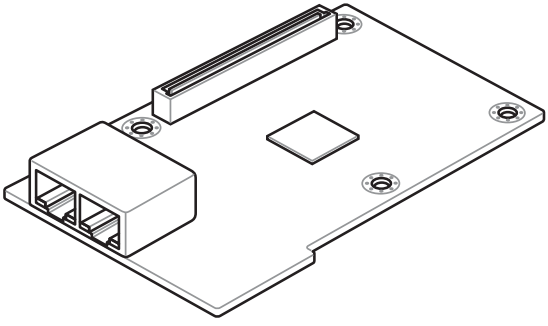
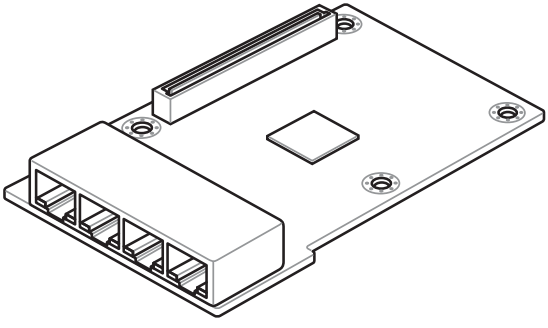
# MCI-1G/350-2T
# MCI-1G/350-4T

## 1 Gigabit/s Ethernet card

## User Guide





E13848
First Edition
March 2018

# Contents

# About this guide

This user guide contains the information you need when installing and configuring the server management board.

## How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product Introduction**

  This chapter describes the MCI-1G/350 series Ethernet card features and the new technologies it supports.

- **Chapter 2: Boot Agent Configuration**

  This chapter provides instructions on setting the Intel(R) Boot Agent XE.

- **Chapter 3: Driver Installation**

  This chapter provides instructions for installing the Ethernet card drivers on different operating systems.

## Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS websites**

   The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

## Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

**DANGER/WARNING:** Information to prevent injury to yourself when trying to complete a task.

**CAUTION:** Information to prevent damage to the components when trying to complete a task.

**IMPORTANT:** Instructions that you MUST follow to complete a task.

**NOTE:** Tips and additional information to help you complete a task.

## Typography

| | |
|---|---|
| **Bold text** | Indicates a menu or an item to select. |
| *Italics* | Used to emphasize a word or a phrase. |
| <Key> | Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key. |
| | Example: <Enter> means that you must press the Enter or Return key. |
| <Key1+Key2+Key3> | If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). |
| | Example: <Ctrl+Alt+Del> |
| `Command` | Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets. |
| | Example: At the DOS prompt, type the command line: `format a:` |

## MCI-1G/350 series specifications summary

| Model Name | MCI-1G/350-2T | MCI-1G/350-4T |
|---|---|---|
| Data Rate Per Port | 10/100/1000 Mbps | 10/100/1000 Mbps |
| Ports | 2 ports | 4 ports |
| Controller | Intel I350-AM2 | Intel I350-AM4 |
| Connector | RJ45 | |
| Host Interface | PCIe 2.0 x4 | |
| Form factor | Mezzanine Card (OCP) | |
| Supported Cable Type | Category-3 or higher for 10BASE-T<br>Category-5 or higher for 100BASE-TX<br>Category-5e or higher for 1000BASE-T | |
| Features | Intel® Virtualization Technology (Intel® VT) for Connectivity (Intel® VT-c)<br>SR-IOV (Up to 8 Virtual Functions per Port)<br>Pre-eXecution Environment (PXE)<br>iSCSI boot | |

* **Specifications are subject to change without notice.**

# Product Introduction

1

This chapter offers the MCI-1G/350 series Ethernet card features and the new technologies it supports.

## 1.1 Welcome!

Thank you for buying an ASUS® MCI-1G/350 series 1 Gigabit/s Ethernet card!

Before you start installing the Ethernet card, check the items in your package with the list below.

## 1.2 Package contents

Check your package for the following items.

| | Standard Gift Box Pack |
|---|---|
| **ASUS MCI-1G/350 series Ethernet card** | 1 |
| **LED Signal Cable** | 1 |
| **Packing Quantity** | 1 pc per carton |

If any of the above items are damaged or missing, contact your retailer.

## 1.3 System requirements

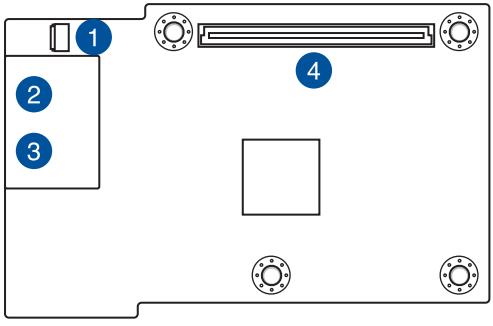
Before you install the MCI-1G/350 series Ethernet card, check if the system meets the following requirements:

- Server or workstation motherboard with an OCP slot.
- Supported operating systems are Windows® and Linux operating systems. Please refer to ASUS website for the latest updates.

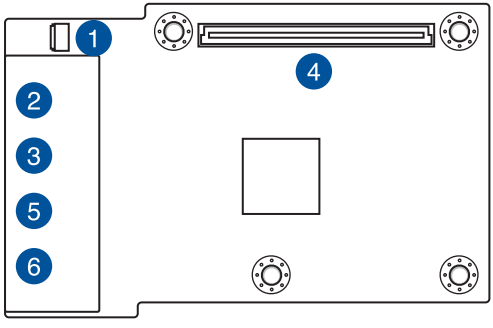
## 1.4 Card layout

### Front view

**MCI-1G/350-2T**



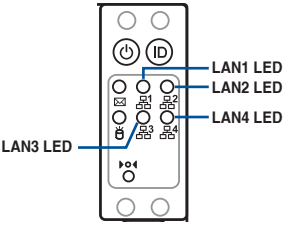

**MCI-1G/350-4T**

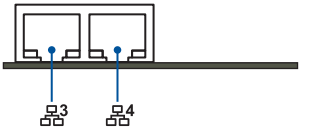



1. AUXLED_CON1 connector
2. LAN port 1
3. LAN port 2
4. Connector A (PCIe 2.0 x4 Link)
5. LAN port 3
6. LAN port 4

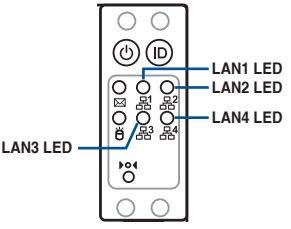
## 1.5 LED indications

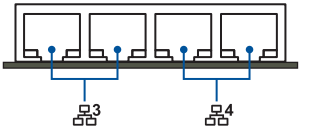
### Front panel LEDs




MCI-1G/350-2T




MCI-1G/350-4T

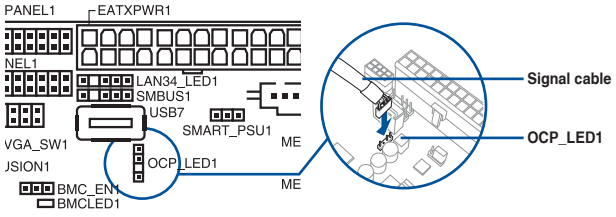
| Model Name | LAN Card - Port | Front I/O - LED indicator |
|---|---|---|
| MCI-1G/350-2T | Port 1 | LAN3 LED |
| | Port 2 | LAN4 LED |
| MCI-1G/350-4T | Port 1 | LAN3 LED |
| | Port 2 | |
| | Port 3 | LAN4 LED |
| | Port 4 | |

| Activity / Link LED | | Speed link LED | |
|---|---|---|---|
| Status | Description | Status | Description |
| OFF | No activity | OFF | 10 Mb/s link |
| Green | Link | Yellow | 100 Mb/s link |
| Blinking Green | Data activity | Green | 1 Gb/s link |

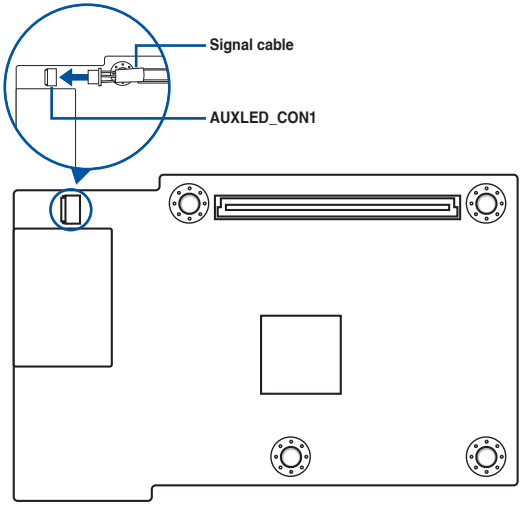
## 1.6 Installing the MCI-1G/350 series Ethernet card

To install a MCI-1G/350 series Ethernet card:

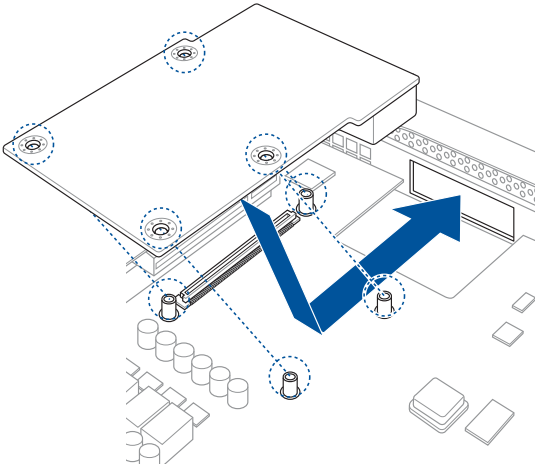
1. Prepare the Mezzanine card.
2. Connect the black end of the signal cable to the OCP_LED1 header on the motherboard.



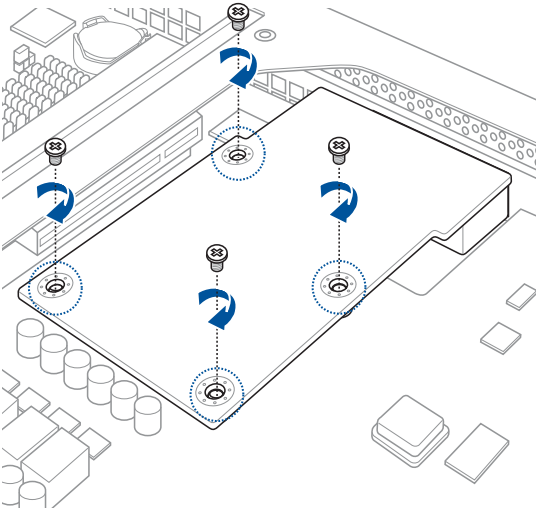

3. Connect the white end of the signal cable to the AUXLED_CON1 connector on the card.



4. Align and insert the screw holes of the MCI-1G/350 series Ethernet card into the stand screws, then insert the ports of the MCI-1G/350 series Ethernet card into the port slots on the server chassis as shown.



5. Secure the MCI-1G/350 series Ethernet card with the four (4) bundled screws.



# Boot Agent Configuration

2

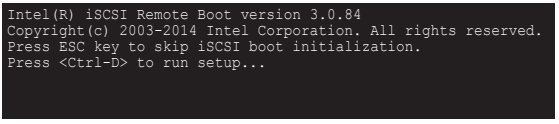
This chapter provides instructions on setting the Intel(R) Boot Agent XE.

## 2.1 Intel(R) iSCSI Remote Boot

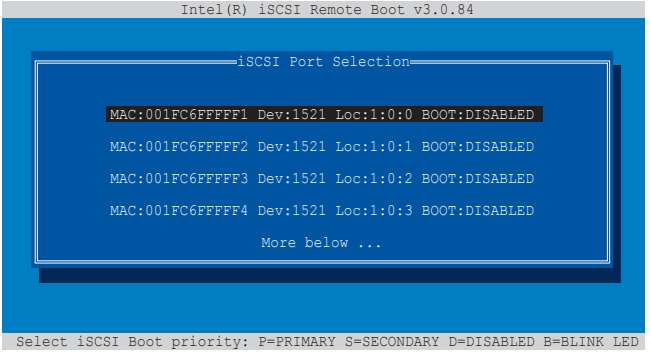
The Intel(R) iSCSI Remote Boot provides hardware-based Ethernet card configurations.

To start the Intel(R) iSCSI Remote Boot and access the main screen:

1. Turn on the system.
2. During POST, press <Ctrl+D> when the following screen appears.

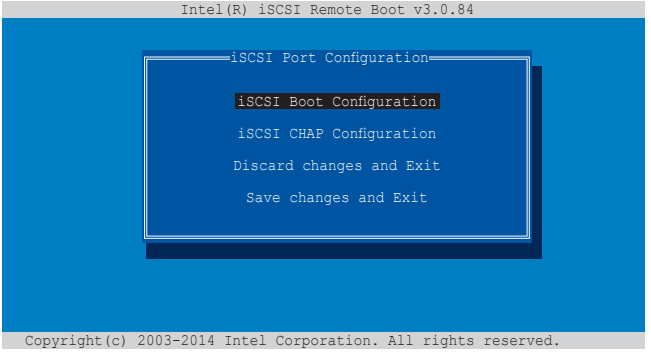



3. From the **iSCSI Port Selection** screen, use the Up/Down arrow key to select an Ethernet device to configure and press <Enter>.

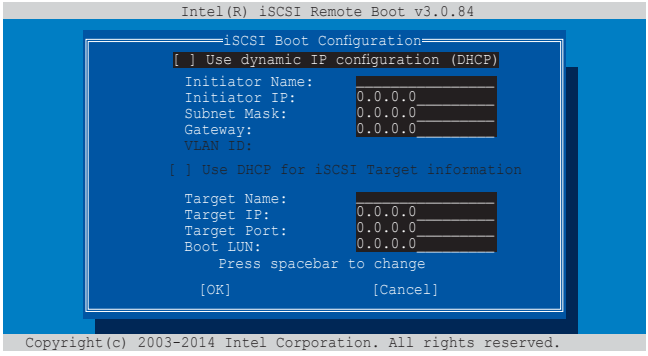



- Press <P> to set the selected item as the primary boot priority, press <S> to set the selected item as the secondary boot priority, or press <D> to disable the selected item.
- Press <B> to blink the LED of the selected item.

4. From the **iSCSI Port Configuration** screen, use the Up/Down arrow key to select an item and press <Enter>.



## 2.1.1 iSCSI Boot Configuration




Use the Up/Down arrow key to select an item and press <spacebar> to change between Enabled [*] or Disabled [ ].

### [*] Use dynamic IP configuration (DHCP)

When Enabled [*], the iSCSI boot host software acquires the IP address from the DHCP server.

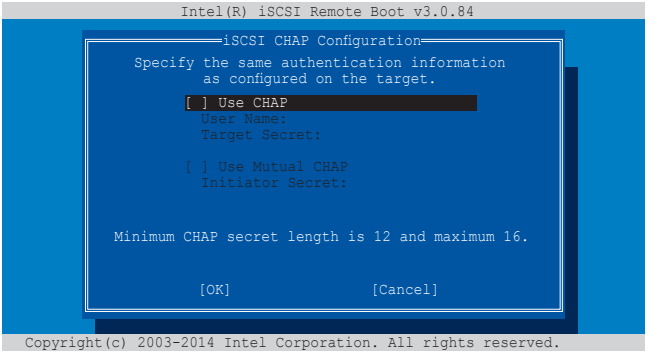
When Disabled [ ], the iSCSI boot host software acquires the static IP address. Key in the necessary parameters.

### [*] Use DHCP for iSCSI Target information

When Enabled [*], the iSCSI boot host software acquires its iSCSI target parameters from the DHCP server.

When Disabled [ ], the iSCSI boot host software acquires its iSCSI target parameters via the static IP address. Key in the necessary parameters.

## 2.1.2 iSCSI CHAP Configuration




Use the Up/Down arrow key to select an item and press <spacebar> to change between Enabled [*] or Disabled [ ].

### [ ] Use CHAP

When Enabled [*], the iSCSI boot host software uses CHAP authentication when connecting to the iSCSI target. Key in the necessary parameters.

When Disabled [ ], the iSCSI boot host software does not attempt to boot from the iSCSI target after successfully connecting to it. The control will then return to the system BIOS so that the next boot device may be used.

### [ ] Use Mutual CHAP

When Enabled [*], the iSCSI boot host software uses a Mutual CHAP authentication when connecting to the iSCSI target. Key in the necessary parameters.

When Disabled [ ], the iSCSI boot host software does not use a Mutual CHAP authentication when connecting to the iSCSI target.

## 2.2 Intel(R) Ethernet Flash Firmware Utility

The Intel(R) Ethernet Flash Firmware Utility allows you to switch between PXE option ROM and iSCSI option ROM. Note that only one option ROM can be used at a time.

To install the PXE option ROM:

1. Locate the **BootIMG.FLB** and **Bootutil.exe** files in the PXE folder on your SDVD.
2. Copy the **BootIMG.FLB** and **Bootutil.exe** files to a bootable USB storage device.
3. Enter DOS environment.

The utility must run under pure DOS environment. It cannot run in a DOS box on Windows system. You should boot from a DOS floppy without any device drivers.

4. Within the DOS environment, enter the directory with the **BootIMG.FLB** and **Bootutil.exe** files.
5. Install the PXE option ROM:

```
bootutil -nic=1 -up=pxe+efi -quiet
```

All ports share the same flash.

6. Restart the system.

```
C:\I350>bootutil -nic=1 -up=PXE+EFI -quiet

Intel(R) Ethernet Flash Firmware Utility
BootUtil version 1.5.94.2
Copyright(C) 2003-2015 Intel Corporation

Programming flash on port 1 with flash firmware image
/
Flash update successful

Port Network Address Location Series  WOL Flash Firmware                Version
==== ============== ======== ======= === ============================ =======
  1  001FC6FFFFF1      1:00.0 Gigabit YES UEFI,PXE Enabled              1.5.78
  2  001FC6FFFFF2      1:00.1 Gigabit YES UEFI,PXE Enabled              1.5.78
  3  001FC6FFFFF3      1:00.2 Gigabit YES UEFI,PXE Enabled              1.5.78
  4  001FC6FFFFF4      1:00.3 Gigabit YES UEFI,PXE Enabled              1.5.78
  5  000C6E000072      7:00.0 Gigabit YES FLASH UNnknown

C:\I350>
```

To install the iSCSI option ROM:

1. Locate the **BootIMG.FLB** and **Bootutil.exe** files in the iSCSI folder on your SDVD.
2. Copy the **BootIMG.FLB** and **Bootutil.exe** files to a bootable USB storage device.
3. Enter DOS environment.

The utility must run under pure DOS environment. It cannot run in a DOS box on Windows system. You should boot from a DOS floppy without any device drivers.

4. Within the DOS environment, enter the directory with the **BootIMG.FLB** and **Bootutil.exe** files.
5. Install the iSCSI option ROM:

```
bootutil -nic=1 -up=iscsi -quiet
```

All ports share the same flash.

6. Restart the system.

```
C:\I350>bootutil -nic=1 -up=iscsi -quiet

Intel(R) Ethernet Flash Firmware Utility
BootUtil version 1.5.94.2
Copyright(C) 2003-2015 Intel Corporation

Programming flash on port 1 with flash firmware image
/
Flash update successful

Port Network Address Location Series  WOL Flash Firmware                Version
==== ============== ======== ======= === ============================ =======
  1  001FC6FFFFF1      1:00.0 Gigabit YES iSCSI                        3.0.84
  2  001FC6FFFFF2      1:00.1 Gigabit YES iSCSI                        3.0.84
  3  001FC6FFFFF3      1:00.2 Gigabit YES iSCSI                        3.0.84
  4  001FC6FFFFF4      1:00.3 Gigabit YES iSCSI                        3.0.84
  5  000C6E000072      7:00.0 Gigabit YES FLASH UNnknown

C:\I350>
```

# Driver Installation

3

This chapter provides instructions for installing the Ethernet card drivers on different operating systems.

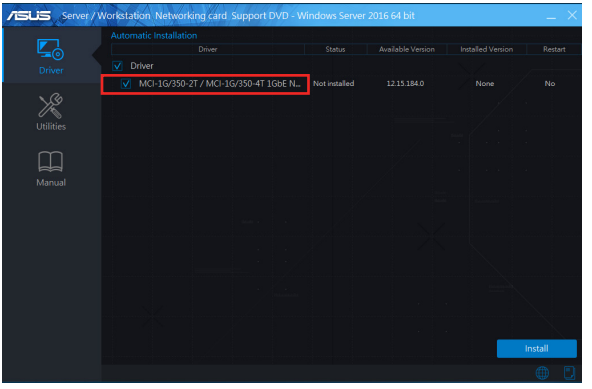
## 3.1 Windows® Server OS Driver Installation

To update the Ethernet card driver for Windows® Server OS:

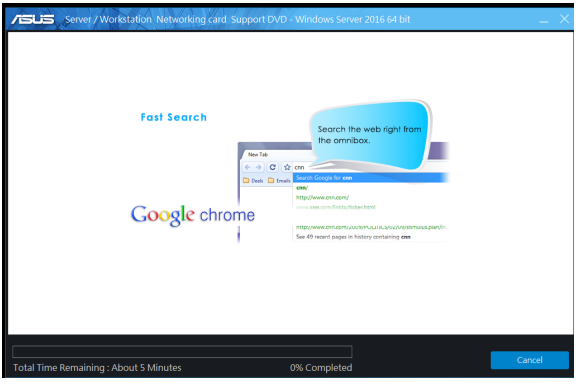
1. Restart the computer, and then log on with **Administrator** privileges.
2. Insert the Support CD to the optical drive. The Support CD automatically displays the **Drivers** menu if Autorun is enabled in your computer.

- If Windows® automatically detects the LAN controllers and displays a New Hardware Found window, click **Cancel** to close this window.
- If Autorun is NOT enabled in your computer, browse the contents of the Support CD to locate the file **Setup.exe**. Double-click **Setup.exe** to run the CD.

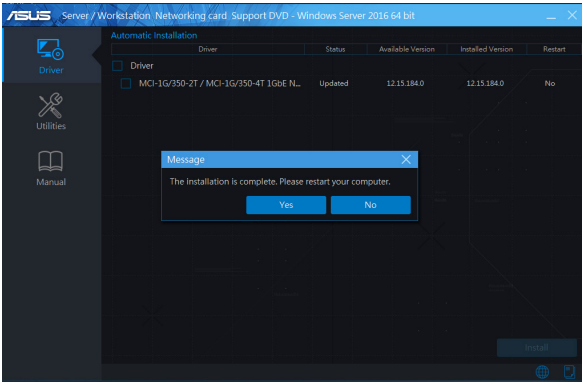
3. Click **MCI-1G/350-2T / MCI-1G/350-4T 1GbE Network Adapter Driver**, then select **Install**.




4. The installation window appears.



5. Follow the onscreen instructions to complete the installation.



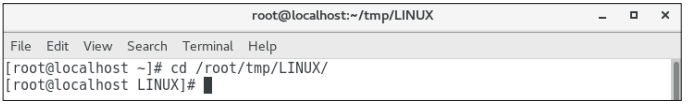
## 3.2 Linux OS Driver Installation

To install the Ethernet card driver for Linux OS:

1. Within the Linux Terminal, place the driver in **root/tmp**:

**For Red Hat Enterprise Linux 6.9:**


**For Red Hat Enterprise Linux 7.4:**

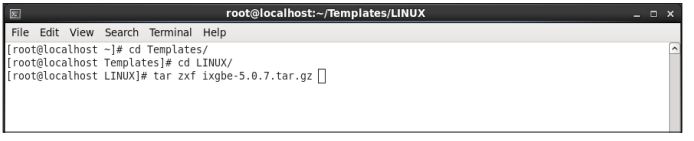



**For SUSE Linux Enterprise Server 11.3:**

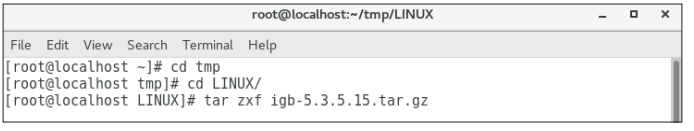

2. Unzip the driver:

```
tar zxf <Version>.tar.gz
```

**For Red Hat Enterprise Linux 6.9:**




**For Red Hat Enterprise Linux 7.4:**



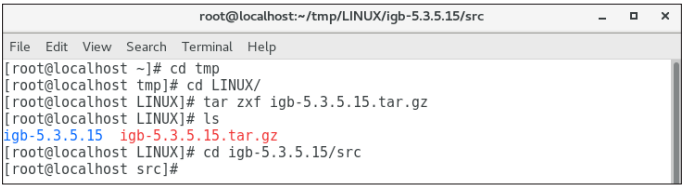

**For SUSE Linux Enterprise Server 11.3:**

3. Enter the folder:

```
cd <Version>/src
```

**For Red Hat Enterprise Linux 6.9:**


**For Red Hat Enterprise Linux 7.4:**



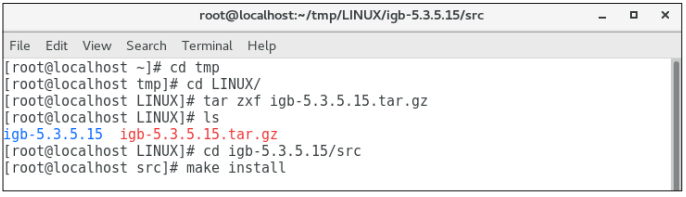

**For SUSE Linux Enterprise Server 11.3:**

4. Install the driver:

```
make install
```

**For Red Hat Enterprise Linux 6.9:**

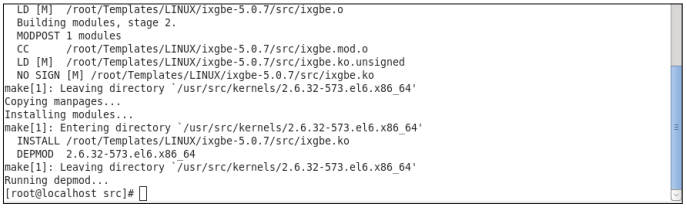

**For Red Hat Enterprise Linux 7.4:**



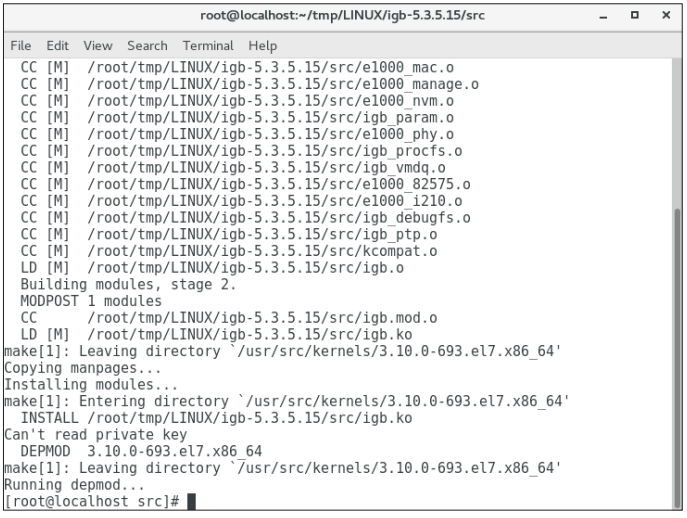

**For SUSE Linux Enterprise Server 11.3:**

5. Install complete:

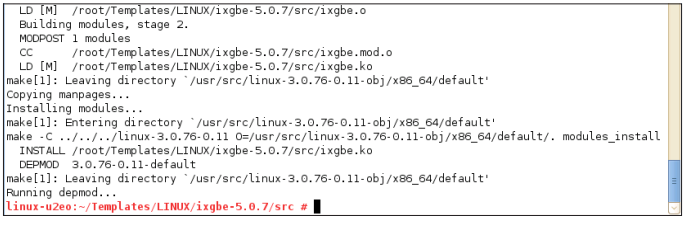
**For Red Hat Enterprise Linux 6.9:**




**For Red Hat Enterprise Linux 7.4:**



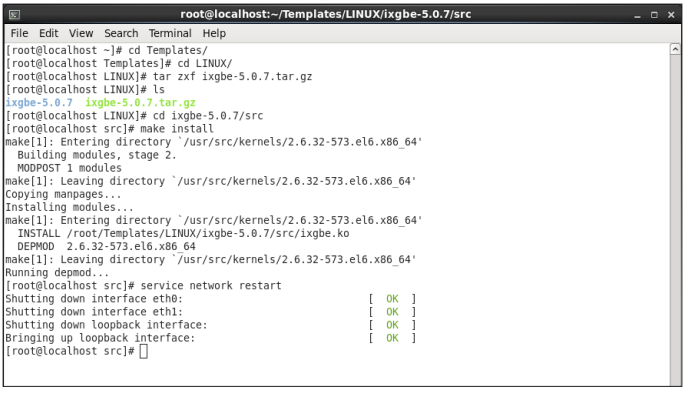

**For SUSE Linux Enterprise Server 11.3:**



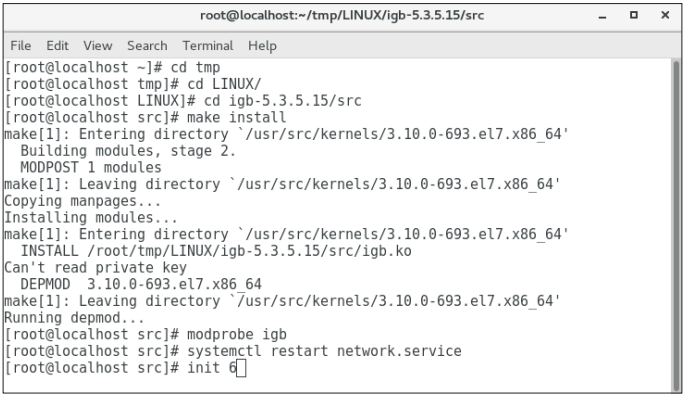
6. Check if the LAN card is detected:

```
service network restart
```

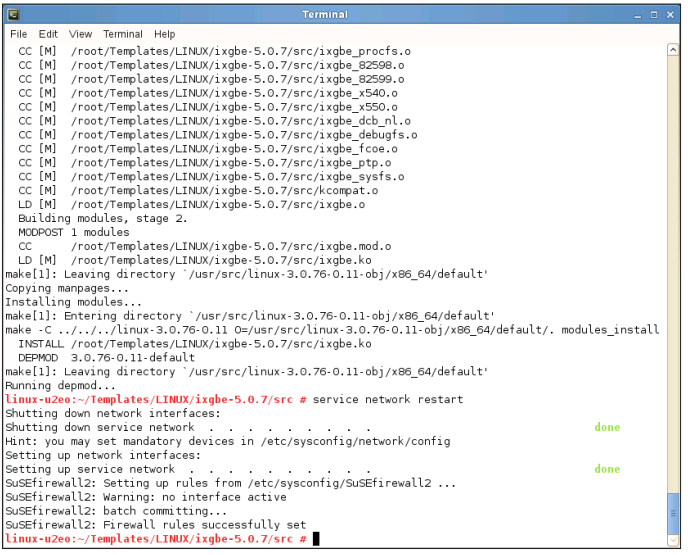
**For Red Hat Enterprise Linux 6.9:**




**For Red Hat Enterprise Linux 7.4:**



**For SUSE Linux Enterprise Server 11.3:**



# Appendix A

# Simplified EU Declaration of Conformity

**English** ASUSTeK Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Directives. Full text of EU declaration of conformity is available at: www.asus.com/support

**Français** AsusTek Computer Inc. déclare par la présente que cet appareil est conforme aux critères essentiels et autres clauses pertinentes des directives concernées. La déclaration de conformité de l'UE peut être téléchargée à partir du site Internet suivant : www.asus.com/support

**Deutsch** ASUSTeK Computer Inc. erklärt hiermit, dass dieses Gerät mit den wesentlichen Anforderungen und anderen relevanten Bestimmungen der zugehörigen Richtlinien übereinstimmt. Der gesamte Text der EU-Konformitätserklärung ist verfügbar unter: www.asus.com/support

**Italiano** ASUSTeK Computer Inc. con la presente dichiara che questo dispositivo è conforme ai requisiti essenziali e alle altre disposizioni pertinenti con le direttive correlate. Il testo completo della dichiarazione di conformità UE è disponibile all'indirizzo: www.asus.com/support

**Русский** Компания ASUS заявляет, что это устройство соответствует основным требованиям и другим соответствующим условиям соответствующих директив. Подробную информацию, пожалуйста, смотрите на www.asus.com/support

**Български** С настоящото ASUSTeK Computer Inc. декларира, че това устройство е в съответствие със съществените изисквания и другите приложими постановления на свързаните директиви. Пълният текст на декларацията за съответствие на ЕС е достъпна на адрес: www.asus.com/support

**Hrvatski** ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj sukladan s bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o sukladnosti dostupan je na: www.asus.com/support

**Čeština** Společnost ASUSTeK Computer Inc. tímto prohlašuje, že toto zařízení splňuje základní požadavky a další příslušná ustanovení souvisejících směrnic. Plné znění prohlášení o shodě EU je k dispozici na adrese: www.asus.com/support

**Dansk** ASUSTeK Computer Inc. erklærer hermed, at denne enhed er i overensstemmelse med hovedkravene og andre relevante bestemmelser i de relaterede direktiver. Hele EU-overensstemmelseserklæringen kan findes på: www.asus.com/support

**Nederlands** ASUSTeK Computer Inc. verklaart hierbij dat dit apparaat voldoet aan de essentiële vereisten en andere relevante bepalingen van de verwante richtlijnen. De volledige tekst van de EU-verklaring van conformiteit is beschikbaar op: www.asus.com/support

**Eesti** Käesolevaga kinnitab ASUSTeK Computer Inc, et see seade vastab asjakohaste direktiivide oluliste nõuetele ja teistele asjassepuutuvatele sätetele. EL vastavusdeklaratsiooni täielik tekst on saadaval järgmisel aadressil: www.asus.com/support

**Suomi** ASUSTeK Computer Inc. ilmoittaa täten, että tämä laite on asiaankuuluvien direktiivien olennaisten vaatimusten ja muiden tätä koskevien säädösten mukainen. EU-yhdenmukaisuusilmoituksen koko teksti on luettavissa osoitteessa: www.asus.com/support

**Ελληνικά** Με το παρόν, η AsusTek Computer Inc. δηλώνει ότι αυτή η συσκευή συμμορφώνεται με τις θεμελιώδεις απαιτήσεις και άλλες σχετικές διατάξεις των Οδηγιών της ΕΕ. Το πλήρες κείμενο της δήλωσης συμβατότητας είναι διαθέσιμο στη διεύθυνση: www.asus.com/support

**Magyar** Az ASUSTeK Computer Inc. ezennel kijelenti, hogy ez az eszköz megfelel a kapcsolódó Irányelvek lényeges követelményeinek és egyéb vonatkozó rendelkezéseinek. Az EU megfelelőségi nyilatkozat teljes szövege innen letölthető: www.asus.com/support

**Latviski** ASUSTeK Computer Inc. ar šo paziņo, ka šī ierīce atbilst saistīto Direktīvu būtiskajām prasībām un citiem citiem saistošajiem nosacījumiem. Pilns ES atbilstības paziņojuma teksts pieejams šeit: www.asus.com/support

**Lietuvių** „ASUSTeK Computer Inc." šiuo tvirtina, kad šis įrenginys atitinka pagrindinius reikalavimus ir kitas svarbias susijusių direktyvų nuostatas. Visą ES atitikties deklaracijos tekstą galima rasti: www.asus.com/support

**Norsk** ASUSTeK Computer Inc. erklærer herved at denne enheten er i samsvar med hovedsaklige krav og andre relevante forskrifter i relaterte direktiver. Fullstendig tekst for EU-samsvarserklæringen finnes på: www.asus.com/support

**Polski** Firma ASUSTeK Computer Inc. niniejszym oświadcza, że urządzenie to jest zgodne z zasadniczymi wymogami i innymi właściwymi postanowieniami powiązanych dyrektyw. Pełny tekst deklaracji zgodności UE jest dostępny pod adresem: www.asus.com/support

**Português** A ASUSTeK Computer Inc. declara que este dispositivo está em conformidade com os requisitos essenciais e outras disposições relevantes das Diretivas relacionadas. Texto integral da declaração da UE disponível em: www.asus.com/support

**Română** ASUSTeK Computer Inc. declară că acest dispozitiv se conformează cerinţelor esenţiale şi altor prevederi relevante ale directivelor conexe. Textul complet al declaraţiei de conformitate a Uniunii Europene se găseşte la: www.asus.com/support

**Srpski** ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj u saglasnosti sa osnovnim zahtevima i drugim relevantnim odredbama povezanih Direktiva. Pun tekst EU deklaracije o usaglašenosti je dostupan da adresi: www.asus.com/support

**Slovensky** Spoločnosť ASUSTeK Computer Inc. týmto vyhlasuje, že toto zariadenie vyhovuje základným požiadavkám a ostatým príslušným ustanoveniam príslušných smerníc. Celý text vyhlásenia o zhode pre štáty EÚ je dostupný na adrese: www.asus.com/support

**Slovenščina** ASUSTeK Computer Inc. izjavlja, da je ta naprava skladna z bistvenimi zahtevami in drugimi ustreznimi določbami povezanih direktiv. Celotno besedilo EU-izjave o skladnosti je na voljo na spletnem mestu: www.asus.com/support

**Español** Por la presente, ASUSTeK Computer Inc. declara que este dispositivo cumple los requisitos básicos y otras disposiciones pertinentes de las directivas relacionadas. El texto completo de la declaración de la UE de conformidad está disponible en: www.asus.com/support

**Svenska** ASUSTeK Computer Inc. förklarar härmed att denna enhet överensstämmer med de grundläggande kraven och andra relevanta föreskrifter i relaterade direktiv. Fulltext av EU-försäkran om överensstämmelse finns på: www.asus.com/support

**Українська** ASUSTeK Computer Inc. заявляє, що цей пристрій відповідає основним вимогам та іншим відповідним положенням відповідних Директив. Повний текст декларації відповідності стандартам ЄС доступний на: www.asus.com/support

**Türkçe** AsusTek Computer Inc., bu aygıtın temel gereksinimlerle ve ilişkili Yönergelerin diğer ilgili koşullarıyla uyumlu olduğunu beyan eder. AB uygunluk bildiriminin tam metni şu adreste bulunabilir: www.asus.com/support

**Bosanski** ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj usklađen sa bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o usklađenosti dostupan je na: www.asus.com/support

# ASUS contact information

## ASUSTeK COMPUTER INC. (Taiwan)

| | |
|---|---|
| Address | 4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan |
| Telephone | +886-2-2894-3447 |
| Fax | +886-2-2890-7798 |
| Web site | https://www.asus.com/tw/ |

### *Technical Support*

| | |
|---|---|
| Telephone | +886-2-2894-3447 (0800-093-456) |
| Online Support | https://www.asus.com/support/Product/ContactUs/Services/questionform/?lang=zh-tw |

## ASUSTeK COMPUTER INC. (China)

| | |
|---|---|
| Address | No. 5077, Jindu Road, Minhang District, Shanghai, China |
| Telephone | +86-21-5442-1616 |
| Fax | +86-21-5442-0099 |
| Web site | https://www.asus.com.cn |

### *Technical Support*

| | |
|---|---|
| Telephone | +86-20-2804-7506 (400-620-6655) |
| Online Support | https://www.asus.com/support/Product/ContactUs/Services/questionform/?lang=zh-cn |

## ASUS COMPUTER INTERNATIONAL (America)

| | |
|---|---|
| Address | 800 Corporate Way, Fremont, CA 94539, USA |
| Fax | +1-510-608-4555 |
| Web site | https://www.asus.com/us/ |

### *Technical Support*

| | |
|---|---|
| Support fax | +1-812-284-0883 |
| General support | +1-812-282-2787 |
| Online support | https://www.asus.com/support/Product/ContactUs/Services/questionform/?lang=en-us |

## ASUS COMPUTER GmbH (Germany and Austria)

| | |
|---|---|
| Address | Harkort Str. 21-23, 40880 Ratingen, Germany |
| Fax | +49-2102-959911 |
| Web site | https://www.asus.com/de/ |

### *Technical Support*

| | |
|---|---|
| Telephone | +49-1805-010923 |
| Support Fax | +49-2102-959911 |
| Online support | https://www.asus.com/support/Product/ContactUs/Services/questionform/?lang=de-de |

* EUR 0.14/minute from a German fixed landline; EUR 0.42/minute from a mobile phone.