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› Nockchawon Bluetooth 4.0 Wireless WiFi Airport Card BCM94331CD for iMac A1418 A1419 (2012 Models) Instruction Manual

Nockchawon BCM94331CD

Nockchawon BCM94331CD Wireless Airport Card Instruction Manual

For iMac 21.5" (A1418) & 27" (A1419) 2012 Models

1. INTRODUCTION

This manual provides detailed instructions for the installation, setup, and maintenance of the Nockchawon BCM94331CD Bluetooth 4.0 and 802.11n Wireless Airport Card. This product is designed as a direct replacement for the original wireless card in specific 2012 iMac models. Please read all instructions carefully before proceeding with installation.

2. PRODUCT OVERVIEW

The Nockchawon BCM94331CD Wireless Airport Card is an internal component that provides both Bluetooth 4.0 and 802.11n Wi-Fi connectivity. It is intended to restore or upgrade wireless capabilities in compatible iMac models where the original card may be malfunctioning or damaged. This card ensures reliable wireless connections for internet access and peripheral device pairing.



Figure 2.1: Front view of the Nockchawon BCM94331CD Bluetooth and Wi-Fi Airport Card. This image displays the front side of the Nockchawon BCM94331CD wireless card, showing the gold-plated connector pins and the main chip components. The card features labels for its model number and regulatory information.

Product Size



Figure 2.2: Nockchawon BCM94331CD wireless card with dimensions indicated. The image illustrates the physical dimensions of the Nockchawon BCM94331CD wireless card, measuring approximately 1.81 inches in length and 0.98 inches in width. These measurements are critical for ensuring compatibility with the iMac's internal slot.

3. COMPATIBILITY

This Nockchawon BCM94331CD Wireless Airport Card is specifically compatible with the following Apple iMac models from the **2012 year**:

- **iMac 21.5" A1418 (EMC 2544):**
 - Late 2012 iMac 13.1 21.5" EMC 2544 MD093LL/A 2.7 GHz "Core i5" (i5-3330S)
 - Late 2012 iMac 13.1 21.5" EMC 2544 MD094LL/A 2.9 GHz "Core i5" (i5-3470S)
 - Late 2012 iMac 13.1 21.5" EMC 2544 BTO/CTO 3.1 GHz "Core i7" (i7-3770S)
 - Early 2013 iMac 13.1 21.5" EMC 2544 ME699LL/A 3.3 GHz "Core i3" (i3-3225)
- **iMac 27" A1419 (EMC 2546):**
 - Late 2012 iMac 13.2 27" EMC 2546 MD095LL/A 2.9GHz "Core i5" (i5-3470S)
 - Late 2012 iMac 13.2 27" EMC 2546 MD096LL/A 3.2GHz "Core i5" (i5-3470)

- Late 2012 iMac 13.2 27" EMC 2546 BTO/CTO 3.4 GHz Core i7 (i7-3770)

Important: To verify compatibility, locate both the Model "Axxxx" and EMC "xxxx" numbers beneath the lower cover of your iMac's stand. This card is NOT compatible with iMac models from other years.



Figure 3.1: Location of EMC Number on iMac Stand. A close-up photograph indicating the precise location of the EMC number on the lower cover of an iMac's stand. This number is crucial for verifying the specific model and ensuring compatibility with replacement parts.

4. INSTALLATION INSTRUCTIONS

Warning: Internal component replacement requires technical proficiency. Proceed with caution. Improper installation can damage your device. If you are not comfortable performing this procedure, seek professional assistance.

4.1 Safety Precautions

- **Power Off:** Completely shut down your iMac and disconnect all power cables and peripherals.
- **Static Discharge:** Wear an anti-static wrist strap or frequently touch a grounded metal object to prevent electrostatic discharge (ESD), which can damage sensitive electronic components.
- **Work Area:** Work on a clean, well-lit, and organized surface.
- **Tools:** Ensure you have the necessary tools, which typically include Torx screwdrivers, suction cups (for screen removal), and a spudger.

4.2 Replacement Procedure

The following steps outline the general process for replacing the wireless card. Specific details may vary slightly depending on your exact iMac model. Refer to a detailed service guide for your specific iMac model for precise instructions on opening the enclosure.

1. **Prepare the iMac:** Lay the iMac face down on a soft, clean surface to protect the screen.
2. **Remove the Display Assembly:** Carefully remove the display assembly. This typically involves using suction cups to separate the screen from the chassis and disconnecting several cables.
3. **Locate the Existing Wireless Card:** Once the display is removed, identify the location of the existing wireless (Airport) card on the logic board. It is usually a small module connected via a slot and antenna cables.
4. **Disconnect Antenna Cables:** Gently disconnect the small coaxial antenna cables from the existing wireless card. Note their positions for reattachment.
5. **Remove the Old Card:** Unscrew any retaining screws holding the old wireless card in place and carefully slide it out of its slot.
6. **Install the New Card:** Align the Nockchawon BCM94331CD card with the slot and gently push it in until it is fully seated. Secure it with the retaining screws.
7. **Reconnect Antenna Cables:** Carefully reattach the antenna cables to the corresponding connectors on the new card. Ensure they are securely snapped into place.

8. **Reassemble the iMac:** Reconnect all display cables and carefully reattach the display assembly to the chassis.
9. **Power On and Test:** Reconnect the power cable and turn on your iMac to test the new wireless card's functionality.



Figure 4.1: Illustration of iMac Internal Component Replacement. An image depicting a person performing maintenance on an open iMac, with the internal components exposed. This illustrates the type of environment and process involved in replacing internal parts like the wireless card.

5. SETUP

After successful physical installation, your iMac's operating system (macOS) should automatically detect the new wireless card. No additional drivers are typically required for standard functionality.

- **Wi-Fi Setup:** Navigate to System Settings (or System Preferences) > Network > Wi-Fi. Turn Wi-Fi on and select your desired network from the list. Enter the password if prompted.
- **Bluetooth Setup:** Navigate to System Settings (or System Preferences) > Bluetooth. Ensure Bluetooth is turned on. Your iMac will scan for discoverable Bluetooth devices. Select your device from the list and follow on-screen pairing instructions.

6. OPERATING

Once configured, the Nockchawon BCM94331CD card operates seamlessly within macOS, providing standard Wi-Fi and Bluetooth functionalities.

- **Wi-Fi:** Connect to 802.11n compatible networks for internet access and local network communication.
- **Bluetooth:** Pair with Bluetooth-enabled devices such as keyboards, mice, headphones, and speakers for wireless connectivity.

7. MAINTENANCE

As an internal component, the wireless card requires minimal maintenance. However, general computer care practices are recommended:

- **Dust Control:** Periodically clean the interior of your iMac to prevent dust buildup, which can affect component performance and cooling. Use compressed air or a soft brush.
- **Software Updates:** Keep your macOS operating system updated to ensure optimal performance and compatibility with wireless drivers.
- **Physical Handling:** Avoid dropping or subjecting your iMac to physical shocks, which could dislodge or damage internal components.

8. TROUBLESHOOTING

If you encounter issues after installing the Nockchawon BCM94331CD wireless card, consider the following troubleshooting steps:

- **No Wi-Fi or Bluetooth:**
 - Verify that the card is correctly seated in its slot.
 - Ensure all antenna cables are securely connected to the card.
 - Check System Settings to confirm Wi-Fi and Bluetooth are enabled.
 - Restart your iMac.
- **Intermittent Connection:**
 - Check for interference from other electronic devices.
 - Ensure your Wi-Fi router is functioning correctly and is within range.
 - Verify antenna cable connections.
- **Slow Speeds:**
 - Confirm your router supports 802.11n and is configured for optimal performance.
 - Check for network congestion or other devices using bandwidth.
- **Bluetooth Pairing Issues:**
 - Ensure the Bluetooth device is in pairing mode.
 - Remove previous pairings of the device from your iMac and attempt to pair again.
 - Restart both the iMac and the Bluetooth device.

If problems persist, consider consulting Apple's official support resources or a qualified technician.

9. SPECIFICATIONS

Feature	Detail
Brand	Nockchawon
Model Number	BCM94331CD
Identifying Numbers	APN: BCM94331CD, PPN: 607-8967

Bluetooth Version	4.0
Wi-Fi Protocol	802.11n
Hardware Interface	802.11 ac/b/g/n (Note: Product specifies 802.11n, but hardware interface may support broader standards)
Data Link Protocol	IEEE 802.11n
Product Dimensions	1.81 x 0.94 x 0.08 inches (4.6 x 2.4 x 0.2 cm)
Item Weight	0.317 ounces (9 grams)
Compatible Devices	iMac 21.5" A1418 (2012), iMac 27" A1419 (2012)
Color	Black

10. WARRANTY AND SUPPORT

This Nockchawon BCM94331CD Wireless Airport Card is tested before shipment to ensure functionality. For specific warranty details or technical support, please refer to the seller's policies or contact the seller directly through your purchase platform. Keep your purchase receipt as proof of purchase.