

# Atheros Modular Certification

## Instructions to OEM Integrators

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## Revision History

Revision	Description of Changes
Aug 2009	Initial Release

## Introduction

This document describes mandatory steps required by the OEM integrator when designing and manufacturing any host PC system utilizing an Atheros radio module. Also refer to the *Atheros Regulatory Compliance Guide* available on the Atheros customer support site and from the Atheros customer support contact person.

**This document lists the mandatory responsibilities and actions of the OEM integrator. Failure to comply with all requirements and conditions in this document, may result in non-compliance of the host PC with FCC rules and invalidate the Atheros FCC certification for the module.**

This guide applies to Client modules that act under control of an Access Point. This document does not apply to a Client module or Access Point with radar detection feature.

## Allowed Antennas to be Used with the Radio Module

The Integrator must request from Atheros sales or regulatory contact person the current list of allowable antennas for use with the specific radio module. This information is not available on the public FCC database but will be provided by Atheros. Atheros will provide a table of antenna type(s) models, cable lengths, and peak gain in each band. Generally, the list will include omnidirectional Inverted-F (PIFA) and stamped metal/film antennas for use inside laptops. In some cases, dipole antenna types may be included in the available list. Peak gain including cable losses are quoted in the table provided by Atheros.

Use of any of the antennas in the list (identical or equivalent antenna with same gain, dimensions and cable lengths) is acceptable in the host device, without any further FCC testing or submission.

However, use of an antenna that is Higher gain than those on the list or is a Different Type, requires additional testing and submission to the FCC. Also, if the host PC is certified as an FCC Portable device subject to RF Exposure (SAR) evaluation, then additional SAR testing per FCC rules may be required. Therefore, antennas with higher gain or different type than specified by Atheros, may not be used with the Atheros module until new testing and reporting is completed.

*You must contact the Atheros Regulatory Group to report any higher gain or new antenna type to be used with the module.*

## Antenna Placement and RF Hazard (SAR) Compliance

For host PCs certified as FCC Mobile Category devices, the FCC Grant of approval for the Atheros module is only valid when the Integrator ensures antenna placement in the host system that maintains at least 20 cm separation between any part of the antenna element(s) and any part of the end user's body (considering their likely or usual operation position and grip). This spacing is naturally met by non-Mobile systems such as Access Points or Desktop PCs. Laptop PCs typically have integrated antennas placed high in the LCD display assembly.

However, additional certification testing including RF Exposure (SAR) testing and an FCC certification submission are required to gain permission to place antennas closer than 20 cm to the end-user (e.g. a WLAN radio in a handheld personal organizer, Netbook or Tablet PC where the antennas will be close to the users hands or lap. Such host PCs will require certification per FCC rules for a Portable Category host.

This restriction is specified on the FCC modular grant of approval:

**"The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons**

*You must contact the Atheros Regulatory Group to evaluate need for RF Exposure evaluation and additional FCC testing and submission for host PCs where antenna element will not maintain at least 20cm separation from end user per above description.*

## **Colocation of Radio Module with Other Integrated or Plug-In Radios**

The FCC Grant of approval for the radio module includes a restriction that no other radio be operated inside the same host system. If other radio devices are to be integrated with the Atheros module, then additional evaluation and FCC submission may be required - outside of the scope of the existing Atheros modular approval.

Also, the end-user instructions must warn end users to turn off the Atheros radio while any other plug-in radio is being operated in the same host system.

This restriction is specified on the FCC modular grant of approval:

***“The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.”***

*You must contact the Atheros Regulatory Group to evaluate need for additional FCC evaluation for cases where any collocated radio exists in the same host PC as the Atheros module.*

## Required Host System Labeling

### *FCCID and Industry Canada ID*

The Integrator must affix the Atheros module's FCCID on the module. Also, when the module is not visible when installed in the host system, an additional label must appear on the outside of the host system visible to the user. Industry Canada (IC) labeling is only required on the module.

Example FCC & Canada IDs to appear on module:

**[These are example ID's. Atheros Regulatory Group will provide the applicable IDs for each module.]**

FCCID: PPD-AR5BXB6

IC: 4105A-AR5BXB6

Example wording also to appear somewhere on the outside of the host system visible to the end user:

Contains FCCID: PPD-AR5BXB6

### *FCC Logo*

The FCC logo shown below must appear on the host system signifying declared compliance of the system with FCC digital emissions rules.



## Required User Manual Wording for Host PC System

The FCC requires the following text (or equivalent) included in the user documentation provided to the end user:

Example text which can be used by the Integrator in the end user instructions are:

### ***Satisfying RF exposure compliance and Radio compliance.***

#### **FCCID: [provided by Atheros regulatory group]**

This device generates and radiates radio-frequency energy in compliance with FCC radio frequency radiation exposure guidelines for an uncontrolled environment. This equipment must be installed and operated while maintaining a minimum body-to-antenna distance of 20 cm.

*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.*

*This product does not contain any user serviceable components. Any unauthorized product changes or modifications will invalidate warranty and all applicable regulatory certifications and approvals.*

**For 5 GHz Devices Only, Include the following additional Note:** *"In the 5150 MHz to 5250 MHz frequency range this transmitter is restricted to indoor use only."*

#### **Include the following co-location statement (unless special permission was granted allowing co-location of additional radios with the Atheros module:**

*"This radio module may not be operated with any other radio or transmitting antenna, unless the Atheros module is disabled"*

#### **FCC Part 15 Digital Emissions Compliance**

*We [System Manufacturer Name, Address, Telephone], declare under our sole responsibility that the product [System Name] 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.*

*WARNING: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.*

*However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:*

*Reorient or relocate the receiving antenna.*

*Increase the separation between the equipment and receiver.*

*Connect the equipment into an outlet on a circuit different from the one the receiver is connected to.*

*Consult the dealer or an experienced radio/TV technician for help.*

*The user may find the following booklet prepared by the Federal Communications Commission helpful:*

*The Interference Handbook*

*This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-00345-4.*

*Industry Canada Requires the following wording to the end user in French and English:*

*Industry Canada Notice:*

*This device complies with Canadian RSS-210.*

*To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmitting antenna) that is installed outdoors is subject to licensing. The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's web site [www.hc-sc.gc.ca/rpb](http://www.hc-sc.gc.ca/rpb).*

*"This Class B digital apparatus complies with Canadian ICES-003"*

*Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada*

*Avos de Conformité à la Réglementation d'Industrie Canada:*

*Pour empêcher toute interférence aux services faisant l'objet d'une licence, cet appareil doit être utilisé à l'intérieur seulement et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. L'installateur du présent matériel radio doit s'assurer que l'antenne est située ou pointée de manière à ce que cette dernière n'émette pas de champs radioélectriques supérieurs aux limites spécifiées par Santé Canada pour le grand public; consulter le Code de sécurité 6, disponible sur le site Web de Santé Canada, à l'adresse suivante: [www.hc-sc.gc.ca/rpb](http://www.hc-sc.gc.ca/rpb).*

*End of Required User Manual Wording to end user provided by radio/system integrator*





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