PRODUCT BRIEF

**Intel® Centrino® Advanced-N + WiMAX 6250**

Mobile Computing

# Intel® Centrino® Advanced-N + WiMAX 6250

## Product Description

The Intel® Centrino® Advanced-N + WiMAX 6250 is an IEEE 802.16e and 802.11a/b/g/n wireless multi-band network adapter. This module, available in the PCIe Half MiniCard form factor, delivers up to 20 Mbps+ downlink, up to 6 Mbps+ uplink performance over WiMAX, and up to 300 Mbps Tx/Rx[1] over Wi-Fi. The Intel® Centrino® Advanced-N + WiMAX 6250 operates in the 2.3Ghz, 2.5 GHz, and 3.5Ghz spectra for WiMAX and 2.4 GHz and 5.0 GHz spectra for Wi-Fi. This integrated module, embedded in Intel technology notebooks and netbooks, provides flexible and convenient connectivity to both WiMAX and Wi-Fi networks, and includes Intel® My WiFi Technology which can connect up to 8 CE devices to enhance today's mobile lifestyle.

## Features

**WiMAX**

- IEEE 802.16e-2005 Wave 2 compliant
- Over-the-air provisioning, management and upgrade support
- Secure broadband connectivity
- USB power optimization
- Quality of service and optimized handover support
- Intel® PROSet/Wireless WiMAX Connection Utility[4]

**Wi-Fi**

- Up to 300 Mbps of bandwidth[1]
- Up to 2X greater range[1]
- IEEE standards based 802.11a/b/g/n WLAN adapter
- Industry leading power consumption[2]
- Wireless support for Intel® Active Management Technology
- Wi-Fi Personal Area Network capabilities[3]

| WiMAX | |
|---|---|
| **Features** | **Benefits** |
| IEEE 802.16e-2005 Wave 2 compliant. Mobile WiMAX Release 1 Wave 2 system profile ready | Broadband connectivity for rich Internet experience while on the go with open standards-based WiMAX networks |
| Over-the-air provisioning, management and upgrade support | Activate and stay connected on broadband with minimal effort |
| Secure broadband connectivity | Peace of mind with secure access to critical information and applications when you need it |
| USB power optimization | Stay connected longer |
| Quality of service and optimized handover support | Enjoy better voice and video quality while on the move |
| Intel® PROSet/Wireless WiMAX Connection Utility[4] | Scan for and securely connect to available WiMAX networks |

| Wi-Fi | |
|---|---|
| **Features** | **Benefits** |
| **Mobile Performance** | |
| **Over 5X bandwidth increase[1]** Up to 300 Mbps[1] bandwidth compared to 54 Mbps 802.11a/b/g solutions | Minimizes the time needed to transfer large files and enables applications such as High Definition (HD) video streaming, Voice over IP (VoIP), and multi-player gaming |
| **Up to 2X greater range[1]** MIMO, diversity, and support for up to two antennas enable better wireless reception at the same distance when compared to 802.11a/b/g solutions | Reduces the number of "dead zones", network re-connects, and dropped data packets; dramatically improving connectivity throughout the home and enabling more consistent coverage in the enterprise |
| **Industry-leading power consumption[2]** Optimized power modes (sleep states) reduce power consumption during periods of inactivity | Reduced WLAN power consumption results in potentially longer platform battery life[2] for greater utility, enjoyment, and convenience |

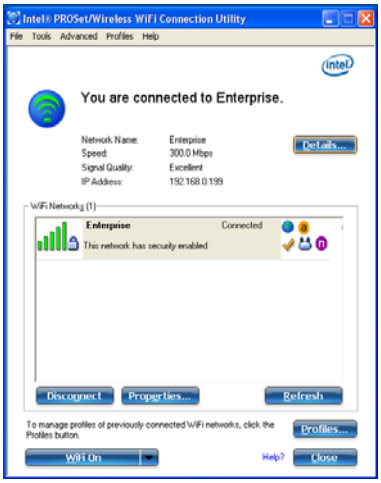
| Wi-Fi<br>Features | Benefits |
|---|---|
| **Manageability and Security** | |
| **Intel® Active Management Technology**<br>Asset management, remote system diagnostics, network protection, and network security technology | Provides IT managers the capability to remotely discover, heal, and protect wireless notebooks regardless of the functional state of the operating system which can result in reduced on-site support costs |
| **Advanced Security via 802.11i**<br>Wireless security supporting AES encryption | Ensures enterprise wireless networks are protected from unauthorized access via stronger authentication and encryption mechanisms |
| **Intel® PROSet /Wireless Software v.13.0[4]**<br>Intel WLAN management software | Simplifies client deployments and allows remote management of wireless settings and profiles by IT managers |
| **Interoperability** | |
| **IEEE standards based 802.11a/b/g/n WLAN adapter**<br>Wi-Fi CERTIFIED* to IEEE 802.11a, 802.11b, 802.11g, and 802.11n standards | Ensures maximum interoperability with other IEEE-based wireless access points and wireless network adapters |
| **Support for Cisco Compatible Extensions* v4**<br>Cisco Centralized Key Management, Call Admission Control, Unscheduled Automatic Power Save Delivery (U-APSD), and Voice Metrics | Helps prevent delays in VoIP calls when roaming between access points; enables improved network diagnostics |
| **Connect with Centrino®**<br>Intel certification that focuses on interoperability between IEEE 802.11n devices | Selection of access points with the Connect with Centrino® label ensures that both the Access Point and the Intel® Centrino® Advanced-N 6200 + WiMAX 6250 equipped laptop have passed numerous interoperability tests |

## Intel® PROSet/Wireless WiMAX Connection Utility[4]

Intel® PROSet/Wireless WiMAX Connection Utility allows users to easily and securely connection to service provider's WiMAX network:

- Enables secure over-the-air software updates
- Supports both device and user authentication
- Simplifies activation with over-the-air support

## Intel® PROSet/Wireless WiFi Software v13.0[4]




Intel® PROSet/Wireless WiFi Software v.13.0 is available for users of Intel® WLAN hardware. The latest version of the software helps enable a superior experience by providing enhancements for end users as well as IT administrators who deploy and manage wireless networks. Features include:

- Enhanced simple User Interface
- IT Administration Tool capabilities
  - Install Package Creator
  - Central control over driver and application settings
  - Single Sign On for Microsoft Windows*
- Additional profile management capabilities
- Support for Wi-Fi Protected Setup* (WPS)
- Support for high throughput 802.11n networks
- Support Intel® Active Management Technology

## Intel® Centrino® Advanced-N + WiMAX 6250 Technical Specifications

### General

| | |
|---|---|
| Dimensions (H x W x D) | PCIe Half Mini Card: 26.65 mm x 29.85 mm x 4.39 mm |
| Weight | PCIe Half Mini Card: 4.5 g |
| Radio ON/OFF Control[5] | Supported in both hardware and software |
| Connector interface | PCIe electrical interface for Wi-Fi, USB 2.0 for WiMAX |
| LED Output | 2 LED indicators, one for Wi-Fi and one for WiMAX (LED behavior per Mini Card specification) |
| Operating Temperature | 0 to +80ºC |
| Humidity Non-Operating | 50% to 90% RH non-condensing (at temperatures of 25°C to 35°C) |
| Operating Systems | Microsoft Windows XP* 32/64-bit, Microsoft Windows Vista* 32/64-bit, Microsoft Windows 7* 32/64-bit |
| Wi-Fi Alliance* | Wi-Fi Certified* for 802.11a, 802.11b, 802.11g, 802.11n, WMM*, WPA*, WPA2*, and WPS |
| WiMAX Forum* | WiMAX Certifiable for 802.16e Wave 2 |
| Microsoft WHQL | YES |
| IEEE WLAN Standard | IEEE 802.11a/b/g/n, 802.11d, 802.11e, 802.11i, 802.11h |
| Architecture | Infrastructure or ad hoc (peer-to-peer) |
| Roaming[6] | Supports seamless roaming between respective access points (802.11b, 802.11g, 802.11a/b/g, and 802.11a/b/g/n) |

### Security

| | |
|---|---|
| Authentication | Wi-Fi: WPA[7] and WPA2[7], 802.1X, LEAP, EAP-TLS, PEAP-TLS, and PEAP-MSCHAPv2* WiMAX: EAP, CMAC, X.509 |
| Encryption | Wi-Fi: CKIP, TKIP, 64-bit and 128-bit WEP (for 802.11a/b/g), AES-CCMP (for 802.11a/b/g/n); WiMAX: AES-CCM, Key Binding, Microsoft Crypto API |
| Product Safety | UL, C-UL, CB (IEC 60950-1) |

### Compliance

| | |
|---|---|
| Retail (Credit Card Processing) | PCI, CISP |
| Government | FIPS[8] ,FISMA |

| Products Available | Model Code | Version |
|---|---|---|
| Intel® Centrino® Advanced-N + WiMAX 6250 | 622ANXHMW | Supports 802.16e and 802.11a/b/g/n in a PCIe Half MiniCard form factor |
| | 622AGXHRU | For Russia only. Supports 802.16e and 802.11a/b/g in a PCIe Half MiniCard form factor |

+ Results based on conductive test data, actual results may vary based on your specific hardware, connection rate, site conditions, network service and software configurations. WiMAX connectivity requires a WiMAX enabled device and subscription to a WiMAX broadband service. WiMAX connectivity may require you to purchase additional software or hardware at extra cost. Availability of WiMAX is limited, check with your service provider for details on availability and network limitations. Broadband performance and results may vary due to environment factors and other variables. See www.intel.com/go/wimax for more information.

Δ Intel® Active Management Technology (Intel® AMT) requires the computer system to have an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. For more information, see www.intel.com/technology/platform-technology/intel-amt/.

[1] Up to 2x greater range and up to 5x better performance enabled by 1x2 802.11n implementations with 2 receive spatial streams. Actual wireless throughput and/or range will vary depending on your specific operating system, hardware, and soft-ware configurations. Check with your PC and access point manufacturer for details.

[2] References to improved battery life as measured by MobileMark* 2005, refer to platform comparisons versus competing 802.11n WLAN solutions. Actual platform battery life savings will vary depending on your specific operating system, hardware and software configurations. Check with your PC manufacturer for details.

[3] Wi-Fi Personal Area Network refers only to Wi-Fi enabled devices connecting to the PC via the Intel® My WiFi Technology. Wi-Fi devices must be certified by the Wi-Fi Alliance for 802.11a/b/g. Check with your PC manufacturer for more details.

[4] Intel® PROSet/Wireless Software and WiMAX Connection Utility software may not be supported by your PC manufacturer. Check with your PC manufacturer for details on availability.

[5] Wi-Fi and WiMAX radios do not operate simultaneously. Wireless connectivity and some features may require the purchase of additional software, services, or external hardware. Availability of public wireless LAN access points is limited, wireless functionality may vary by country. See http://www.intel.com/products/centrino/more_info for more information.

[6] Roaming is supported only between each respective band and mode of access points.

[7] Some security solutions may not be supported by your PC's operating system and/or by your PC manufacturer. Check with your PC manufacturer for details on availability.

[8] Microsoft Windows Vista and Microsoft Windows 7 only.

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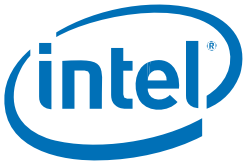


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