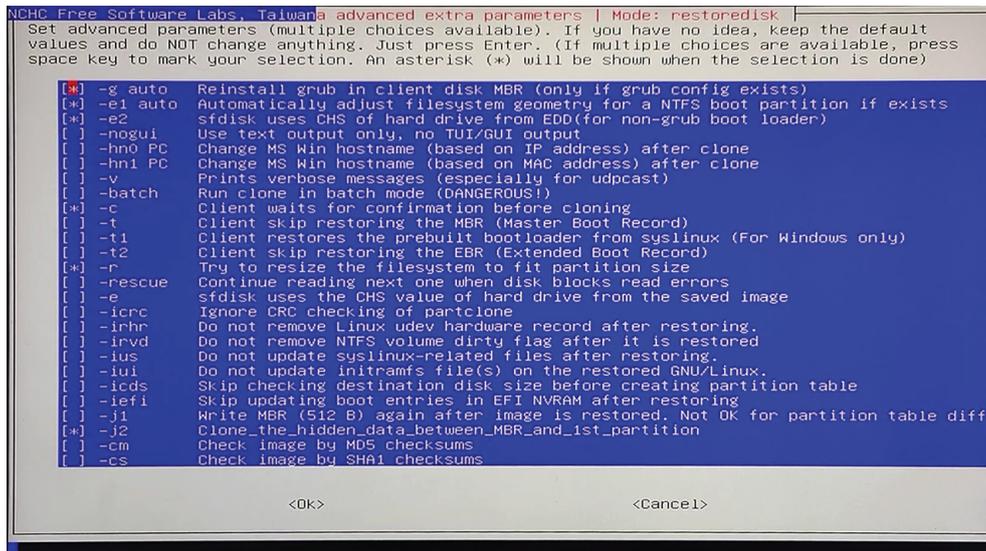


17) Choose a disk where Ubuntu will be installed.

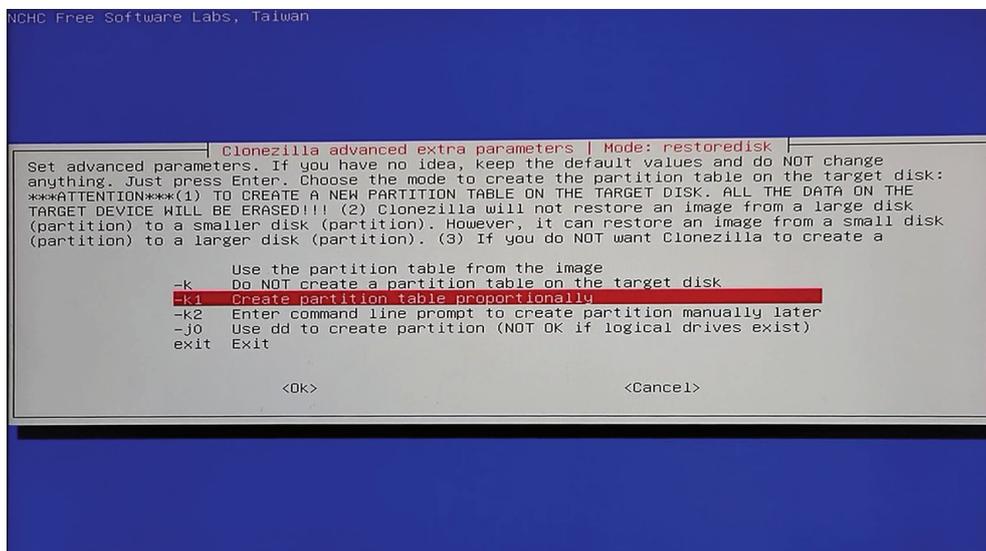
'sda' is the only disk on the RIC SJ64 device, so it is the only item here.



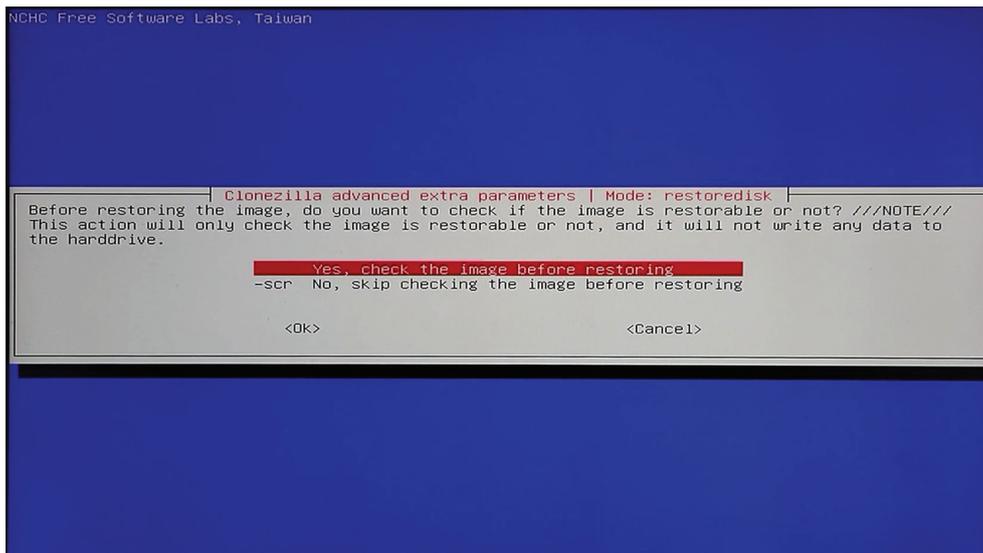
18) Choose the first one: 'Reinstall grub in client disk MBR (only if grub config exists)'.



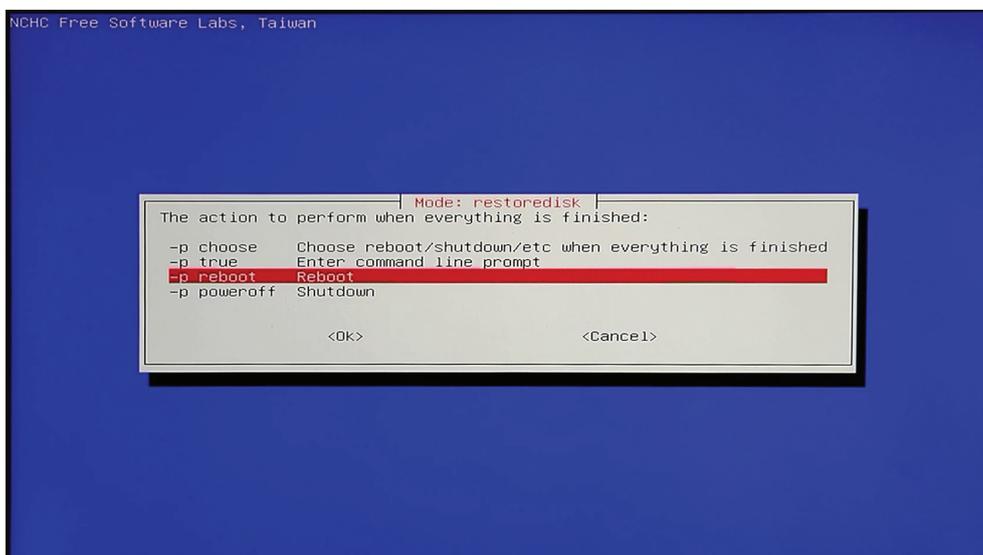
19) Choose '-k1 Create partition table pproportionally'.



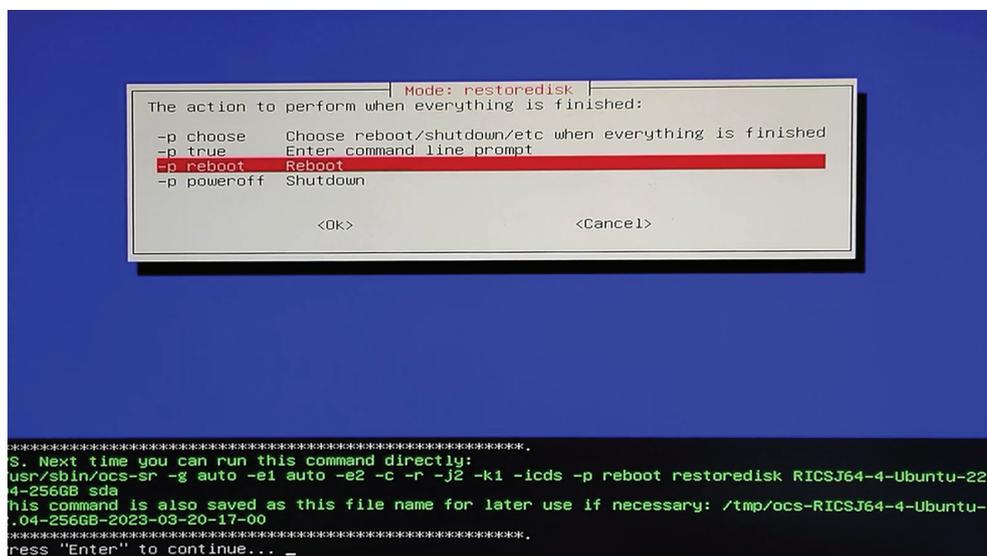
20) Choose 'Yes, check the image before restoring'.



21) Choose '-p reboot Reboot'.



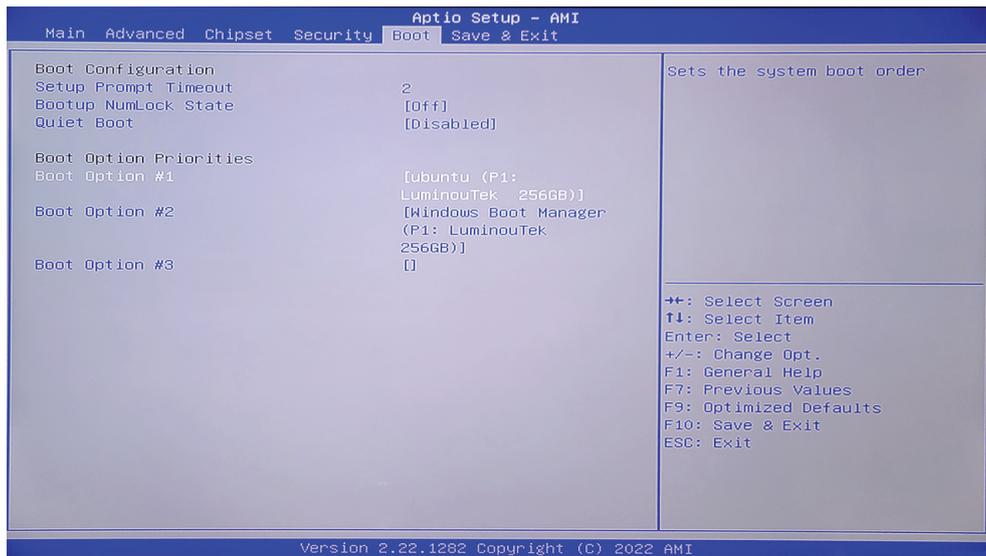
22) Press 'ENTER' to continue.



26) Just wait a couple minutes until it finishes installing Ubuntu OS.
Then the device will automatically restarted.

Please note, if the Ubuntu is not properly started, go to the BIOS by pressing DEL key when you attempt to power on the RIC SJ64.

Go to the 'Boot' tab, and set the 'Boot Option #1' as the Ubuntu.
Save and exit BIOS, restart the device. It should be working fine



4.2 How to install Windows OS

4.3 How to Flash the BIOS