Lanner

# Network Appliance Platforms

Hardware Platforms for Network Computing

# NCS2-IQM203
# User Manual

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# About this Document

This manual describes the overview of the various functionalities of this product, and the information you need to get it ready for operation. It is intended for those who are:

- responsible for installing, administering and troubleshooting this system or Information Technology professionals.
- assumed to be qualified in the servicing of computer equipment, such as professional system integrators, or service personnel and technicians.

The latest version of this document can be found on Lanner's official website, available either through the product page or through the Lanner Download Center page with a login account and password.

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# Safety Guidelines

Follow these guidelines to ensure general safety:

- Keep the chassis area clear and dust-free during and after installation.
- Do not wear loose clothing or jewelry that could get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Disconnect all power by turning off the power and unplugging the power cord before installing or removing a chassis or working near power supplies
- Do not work alone if potentially hazardous conditions exist.
- Never assume that power is disconnected from a circuit; always check the circuit.

# Consignes de sécurité

Suivez ces consignes pour assurer la sécurité générale :

- Laissez la zone du châssis propre et sans poussière pendant et après l'installation.
- Ne portez pas de vêtements amples ou de bijoux qui pourraient être pris dans le châssis. Attachez votre cravate ou écharpe et remontez vos manches.
- Portez des lunettes de sécurité pour protéger vos yeux.
- N'effectuez aucune action qui pourrait créer un danger pour d'autres ou rendre l'équipement dangereux.
- Coupez complètement l'alimentation en éteignant l'alimentation et en débranchant le cordon d'alimentation avant d'installer ou de retirer un châssis ou de travailler à proximité de sources d'alimentation.
- Ne travaillez pas seul si des conditions dangereuses sont présentes.
- Ne considérez jamais que l'alimentation est coupée d'un circuit, vérifiez toujours le circuit. Cet appareil génère, utilise et émet une énergie radiofréquence et, s'il n'est pas installé et utilisé conformément aux instructions des fournisseurs de composants sans fil, il risque de provoquer des interférences dans les communications radio.

# Operating Safety

- Electrical equipment generates heat. Ambient air temperature may not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Be sure that the room in which you choose to operate your system has adequate air circulation.
- Ensure that the chassis cover is secure. The chassis design allows cooling air to circulate effectively. An open chassis permits air leaks, which may interrupt and redirect the flow of cooling air from internal components.
- Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD damage occurs when electronic components are improperly handled and can result in complete or intermittent failures. Be sure to follow ESD-prevention procedures when removing and replacing components to avoid these problems.
- Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. If no wrist strap is available, ground yourself by touching the metal part of the chassis.
- Periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms (Mohms).

# Sécurité de fonctionnement

- L'équipement électrique génère de la chaleur. La température ambiante peut ne pas être adéquate pour refroidir l'équipement à une température de fonctionnement acceptable sans circulation adaptée. Vérifiez que votre site propose une circulation d'air adéquate.
- Vérifiez que le couvercle du châssis est bien fixé. La conception du châssis permet à l'air de refroidissement de bien circuler. Un châssis ouvert laisse l'air s'échapper, ce qui peut interrompre et rediriger le flux d'air frais destiné aux composants internes.
- Les décharges électrostatiques (ESD) peuvent endommager l'équipement et gêner les circuits électriques. Des dégâts d'ESD surviennent lorsque des composants électroniques sont mal manipulés et peuvent causer des pannes totales ou intermittentes. Suivez les procédures de prévention d'ESD lors du retrait et du remplacement de composants.
- Portez un bracelet anti-ESD et veillez à ce qu'il soit bien au contact de la peau. Si aucun bracelet n'est disponible, reliez votre corps à la terre en touchant la partie métallique du châssis.
- Vérifiez régulièrement la valeur de résistance du bracelet antistatique, qui doit être comprise entre 1 et 10 mégohms (Mohms).

# Table of Contents

# CHAPTER 1: PRODUCT OVERVIEW

The NCS2-IQM203 ensures broad interoperability, optimized performance and improved flexibility for virtualized environments/services; it is an ideal choice for enterprise IT, cloud and communication networks.

## Package Content

Your package contains the following item:

- 1x Network Module

## Order Information

| SKU No. | Main Features |
|---|---|
| **NCS2-IQM203A** | NIC with Intel XL710-BM2, 2x 40G QSFP+, Ports, 2x MPO Output Multi-mode Fiber Bypass |
| **NCS2-IQM203B** | NIC with Intel XL710-BM2, 2x 40G QSFP+ Ports, 2x LC Output Single-mode Fiber Bypass |

**Note**: Maximum throughput achieved with Intel XL710-BM2 is 40Gbps even when connected via two 40Gbps connections

## Optional Accessories

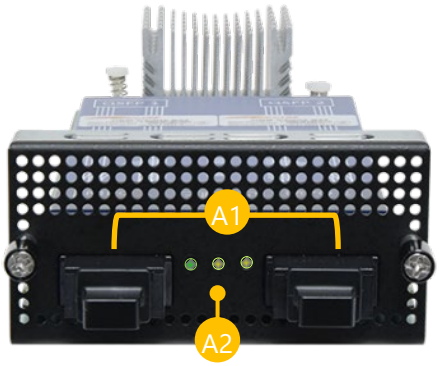
| Item PN | Description |
|---|---|
| **080W2T1210001** | Multi-mode Blue MPO12 Cable, 100cm (SKU A ONLY) |
| **080W000332000** | LC 2P Single-mode Yellow Cable, 300cm (SKU B ONLY) |
| **080W000731000** | LC 2P Single-mode Yellow Cable, 500cm (SKU B ONLY) |

## System Specifications

| | | |
|---|---|---|
| **System Compatibility** | | Lanner x86 Appliances |
| **Chipset** | | Intel® XL710-BM2 |
| **Interface** | | PCIe Gen3 x8 Golden Finger |
| **Connector** | | QSFP+ Ports with Fiber Bypass (Total Bandwidth 40G) |
| **Reach Distance** | | SKU A: 100m / 150m (OM3 / OM4)<br>SKU B: 10Km (SM) |
| **Environmental Parameters** | Temperature<br>Humidity (RH) | 0~40°C Operating;<br>-40~70°C Non-Operating<br>5~90% RH, Non-condensing |
| **Dimensions** | (WxDxH)<br>Weight | 77.2 x 125 x 39mm<br>TBD |
| **Approvals and Compliance** | | CE/FCC Class A, RoHS 2.0 |

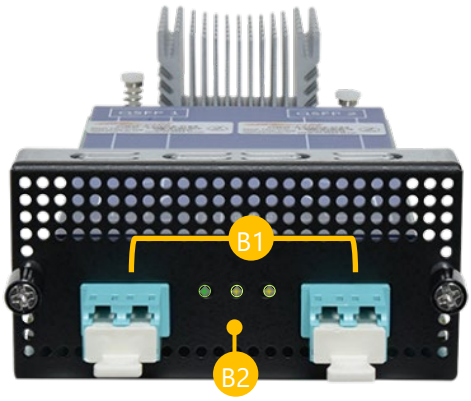
# Physical Overview

**NCS2-IQM203A**




| No. | Description | |
|---|---|---|
| A1 | LAN Port | 2x 40GbE MPO-12 Ports |
| A2 | LED | 3x LED Indicators (2x 40G Link/ACT on both sides, Bypass LED in the middle), refer to Appendix B |

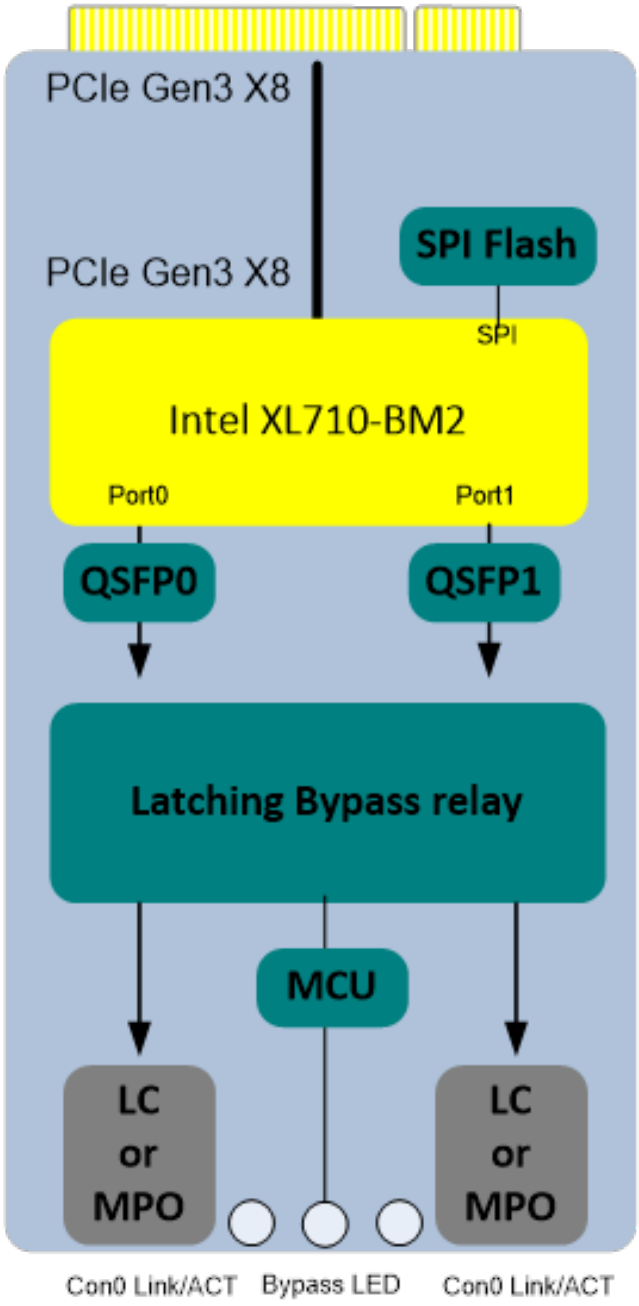
**NCS2-IQM203B**



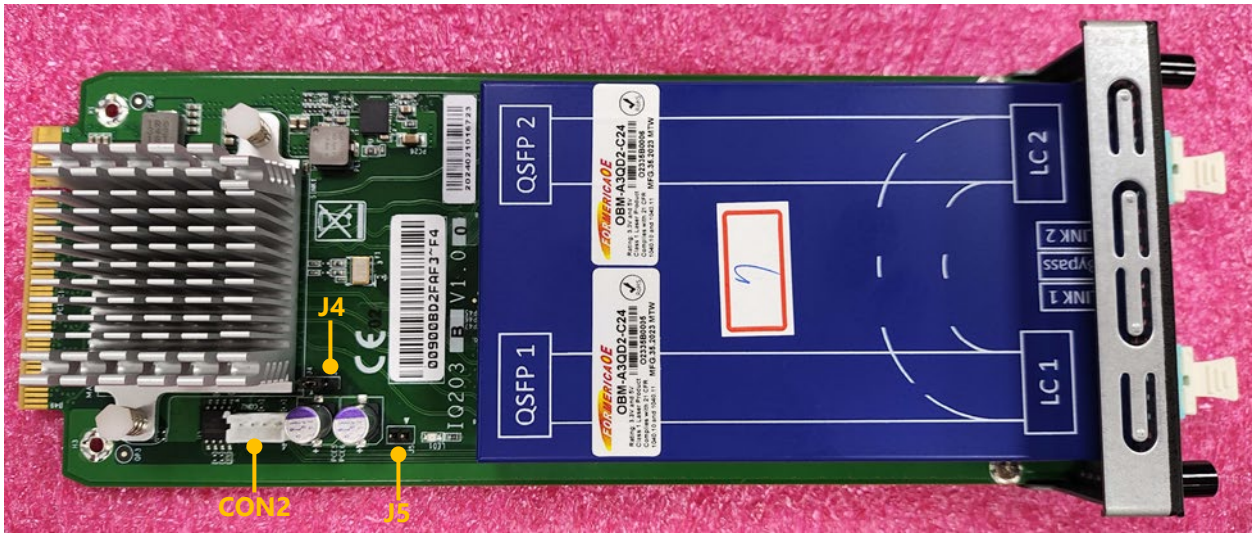

| No. | Description | |
|---|---|---|
| B1 | LAN Port | 2x 40GbE LC Ports |
| B2 | LED | 3x LED Indicators (2x 40G Link/ACT on both sides, Bypass LED in the middle), refer to Appendix B |

# CHAPTER 2: BOARD INFORMATION

## Block Diagram



# Pin Connectors




**J5: HW Debug Pin Header**

**1-2: MFG Mode**

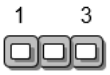
| Pin | Description |
|---|---|
| 1 | HW_BYP_DEBUG |
| 2 | GND |


**J4: HW Debug Pin Header**

**1-2: Normal Mode (Default)**

**2-3: ISP Mode**

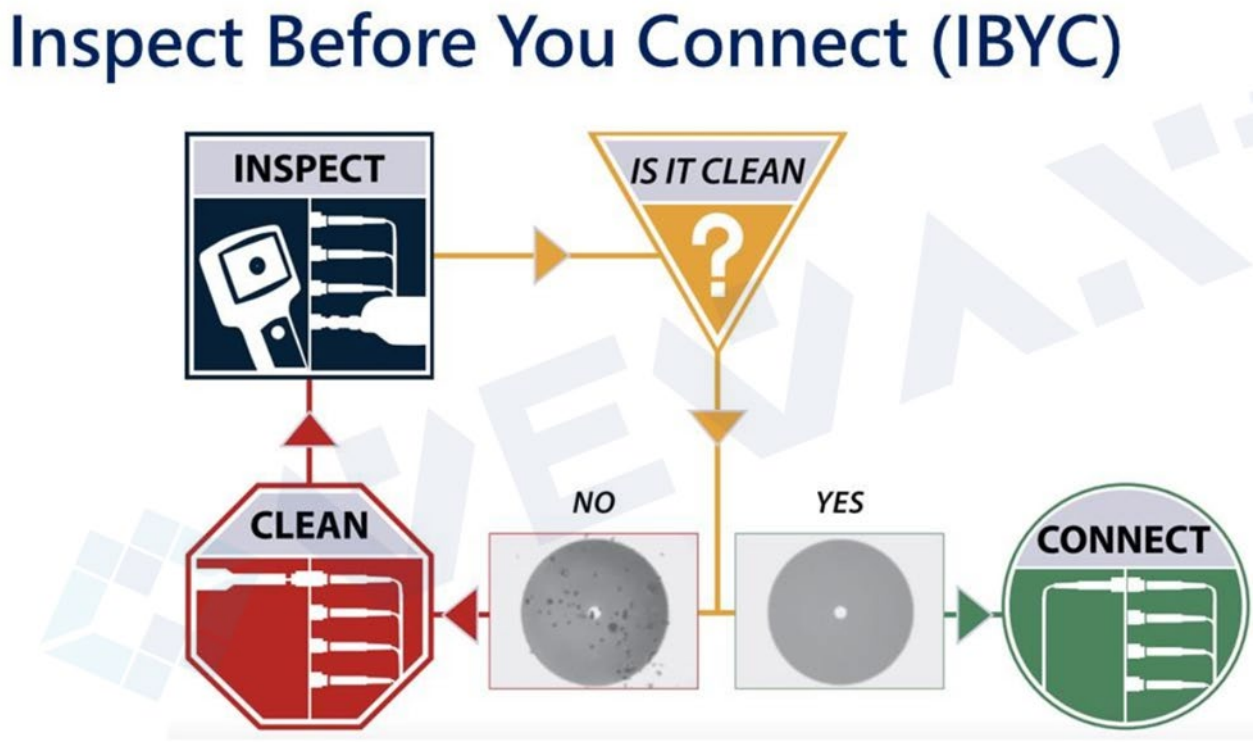
| Pin | Description |
|---|---|
| 1 | NC |
| 2 | MCU_PROG |
| 3 | GND |




**CON2: MCU FW Update Connector**

| Pin | Description |
|---|---|
| 1 | +P3V3_AUX_MCU |
| 2 | MCU_RXD |
| 3 | GND |
| 4 | MCU_TXD |

# APPENDIX A: INSPECTION PROCEDURES




# APPENDIX B: LED INDICATOR EXPLANATIONS

- **Fiber LAN LED – QSFP+**

  **Fiber LED:** RX or TX cable status (By Project)

  **(40Gb) QSFP+ Light pipe LED (top location)**

| Speed | LED Color | Active | Link |
|---|---|---|---|
| **40G** | **Green** | Blinking / Data access | ON |
| **Non-Link** | -- | OFF | OFF |
| 1. When cable is plug-in and network is linked. Both LED will be bright. The behavior is as defined.<br>2. Without the Cable plug-in, the LED should be off<br>3. If LAN Driver controls the LED, the behavior will follow the driver | | | |

- **LAN Bypass LED Definition**

  **Bypass Default Configuration:**

| Item | LED Color | Power ON | Run Time | Power OFF |
|---|---|---|---|---|
| **Bypass (Default)** | **Amber** | Disable | Disable | Enable |
| **Remove the Power Cord** | Return to Power OFF state | | | |
| **System Reboot** | Maintain current conditions & status | | | |

Normal state LED :

A: MPO B: LC

**Bypass state LED :**

A: MPO B: LC

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**Disconnect state LED :**

A: MPO B: LC

# APPENDIX C: 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 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.

| **RMA No:** | Reasons to Return: ▫ Repair(Please include failure details)<br>▫ Testing Purpose |
|---|---|
| Company: | Contact Person: |
| Phone No. | Purchased Date: |
| Fax No.: | Applied Date: |
| Return Shipping Address: _____<br>Shipping by: ▫ Air Freight ▫ Sea ▫ Express_____<br>▫ Others:_____ | |

| Item | Model Name | Serial Number | Configuration |
|---|---|---|---|
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| Item | Problem Code | Failure Status |
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*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 |
| | 09: Cache RMA Problem | 15: PS2 | 21: Shut Down |
| 03: CMOS Data Lost | 10: Memory Socket Bad | 16: LAN | 22: Panel Fail |
| 04: FDC Fail | 11: Hang Up Software | 17: COM Port | 23: CRT Fail |
| 05: HDC Fail | 12: Out Look Damage | 18: Watchdog Timer | 24: Others (Pls specify) |
| 06: Bad Slot | | | |

***Request Party***

**Authorized Signature / Date**

***Confirmed By Supplier***

**Authorized Signature / Date**