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AzureWave AW-CE123H

AW-CE123H / 802.11ac/n/b/g + Bluetooth 4.0 / Half-Size PCI-Express MiniCard User Manual

Model: AW-CE123H | Brand: AzureWave

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1. INTRODUCTION

The AzureWave AW-CE123H is a highly integrated wireless local area network (WLAN) solution combining IEEE 802.11a/b/g/n/ac Wi-Fi with Bluetooth 4.0 and BT3.0+HS Class II capabilities. This half-size PCI-Express MiniCard module is designed to provide high-speed wireless connectivity up to 867 Mbps for Wi-Fi and enhanced data rates for Bluetooth communications, enabling users to enjoy digital content without the need for extra cables.

Key Features:

- High-speed wireless connection up to 867 Mbps for Wi-Fi (802.11ac).
- Supports 2x2 MIMO antenna technology (antennas not included).
- Integrated Bluetooth 4.0 and BT3.0+HS Class II.
- Wireless Coexistence System (WCS) for optimal performance.
- Low power consumption and high performance design.
- Enhanced wireless security features.
- Fully compliant with Bluetooth 4.0, 3.0+HS, and v2.1, supporting EDR of 2Mbps and 3Mbps.
- Full-speed operation with Piconet and Scatternet support.
- Electrical compliance to USB 1.1 and 2.0.

2. SETUP AND INSTALLATION

This section provides instructions for the physical installation of the AW-CE123H module and the subsequent driver installation. Professional installation is recommended if you are not familiar with computer hardware.

2.1 Physical Installation

The AW-CE123H is a half-size PCI-Express MiniCard. Installation typically involves opening your device (laptop or desktop with compatible slot), inserting the module, and connecting the appropriate antennas (not included). Ensure your device is powered off and disconnected from all power sources before beginning.



Figure 1: Front view of the AW-CE123H module, displaying the Broadcom chipset and certification labels.

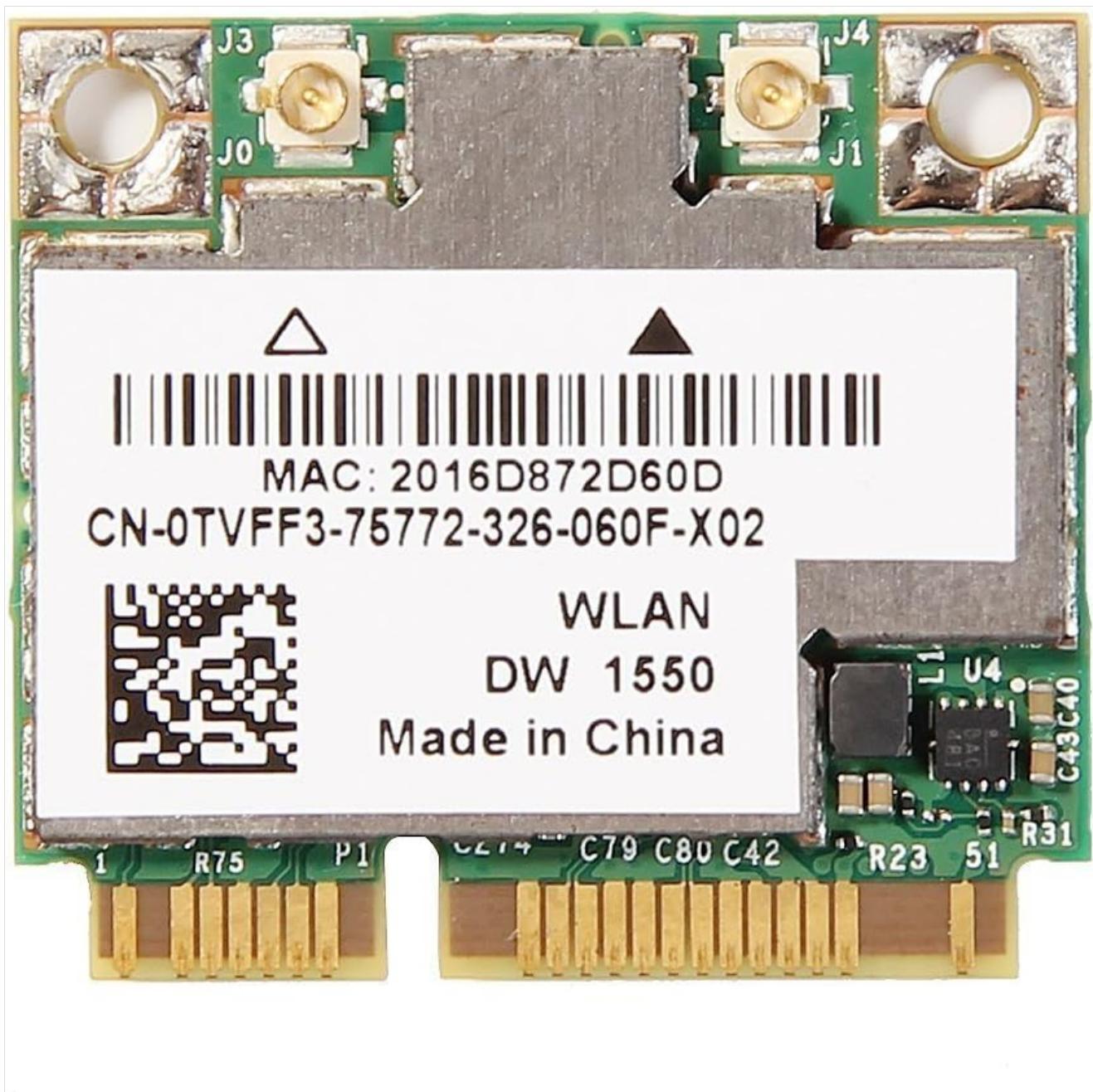


Figure 2: Back view of the AW-CE123H module, showing the MAC address (2016D872D60D) and manufacturing details.

2.2 Driver Installation

After physical installation, drivers must be installed for the module to function correctly. Modern operating systems like Windows 10 may automatically recognize and install generic drivers. However, for optimal performance and full feature set, it is recommended to install the latest official drivers from AzureWave or Broadcom's support website. If automatic installation does not occur, you will need to download and install the Wi-Fi and Bluetooth drivers manually.

3. OPERATION

Once installed and drivers are in place, the AW-CE123H module will enable Wi-Fi and Bluetooth functionalities on your device.

3.1 Wi-Fi Connectivity

To connect to a Wi-Fi network, navigate to your operating system's network settings. Select the desired Wi-Fi network from the list of available networks and enter the password if prompted. The module supports

802.11a/b/g/n/ac standards, allowing connection to 2.4GHz and 5GHz bands for high-speed data transfer.

3.2 Bluetooth Connectivity

To use Bluetooth, ensure Bluetooth is enabled in your device's settings. You can then pair with Bluetooth-enabled devices such as headphones, speakers, or other peripherals. Follow your operating system's instructions for adding new Bluetooth devices.

4. MAINTENANCE

To ensure the longevity and optimal performance of your AW-CE123H module, consider the following maintenance tips:

- **Driver Updates:** Regularly check for updated Wi-Fi and Bluetooth drivers from the manufacturer's website. Keeping drivers current can improve performance, stability, and security.
- **System Updates:** Ensure your operating system is up-to-date, as system updates often include network and Bluetooth stack improvements.
- **Physical Cleanliness:** If your device allows, periodically clean the area around the module to prevent dust buildup, which can affect cooling and performance.
- **Antenna Connection:** Ensure that the antenna connections to the module are secure and undamaged. Loose connections can lead to signal degradation.

5. TROUBLESHOOTING

This section addresses common issues you might encounter with the AW-CE123H module.

Common Issues and Solutions:

- **No Wi-Fi or Bluetooth connectivity:**
 - Verify that the module is correctly seated in its PCI-Express slot.
 - Ensure antennas are properly connected to the module.
 - Check Device Manager (Windows) or System Information (macOS/Linux) to see if the device is recognized and drivers are installed without errors. Reinstall drivers if necessary.
 - Ensure Wi-Fi and Bluetooth are enabled in your operating system settings.
- **Intermittent Wi-Fi signal or slow speeds:**
 - Update to the latest drivers for the module.
 - Ensure your router firmware is up-to-date.
 - Check for interference from other electronic devices.
 - Try connecting to a different Wi-Fi band (2.4GHz vs. 5GHz) if your router supports both.
 - Ensure your device's power management settings are not set to aggressively power down the Wi-Fi adapter.
- **Bluetooth devices not pairing or disconnecting:**
 - Ensure the Bluetooth device is in pairing mode.
 - Remove and re-pair the Bluetooth device.
 - Update Bluetooth drivers.
 - Check for physical obstructions or distance limitations between the module and the Bluetooth device.

6. TECHNICAL SPECIFICATIONS

Brand	AzureWave
Model Number	AW-CE123H
Wireless Standard	IEEE 802.11a/b/g/n/ac
Bluetooth Standard	Bluetooth 4.0 + BT3.0 HS Class II
Interface	Half-Size PCI-Express MiniCard, USB (for Bluetooth)
Data Transfer Rate (Wi-Fi)	Up to 867 Mbps (802.11ac)
Data Transfer Rate (Bluetooth)	EDR of 2Mbps and 3Mbps
Antenna Support	2x2 MIMO (Antennas not included)
Chipset	Broadcom BCM4352 and BCM20702
Dimensions (LxWxH)	1.18 x 1.06 x 0.16 inches
Item Weight	0.32 ounces
MAC Address (Example)	2016D872D60D
UPC	795945991932

7. WARRANTY AND SUPPORT

AzureWave products are manufactured to high-quality standards. For specific warranty information, please refer to the documentation provided with your purchase or visit the official AzureWave website. Warranty terms may vary based on region and retailer.

For technical support, driver downloads, or further assistance, please visit the official AzureWave support portal or contact their customer service department. Keep your product model number (AW-CE123H) and any purchase details readily available when seeking support.

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This manual is for informational purposes only. Specifications are subject to change without notice.

Related Documents - AW-CE123H

 AW-XM646x Series IEEE 802.11 a/b/g/n/ac/ax Wireless LAN 1T1R and BLE/802.15.4 Solution Family 12x12 LGA Module DataSheet Rev. B or For Standard F000001-F000002 Approved Document Rev. B	AzureWave AW-XM646x Series: IEEE 802.11 a/b/g/n/ac/ax WLAN, BLE/802.15.4 12x12 LGA Module Datasheet Detailed datasheet and layout guide for the AzureWave AW-XM646x Series module. This document covers technical specifications, features, electrical characteristics, host interfaces (WLAN, Bluetooth, 802.15.4), pin definitions, and PCB layout recommendations for integrating this 12x12 LGA module into various applications.
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 <p>uSD-1212 Adapter Board for AW-AM281-uSD and AW-CM258-uSD</p> <p>User Guide Rev. G (For Standard)</p> <p><small>The information contained herein is the exclusive property of AzureWave, Inc. and is confidential. Duplication, distribution, and unauthorized disclosure are illegal and strictly prohibited.</small></p>	<p>AzureWave uSD-1212 Adapter Board User Guide for NXP i.MX RT and i.MX6</p> <p>Comprehensive user guide for the AzureWave uSD-1212 adapter board, designed for NXP i.MX RT and i.MX6 evaluation kits. Details hardware description, block diagrams, schematics, placement, and EVB kit contents for Wi-Fi/BT module integration.</p>
 <p>AW-CM358-EVB IEEE 802.11 1X1 a/b/g/n/ac Wireless LAN and Bluetooth 5.2 12mm x 12mm LGA module</p> <p>User Guide Rev. 01 (For Standard)</p> <p><small>The information contained herein is the exclusive property of AzureWave, Inc. and is confidential. Duplication, distribution, and unauthorized disclosure are illegal and strictly prohibited.</small></p>	<p>AzureWave AW-CM358-EVB User Guide: IEEE 802.11ac & Bluetooth 5.2 Wireless Module</p> <p>This user guide provides detailed instructions for setting up and testing the AzureWave AW-CM358-EVB, a 12mm x 12mm LGA module supporting IEEE 802.11 a/b/g/n/ac Wireless LAN and Bluetooth 5.2. It covers hardware and software requirements, RF transmit/receive test setups, WLAN and Bluetooth basic tests, and EVB attachment.</p>
 <p>AW-XM553-EVB IEEE 802.11 1X1 a/b/g/n/ac Wireless LAN + Bluetooth 5.2 Combo 12 x 12 LGA Module</p> <p>User Guide Rev. 02 (For Standard)</p> <p><small>The information contained herein is the exclusive property of AzureWave, Inc. and is confidential. Duplication, distribution, and unauthorized disclosure are illegal and strictly prohibited.</small></p>	<p>AzureWave AW-XM553-EVB User Guide: IEEE 802.11ax Wi-Fi & Bluetooth 5.2 Wireless Module</p> <p>User guide for the AzureWave AW-XM553-EVB evaluation board, featuring IEEE 802.11ax Wi-Fi and Bluetooth 5.2. Covers system setup, hardware requirements, software installation, RF testing, and schematics.</p>
 <p>FRDM-IW416-AW-AM510 Wi-Fi Expansion Board for NXP FRDM</p> <p>User Guide Rev. A (For Standard)</p> <p><small>The information contained herein is the exclusive property of AzureWave, Inc. and is confidential. Duplication, distribution, and unauthorized disclosure are illegal and strictly prohibited.</small></p>	<p>AzureWave FRDM-IW416-AW-AM510 Wi-Fi Expansion Board User Guide</p> <p>User guide for the AzureWave FRDM-IW416-AW-AM510 Wi-Fi and Bluetooth expansion board, designed for NXP FRDM Evaluation Kits. Details hardware description, signal interfaces (SDIO, UART, PCM), schematics, and placement.</p>
 <p>AW-HM610 IEEE 802.11ah Wireless LAN Module</p> <p>Layout Guide Rev. 0.1 (For Standard)</p> <p><small>The information contained herein is the exclusive property of AzureWave, Inc. and is confidential. Duplication, distribution, and unauthorized disclosure are illegal and strictly prohibited.</small></p>	<p>AW-HM610 IEEE 802.11ah Wireless LAN Module Layout Guide</p> <p>This document provides essential layout guidelines and recommendations for the AzureWave AW-HM610 IEEE 802.11ah Wireless LAN Module. It covers RF trace routing, ground and power planes, digital interfaces, antenna considerations, shielding, and footprint recommendations to ensure optimal performance and prevent EMI issues.</p>