

# Lanner

## Network Computing

Hardware Platforms for Network Computing

# NCS2-MINIPCIE02 User Manual

Version: 1.0

Date of Release: 2018-11-09

## Icon Descriptions

The icons are used in the manual to serve as an indication of interest topics or important messages. Below is a description of these icons:



**Note:** This check mark indicates that there is a note of interest and is something that you should pay special attention to while using the product.



**Warning:** This exclamation point indicates that there is a caution or warning and it is something that could damage your property or product.

## Online Resources

The listed websites are links to the on-line product information and technical support.

Resources	URL
Lanner	<a href="http://www.lannerinc.com">http://www.lannerinc.com</a>
Product Resource	<a href="http://www.lannerinc.com/download-center">http://www.lannerinc.com/download-center</a>
RMA	<a href="http://eRMA.lannerinc.com">http://eRMA.lannerinc.com</a>

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# Revision History

Version	Date	Descriptions
1.0	2018/11/09	1 <sup>st</sup> official release

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# CHAPTER 1: PRODUCT OVERVIEW

**NCS2-MINIPCI02** is an expansion card support Wi-Fi or LTE module. This module can be used on Lanner standard system that support NCS2 NIC module.

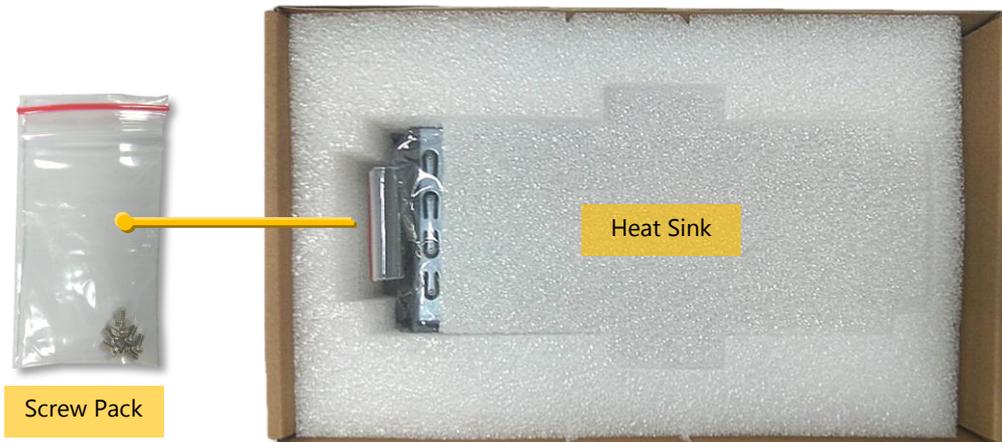
## Ordering Information

Item	Description
<b>NCS2-MINIPCI02A</b>	1x Gen2 PCIe8 Golden finger (2x PCIe4 signal), 2x Mini-PCIe sockets (1x PCIE +1x USB 3.0 signal), 1x M.2 Socket (1x USB 3.0 signal), 3x NANO SIM Card Socket (1x for MiniPCIe socket + 2x for M.2 socket, USB 3.0 signal)
<b>NCS2-MINIPCI02B</b>	1x Gen2 PCIe8 Golden finger (4x PCIe2 signal), 2x Mini-PCIe sockets for PCIE signal, 1x M.2 Socket (1x USB 3.0 signal), 3x NANO SIM Card Socket (1x for MiniPCIe socket + 2x for M.2 socket, USB 3.0 signal)

## Package Content

Your package contains the following items:

- ▶ 1x NCS2-MINIPCI02 expansion card
- ▶ 1x Screw Pack
- ▶ Antennas (by customer request)

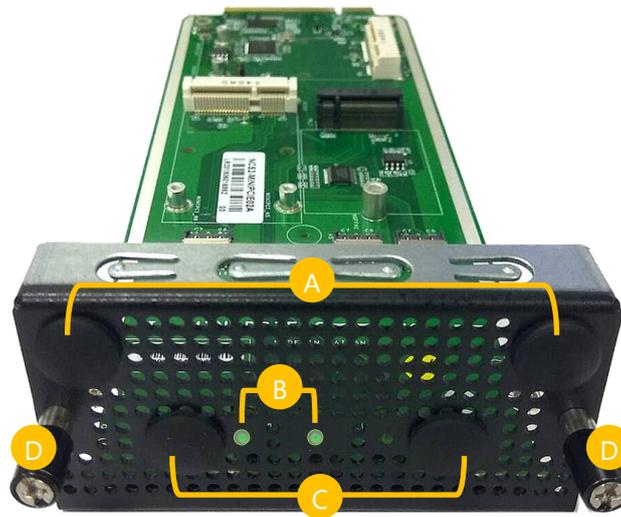


# Specifications

<b>Form Factor</b>		IO-MINIPCIE02A
<b>Network Interfaces</b>	Chipsets	1x Renesas Bridge (PCIE Gen2 to USB3.0 Bridge) 1x I2C switch (Reserved) 1x MUX switch
	Ethernet Ports	N/A
<b>Interface</b>	To Main Board	1x Gen2 PCIe*8 golden finger (2x PCIe*4 signal) (SKU A) 1x Gen2 PCIe*8 golden finger (4x PCIe*2 signal) (SKU B by project)
	To IO	2x Mini-PCIe full size sockets 3x NANO SIM card socket 1x M.2 socket
<b>Environment</b>	Operating/Storage Temperature	0 to 40°C /-40 to 70°C
	Relative Humidity	5% to 90%, non-condensing
<b>Compliant</b>	EU RoHS 2.0	Yes
	China RoHS	Required
<b>Certifications</b>	PTCRB	Yes
	CE	Class A by project
	FCC	Class A by project
	UL	Required by project
<b>Dimension</b>	(WxDxH)	194 x 75mm
	Weight	0.2 kg

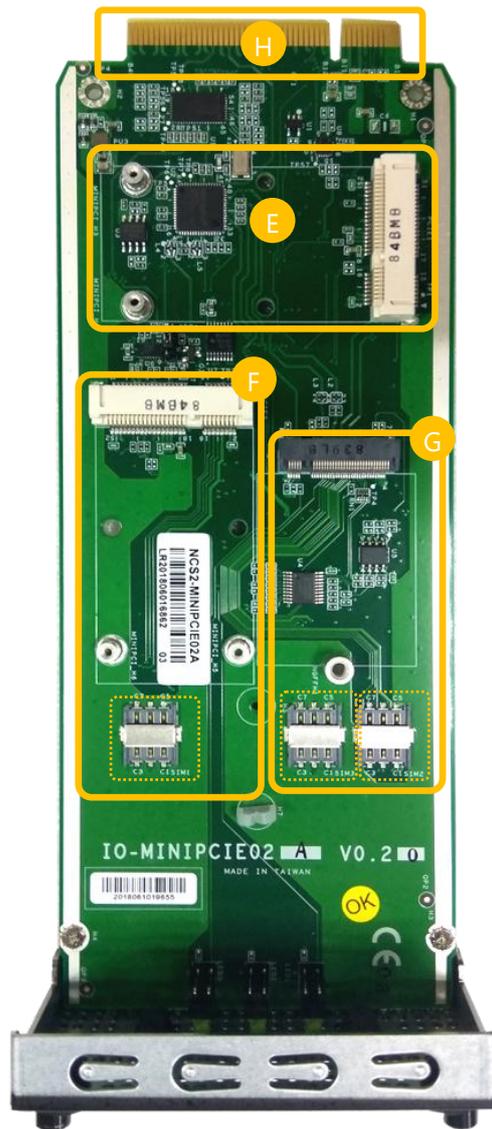
# Physical Overview

## Front View



No.	Description	
A	LTE Antenna Jack	The SMA sockets for LTE Antenna
B	Wi-Fi / LTE Connectivity Status LED	<p>The behavior of the individual LED indicator will vary by the module used.</p>  <p>LTE (M.2 Interface) LTE (Mini-PCIe Interface)</p>
C	Wi-Fi Antenna Jack	The SMA sockets for Wi-Fi Antenna
D	Lock Screws	To secure the expansion slot door

## Top View

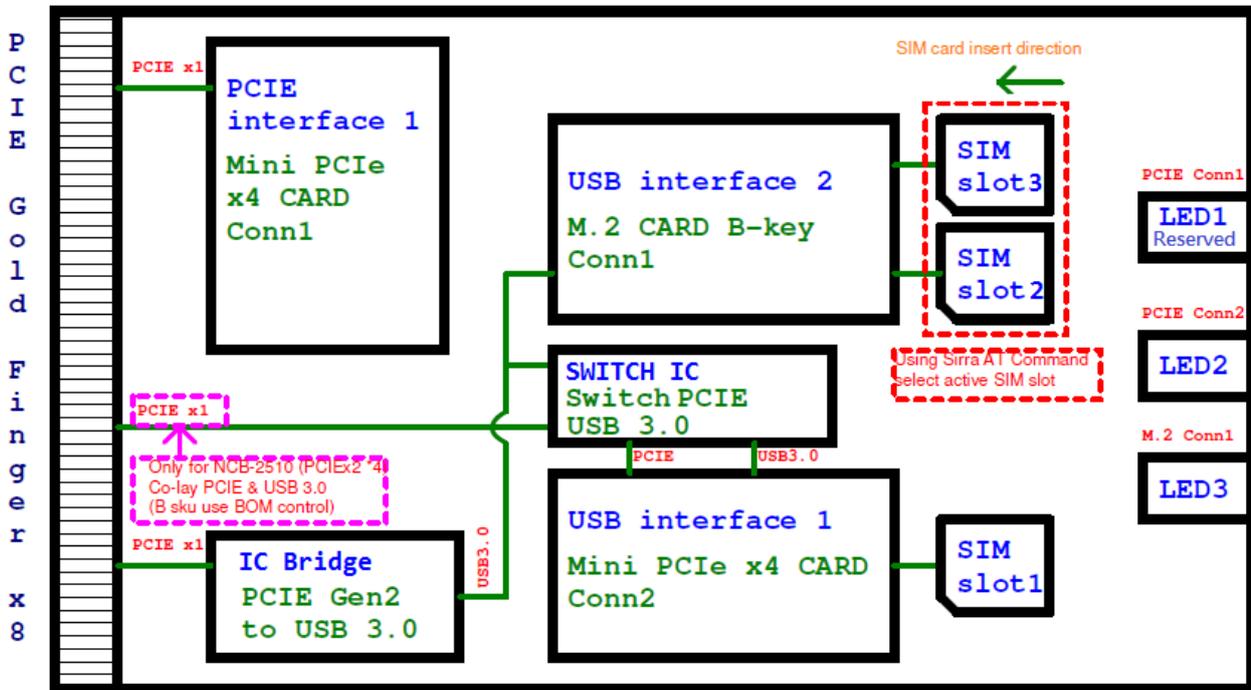


No.	Description	
E	Wi-Fi Module Slot	To accommodate a mini-PCIe Wi-Fi module card
F	LTE Module Slot with SIM card Holder	To accommodate a mini-PCIe LTE module card and a Nano SIM card
G	LTE Module Slot with SIM card Holder	To accommodate a M.2 LTE module card and 2x Nano SIM cards
H	Gen2 PCIe8 Golden Finger	

# CHAPTER 2: BOARD INFORMATION

## Block Diagram

The block diagram indicates how data flows among components on the board. Please refer to the following figure for your motherboard's layout design.



# CHAPTER 3: HARDWARE SETUP

To access some components and perform certain service procedures, you must perform the following procedures first:

- (1) To reduce the risk of personal injury, electric shock, or damage to the equipment, please remove all power sources
- (2) Please wear ESD protected gloves before conducting the following steps.

## Installing the Wi-Fi Module

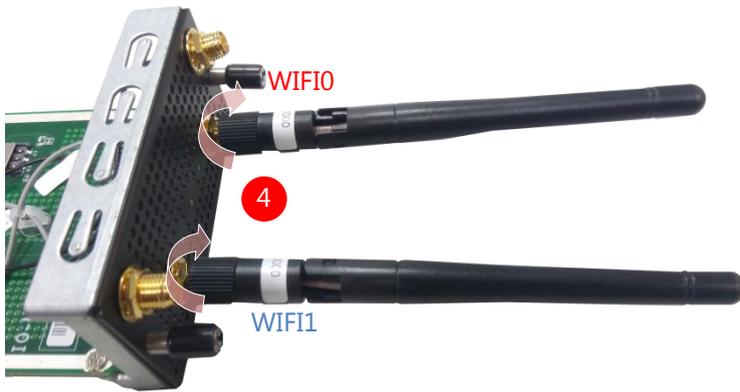
- 1. Locate the Mini-PCIe slot for WI-Fi module, and align the notch of the module with the socket key in the slot. Insert the module at 30 degrees into the socket until it is fully seated in the connector.



- 2. Push down on the module and secure it with screws that come with its package.
- 3. Snap the Wi-Fi antenna cable onto the U.FL connector for **WIFI0**, and the other one onto the U.FL connector for **WIFI1**.

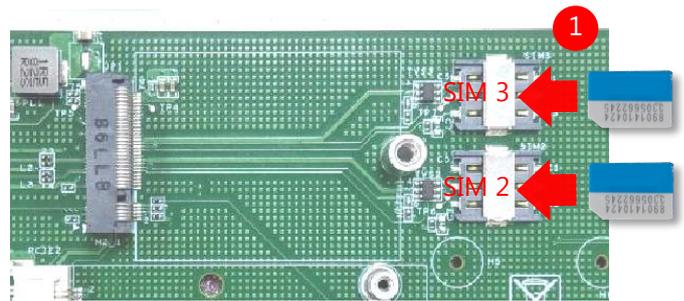
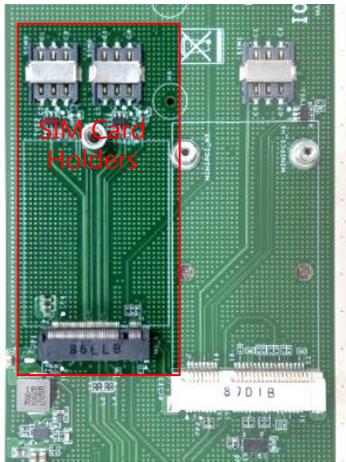


4. Attach the Wi-Fi antennas onto the front panel. Make sure the connector for **WIFIO** and the connector for **WIFI1** are connected to the front panel as shown in the picture.



## Installing the M.2 Interface LTE Module

1. Locate the M.2 slot for LTE module and insert the nano-SIM cards into the card holder above it.



2. Locate the M.2 slot. Align the notch of the module with the socket key in the slot. Insert the module at 30 degrees into the socket until it is fully seated in the connector.



3. Push down on the module and secure it with the screw that comes with the package.



4. Snap one LTE antenna cable onto the U.FL connector for **Main**, and the other one onto the U.FL connector for **AUX**.

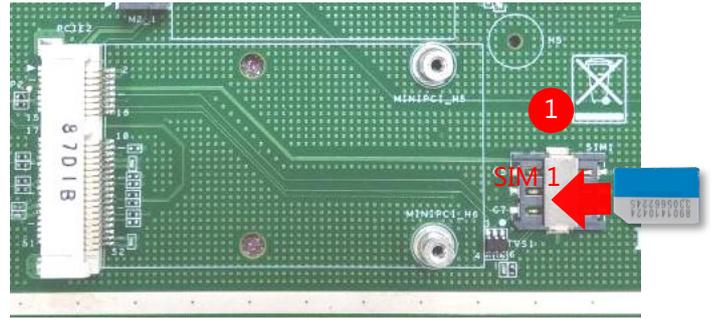
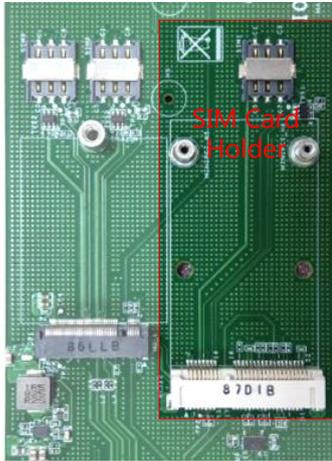
5. Attach the LTE antennas onto the front panel. Make sure the connector for **Main** and the connector for **Aux** are connected to the front panel as shown in the picture.



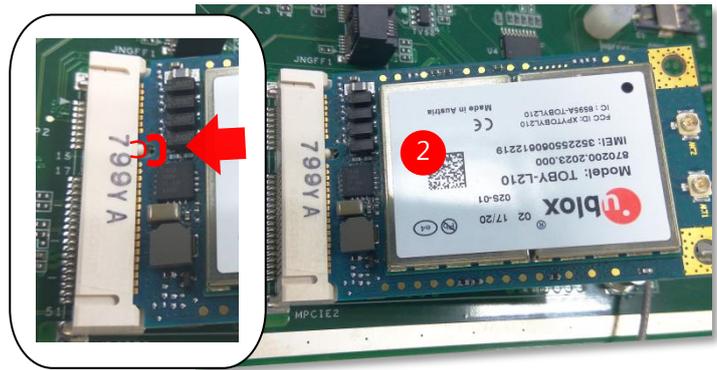
**Note:** For use of the M.2 Card, the accompanied SIM card should be inserted into SIM2 slot or SIM 3 slot. Do not insert the SIM card into SIM1 slot for M.2 card, since SIM1 slot is dedicated for Mini PCIe Slot 1. The SIM card inserted in SIM1 slot will not function for M.2 Card.

## Installing the Mini-PCIe Interface LTE Module

1. Locate the mini-PCIe slot for LTE module and insert the nano-SIM card into the card holder above it.



2. Locate the mini-PCIe slot. Align the notch of the module with the socket key in the slot. Insert the module at 30 degrees into the socket until it is fully seated in the connector.



3. Push down on the module and secure it with the screws that come with the package.



4. Snap one LTE antenna cable onto the U.FL connector for **Main**, and the other one onto the U.FL connector for **AUX**.



5. Attach the LTE antennas onto the front panel. Make sure the connector for **Main** and the connector for **Aux** are connected to the front panel as shown in the picture.



## Installing the Expansion Card

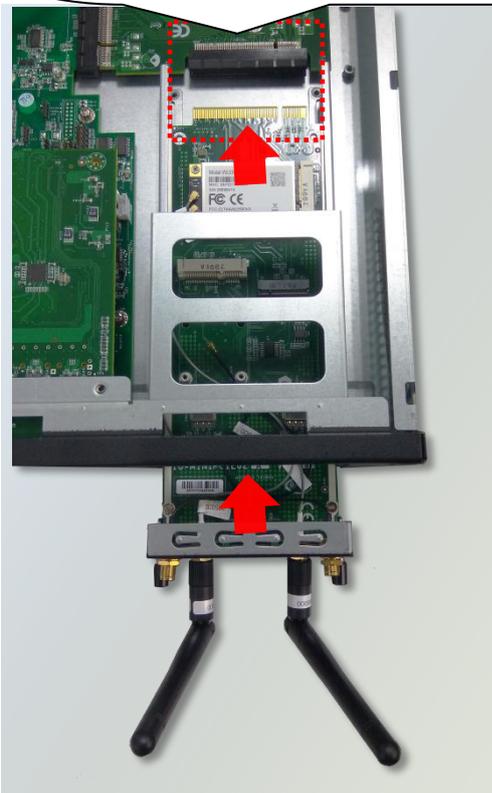
1. Remove the original expansion slot door from the system.
2. Remove the top cover to reveal the motherboard (optional).



3. Insert your expansion card. (The system shown in the image below is for reference only)



Align the gold fingers to the PCIe slot on the motherboard carefully while inserting this module.



4. Once the expansion card is firmly seated, rotate clockwise and tighten the two lock-screws to secure the card, and then recover the system's top cover.



# APPENDIX: TERMS AND CONDITIONS

## Warranty Policy

1. All products are under warranty against defects in materials and workmanship for a period of one year from the date of purchase.
2. The buyer will bear the return freight charges for goods returned for repair within the warranty period; whereas the manufacturer will bear the after service freight charges for goods returned to the user.
3. The buyer will pay for the repair (for replaced components plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.
4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service," RMA goods will be returned at customer's expense.
5. The following conditions are excluded from this warranty:
  - ▶ Improper or inadequate maintenance by the customer
  - ▶ Unauthorized modification, misuse, or reversed engineering of the product
  - ▶ Operation outside of the environmental specifications for the product.

## RMA Service

### Requesting an RMA#

1. To obtain an RMA number, simply fill out and fax the "RMA Request Form " to your supplier.
2. The customer is required to fill out the problem code as listed. If your problem is not among the codes listed, please write the symptom description in the remarks box.
3. Ship the defective unit(s) on freight prepaid terms. Use the original packing materials when possible.
4. Mark the RMA# clearly on the box.



**Note:** Customer is responsible for shipping damage(s) resulting from inadequate/loose packing of the defective unit(s). All RMA# are valid for 30 days only; RMA goods received after the effective RMA# period will be rejected.

## RMA Service Request Form

When requesting RMA service, please fill out the following form. Without this form enclosed, your RMA cannot be processed.

<b>RMA No:</b>	Reasons to Return: <input type="checkbox"/> Repair(Please include failure details) <input type="checkbox"/> Testing Purpose
Company:	Contact Person:
Phone No.	Purchased Date:
Fax No.:	Applied Date:
Return Shipping Address: _____	
Shipping by: <input type="checkbox"/> Air Freight <input type="checkbox"/> Sea <input type="checkbox"/> Express _____	
<input type="checkbox"/> Others: _____	

Item	Model Name	Serial Number	Configuration

Item	Problem Code	Failure Status

**\*Problem Code:**

- |                        |                              |                    |                          |
|------------------------|------------------------------|--------------------|--------------------------|
| 01:D.O.A.              | 07: BIOS Problem             | 13: SCSI           | 19: DIO                  |
| 02: Second Time R.M.A. | 08: Keyboard Controller Fail | 14: LPT Port       | 20: Buzzer               |
| 03: CMOS Data Lost     | 09: Cache RMA Problem        | 15: PS2            | 21: Shut Down            |
| 04: FDC Fail           | 10: Memory Socket Bad        | 16: LAN            | 22: Panel Fail           |
| 05: HDC Fail           | 11: Hang Up Software         | 17: COM Port       | 23: CRT Fail             |
| 06: Bad Slot           | 12: Out Look Damage          | 18: Watchdog Timer | 24: Others (Pls specify) |

**Request Party**

**Confirmed By Supplier**

\_\_\_\_\_  
Authorized Signature / Date

\_\_\_\_\_  
Authorized Signature / Date