



NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit

Duro Edge Computer

NDiS B117

User Manual

NEXCOM International Co., Ltd.

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www.nexcom.com

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PREFACE

Copyright

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Disclaimer

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Acknowledgements

NDIS B117 is a trademark of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices and describes how to keep the system CE compliant.

Declaration of Conformity

FCC

This equipment has been tested and verified to comply with the limits for a Class A digital device, pursuant to Part 15 of 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 instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

RoHS Compliance



NEXCOM RoHS Environmental Policy and Status Update

NEXCOM is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2011/65/EU, to be your trusted green partner and to protect our environment.

RoHS restricts the use of Lead (Pb) < 0.1% or 1,000ppm, Mercury (Hg) < 0.1% or 1,000ppm, Cadmium (Cd) < 0.01% or 100ppm, Hexavalent Chromium (Cr6+) < 0.1% or 1,000ppm, Polybrominated biphenyls (PBB) < 0.1% or 1,000ppm, and Polybrominated diphenyl Ethers (PBDE) < 0.1% or 1,000ppm.

In order to meet the RoHS compliant directives, NEXCOM has established an engineering and manufacturing task force to implement the introduction of green products. The task force will ensure that we follow the standard NEXCOM development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NEXCOM are renowned.

The model selection criteria will be based on market demand. Vendors and suppliers will ensure that all designed components will be RoHS compliant.

How to recognize NEXCOM RoHS Products?

For existing products where there are non-RoHS and RoHS versions, the suffix "(LF)" will be added to the compliant product name.

All new product models launched after January 2013 will be RoHS compliant. They will use the usual NEXCOM naming convention.

Warranty and RMA

NEXCOM Warranty Period

NEXCOM manufactures products that are new or equivalent to new in accordance with industry standard. NEXCOM warrants that products will be free from defect in material and workmanship for 2 years, beginning on the date of invoice by NEXCOM.

NEXCOM Return Merchandise Authorization (RMA)

- Customers shall enclose the "NEXCOM RMA Service Form" with the returned packages.
- Customers must collect all the information about the problems encountered and note anything abnormal or, print out any on-screen messages, and describe the problems on the "NEXCOM RMA Service Form" for the RMA number apply process.
- Customers can send back the faulty products with or without accessories (manuals, cable, etc.) and any components from the card, such as CPU and RAM. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, NEXCOM is not responsible for the devices/parts.
- Customers are responsible for the safe packaging of defective products, making sure it is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as "Out of Warranty."
- Any products returned by NEXCOM to other locations besides the customers' site will bear an extra charge and will be billed to the customer.

Repair Service Charges for Out-of-Warranty Products

NEXCOM will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

System Level

- Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.
- Items will be replaced with NEXCOM products if the original one cannot be repaired. Ex: motherboard, power supply, etc.
- Replace with 3rd party products if needed.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Board Level

- Component fee: NEXCOM will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Warnings

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

Cautions

- Electrostatic discharge (ESD) can damage system components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.
- Proper grounding is essential to protect against electrical surges and ensure stable operation. Always connect the grounding wire.

Safety Information

Before installing and using the device, note the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Follow all warnings and cautions in this manual.
- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.
- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
- The instructions shall require connection of the equipment protective earthing conductor to the installation protective earthing conductor (for example, by means of a power cord connected to a socket-outlet with earthing connection).

Installation Recommendations

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips screwdriver
- A flat-tipped screwdriver
- A grounding strap
- An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nose pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

Safety Precautions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
 - a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.
 - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - e. The equipment has been dropped and damaged.
 - f. The equipment has obvious signs of breakage.
15. Do not place heavy objects on the equipment.
16. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
17. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**

Technical Support and Assistance

1. For the most updated information of NEXCOM products, visit NEXCOM's website at www.nexcom.com.
2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
 - Product name and serial number
 - Detailed information of the peripheral devices
 - Detailed information of the installed software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wordings of the error messages

Warning!

1. Handling the unit: carry the unit with both hands and handle it with care.
2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.

Conventions Used in this Manual



Warning:

Information about certain situations, which if not observed, can cause personal injury. This will prevent injury to yourself when performing a task.



Caution:

Information to avoid damaging components or losing data.



Note:

Provides additional information to complete a task easily.

Global Service Contact Information

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Package Contents

Before continuing, please verify the contents of the product package. The items included are listed in the table below.

No.	Part Number	Name	Description	Qty
1	7400050007X00	Power adapter	POWER ADAPTER W/LOCK EDAC:EA10681G(T09) 50W 12V/4.16A 113x49x35mm	1

Ordering Information

The following provides ordering information.

NDiS B117 (P/N: 10W00B11701X0)

RK3568J, on-board 2GB LPDDR4 and 32GB eMMC

NDiS B117-4G-64G (P/N: 10W00B11700X0)

RK3568J, on-board 4GB LPDDR4 and 64GB eMMC

CHAPTER 1: PRODUCT INTRODUCTION

Overview

The NDIS B117 is a cost-effective Industrial IoT (IIoT) solution designed to meet diverse industrial applications with stable performance and flexible scalability. Powered by the Rockchip RK3568J Arm® Cortex®-A55 Quad-core processor, with 4GB LPDDR4 memory and up to 64GB of eMMC storage, it handles equipment monitoring, data processing, and automation with ease. Equipped with Gigabit Ethernet and scalable for Wi-Fi, Bluetooth, and 4G modules, the NDIS B117 enables multi-connectivity for service industries such as self-service car wash stations, manufacturing, logistics, and smart building applications. It's just-fit of I/O interfaces, allows seamless integration into a wide range of edge AI systems, adapting to various equipment needs. The NDIS B117 serves as an ideal platform for smart industrial applications, enabling companies to achieve industrial upgrades cost-effectively, enhancing their competitive edge.

Key Features

- Rockchip RK3568J Arm® Cortex®-A55 Quad-core processor
- Support 2GB/4GB LPDDR4
- Support 32GB/64GB eMMC
- 1 x HDMI® 2.0 output, up to 4096x2160@60Hz
- 2 x GbE LAN
- 1 x COM port, supports RS-232/422/485
- 2 x USB 3.2, Type-A
- 1 x M.2 Key B 3042 for an optional storage/4G LTE module
- 1 x M.2 Key E 2230 for an optional Wi-Fi/BT module

Physical Features

Front Panel



1. 3.5mm audio out (line out)
2. Antenna holes
3. DC In jack, 12V
4. COM port, supports RS-232/422/485
5. HDMI® 2.0, resolution up to 4096x2160@60Hz
6. USB 3.2 Type-A
7. USB OTG
8. 1GbE RJ45 LAN ports
9. Reset

Rear Panel



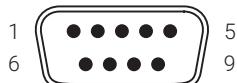
When connecting an A/V monitor using both audio (1) and HDMI® (5) cables, the audio output sequence prioritizes the audio cable first, followed by HDMI®. If the audio cable is removed, the audio signal will then be routed through HDMI®.



COM Port Pin Definition

Connector interface: RS-232/422/485

Connector type: DB9



Pin	RS232	RS422	RS485
1	DCD#_A	TX-	DAT-
2	RXD_A	TX+	DAT+
3	TXD_A	RX+	
4	DTR#_A	RX-	
5	GND		
6	DSR#_A		
7	RTS#_A		
8	CTS#_A		
9	RI#_A		

Hardware Specifications

Processor

- Rockchip RK3568J Arm® Cortex®-A55 Quad-core SoC processor

Memory

- Onboard LPDDR4, 2GB/4GB

Storage

- Onboard eMMC, 32GB/64GB

Display Interface

- 1 x HDMI® 2.0 output, up to 4096x2160@60Hz

Expansion Slot

- 1 x M.2 Key B 3042, supports a storage/4G LTE (SATA, USB 2.0) module
- 1 x M.2 Key E 2230, supports a Wi-Fi/BT (PCIe , USB 2.0) module
- 1 x microSD slot
- 1 x nano-SIM

I/O Interface-Front

- 1 x Line out
- 3 x Antenna hole

I/O Interface-Rear

- 1 x DC jack
- 1 x COM port, supports RS-232/422/485
- 1 x HDMI® 2.0 output, up to 4096x2160@60Hz
- 2 x GbE LAN port
- 1 x USB 3.2, Type-A
- 1 x USB OTG
- 1 x Reset button

Mechanical

- Dimensions: 179.3mm (L) x 115.6mm (W) x 27.2mm (H)
- Net weight: 0.3kg

Package Information

- Dimensions: 482mm (W) x 230mm (D) x 183mm (H)
- Gross weight: 5kg (5 units per carton)

Power Supply

- 1 x External AC/DC 12V/120W power adapter
- DC +12V input
- 1 x 50W power adapter (12V/4.16A) included

Environment

- Operating temperature: -20°C~60°C
- Storage temperature: -20°C~85°C
- Relative humidity: 95% (non-condensing)

Certification

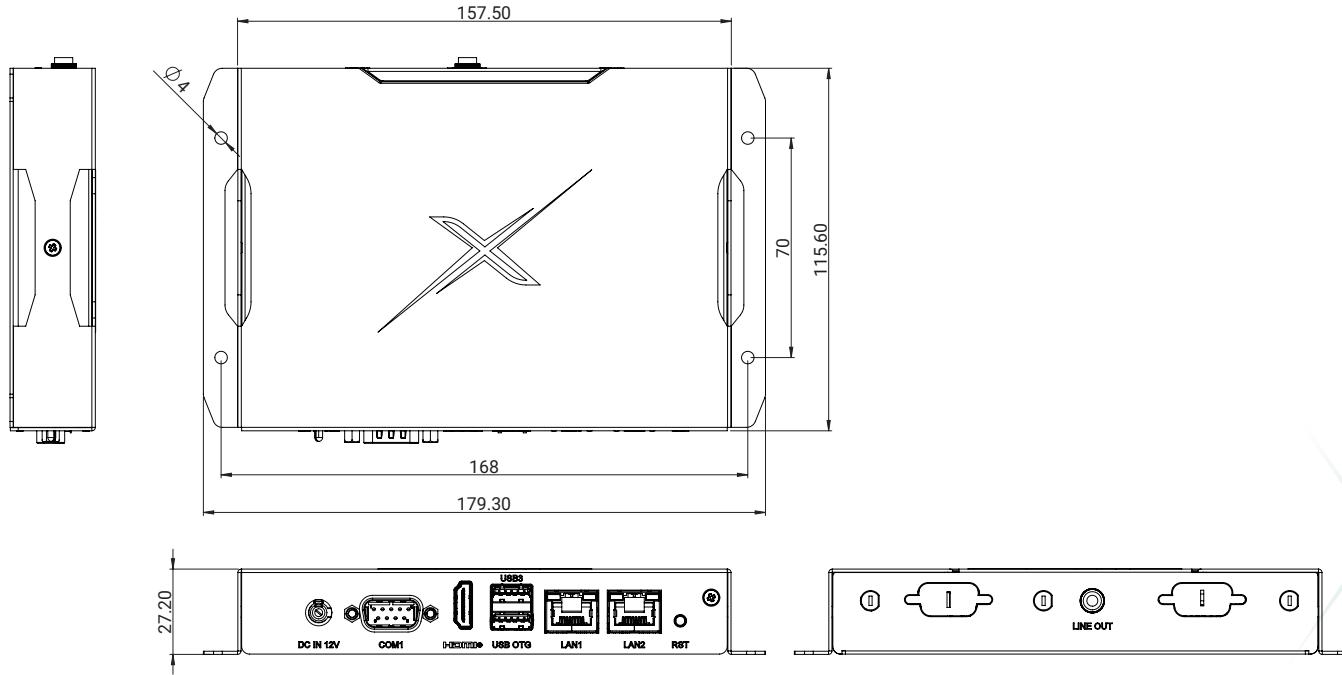
- CE approval
- FCC Class A

Operating System

- Android™ 13

* Android is a trademark of Google LLC.

Mechanical Dimensions



CHAPTER 2: SYSTEM SETUP

Removing the Chassis Cover



Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

1. To install the expansion modules, refer to the image on the right to identify the screw locations.
2. When loosening the screws at ① and ②, use a hex nut driver with the appropriate hexagonal bit sizes, taking care to select the correct size to avoid damaging the screw heads.



3. After removal, place the screws in a safe location for later reassembly. Then follow the directions indicated below to remove the top chassis.

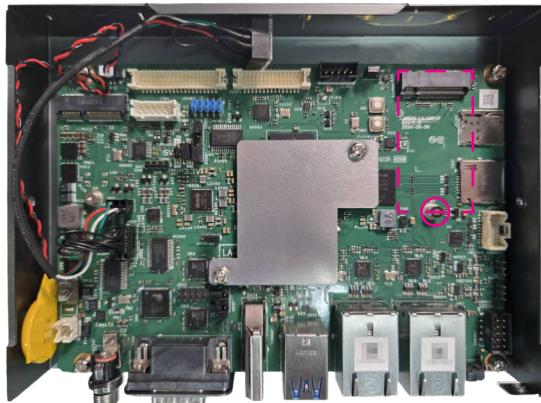


4. Reassemble the top chassis back onto the system once the installation is complete.

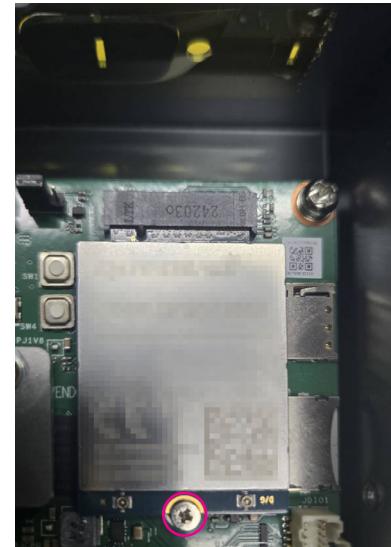
Installing Dedicated Communication Modules

LTE/5G Module Installation

- By default, the installed 4G/LTE module is the Quectel EM060K.
- 1. Locate the M.2 connector and loosen the screw for later use.

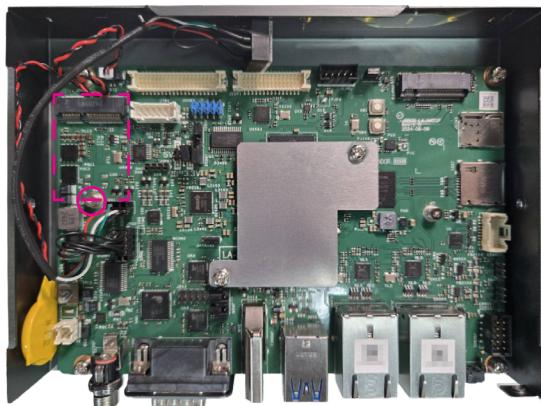


2. Insert the module into the slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot. Then fasten the screw removed in the previous step into the mounting hole to secure the module.



Wi-Fi Module Installation

- By default, the installed Wi-Fi and Bluetooth combo module is the Quectel ENL-R8852BE (RTL8852BE).
- 1. Locate the M.2 connector and loosen the screw for later use.



- 2. Insert the module into the slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot. Then fasten the screw removed in the previous step into the mounting hole to secure the module.

