

## Document Overview

This document describes the Alereon AL4512 UWB Hub.

## 1.0 WIRELESS USB/ULTRA-WIDEBAND OVERVIEW

The AL4512 Hub allows Ultra-wideband (UWB) wireless data transfer and interoperability with other Certified Wireless USB devices. Certified Wireless USB is the new wireless extension to USB, combining the speed and security of wired USB technology with the convenience and ease-of-use of wireless. Certified Wireless USB supports robust high-speed wireless connectivity by utilizing the common WiMedia UWB radio platform developed by the WiMedia Alliance. UWB technology offers a solution for high bandwidth, low cost, and low power consumption. Certified Wireless USB is the first high-speed wireless personal interconnect technology to meet the needs of multimedia consumer electronics, PC peripherals, and mobile devices. Certified Wireless USB preserves the functionality of wired USB while eliminating the tangle of cable connections.

## 2.0 PACKAGE CONTENTS

Your AL4512 Hub Solution package should contain all the items shown in [Figure 1](#). In addition, there will be a CD containing all software (including drivers) and documentation for the AL4512 Hub. See [Table 1](#) for package contents.

Figure 1. AL4512 Hub and Accessories



Table 1 AL4512 Hub Package Contents

1	AL4512 Certified Wireless USB Hub
2	Antenna
3	Power Supply
4	Power Cord
5	USB Cable
6	Documentation/Software CD (not shown)

### 3.0 PRODUCT FEATURES

The AL4512 Hub provides numerous features:

- Certified Wireless USB offers guaranteed interoperability with other Certified Wireless USB devices.
- Eliminates networking cable clutter.
- Windows XP compatibility via included software drivers.
- Compact designs help prevent desk clutter.
- Full one year warranty (see enclosed warranty sheet for details).
- 55 Mbps–480 Mbps data rates, depending on range, application, and ambient wireless conditions.

### 4.0 SYSTEM REQUIREMENTS

The following specifications are necessary for each computer using the AL4512 Hub Solution:

- USB-equipped PC
- Windows XP with Service Pack 2 and the .NET Framework 2.0 installed\*
- 1GHz (or greater) processor
- 256MB (or more) memory
- At least 50MB of free hard-drive space
- At least one other Certified Wireless USB device with which to communicate

**\*Note:** Drivers for Windows Vista have not yet been released, but will be before the end of 2007.

### 5.0 RANGE

In normal home and business environments, Alereon recommends that the AL4512 hub be placed within 10 meters of the Certified Wireless USB devices with which it is communicating for best operations. Under ideal circumstances and with properly configured Certified Wireless USB devices (such as the AL4504 USB dongle), the AL4512 Hub is capable of significantly longer ranges, but these are not guaranteed. Likewise, in environments with heavy EMF shielding or significant radio frequency (RF) noise, the hub and other Certified Wireless USB devices may need to be placed closer together for optimal performance.

### 6.0 SETUP

Perform the following steps to get your AL4512 Hub up and running:

1. Remove all items from the packaging and inspect them for damage. If any appear to have been damaged in shipping, please contact Alereon Technical Support via this web form:  
<http://www.alereon.com/contact-us/>



2. Put the Documentation/Software CD into the PC to which you wish to attach the Hub. An install program will automatically start running after insertion (if not, please double-click on the program icon on the CD, or reset your permissions to allow the program to run).
3. Follow the on-screen instructions to install the driver and software for the hub.
4. Attach the hub to the PC by plugging it into the USB port.
5. Attach the included antenna to the AL4512 by screwing it into the antenna connector on the side of the hub.

**Warning:** Operation of this unit is authorized by the FCC only with the antenna furnished. Substitution or alteration of the antenna or its connection may void the users authority of operate this device.

6. Following the remaining interactive software instructions to configure the hub for operation.
7. Once you have finished these steps, your AL4512 Hub should be working.

## 7.0 OPERATIONS

For details on how to use the Certified Wireless USB software, please see the *Alereon Software Guide*.

## 8.0 FCC COMPLIANCE

### 8.1 Compliance Statement

The following compliance statement applies to the AL4512 Hub:

**This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.**

### 8.2 FCC Requirements

#### 8.2.1 Modification Voids Compliance Warning

**Warning:** Changes or modifications to the AL4512 Hub not expressly approved by Alereon can void the your warranty and place the AL4512 Hub outside FCC equipment authorization.

#### 8.2.2 Electromagnetic Interference Control

Electromagnetic Interference (EMI) is any signal or emission, radiated in free space or conducted along power or signal leads, which endangers the function of radio navigation or other safety service (the telephone and cellphones are considered to be safety services) or seriously degrades, obstructs or repeatedly interrupts a licensed radio communications service. Radio communications services include but are not limited to: AM/FM commercial broadcast, television, cellular services, radar, air traffic control, pager and personal communications services (PCS). These licensed services, along with unintentional radiators such as digital devices, including computer systems, contribute to the electromagnetic environment.

Electromagnetic Compatibility (EMC) is the ability of items of electronic equipment to function properly together in the electromagnetic environment. While the AL4512 Hub has been designed and determined to be compliant with regulatory agency limits for EMI, there is no guarantee that interference will not occur in a particular installation. If it does cause interference with radio communications services, which can be determined by turning the device on and off, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the device with respect to the victim receiver
- Move the device away from the victim receiver
- Plug the device host into a different power outlet than the victim receiver so that the device system and receiver are on separate branch circuits

If necessary, consult your system service representative or an experienced radio/television technician for additional help in resolving interference.

## 9.0 TROUBLESHOOTING

Below are troubleshooting steps to resolve the most common problems with your AL4512 Hub.

### 9.1 Installation Software Does Not Start After CD Inserted

If the CD-ROM does not start the Alereon Software Installation program automatically, other applications could be interfering with the CD drive. If the Alereon Software Installation screen does not appear within 30 seconds, double-click on the "My Computer" icon. Next, double-click on the CD-ROM drive in which the Installation CD has been placed to start the installation. If the installation does not start automatically, right-click to select "Explore", then double-click on the installation icon.

### 9.2 Power LED Does Not Light Up; Hub Not Working

If the LED indicators do not light up, your hub may not be powered up. Verify that the hub power adapter is plugged firmly into a power socket (wall outlet, power strip, etc.), and that the socket has power. Check to see that the drivers for the Card have been installed. Right-click on the "My Computer" icon on your desktop. Choose "Properties" and navigate to the "Device Manager" and see if your AL4512 Hub is listed without any errors. If an error is indicated, contact Alereon technical support, as indicated in Section 6.0.

### 9.3 Other Software Errors

For other software errors or driver difficulties, please see the *Alereon Software Guide*.

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