



SUMMIT SEMICONDUCTOR LLC

AUDIO WIRELESS CLIENT MODULE – ATHENA 4XD

SUMMIT SEMICONDUCTOR LLC
Model No.: 444-2253
FCC ID: UA9605

USER MANUAL

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Model No. 444-2253
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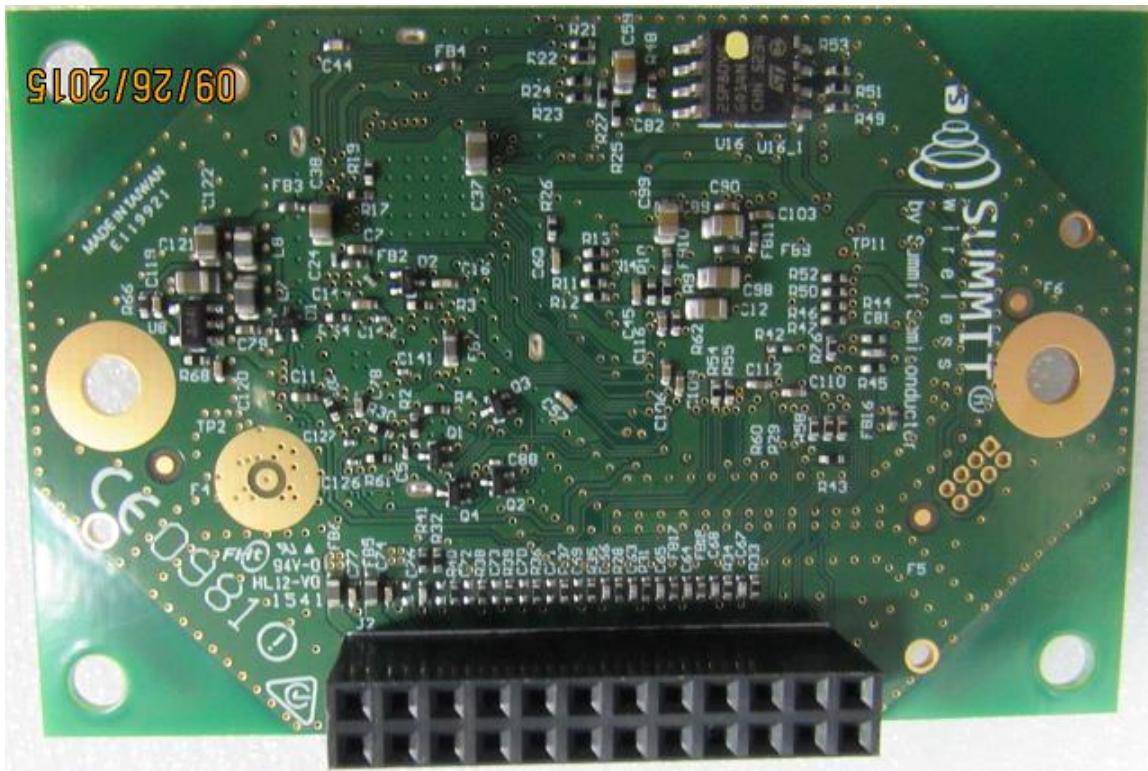
Introduction:

The 444-2253 Wireless Audio Client device is a production ready module designed for active speakers in Summit Semiconductor's wireless audio technology. The module mounts to the top interior wall of a typical speaker. The module includes a patented, low cost, high gain quad diversity PCB antenna integrated in the module to provide superior wireless performance without the need for external antennas. A 24 pin interface provides, I2S digital audio outputs, power, I2C and GPIO signals for control of the amplifier and power supply.

Photographs



FRONT SIDE



BACK SIDE

User Manual Regulatory Statements

The United States Federal Communication Commission and Industry Canada established certain rules governing the use of electronic equipment, included in the following required guidelines.

FCC / IC Identification Numbers

United States	FCC ID UA9605
Industry Canada	IC: 9129A-605

FCC / IC Compliance Statements



Required warning statement per FCC 15.19(a)(3) and (a)(4);

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.

Required warning statement per RSS-Gen, Section 8.4:

This device complies with Industry Canada's license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux normes Industry Canada exemptes de licence RSS standard(s). Son fonctionnement est soumis aux deux conditions suivante:

- (1) cet appareil ne doit pas provoquer d'interférence; et
- (2) cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable.

CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CAUTION: The operation of this radio in the 5.15-5.25 GHz frequency band is restricted to indoor use only.

CAUTION: Do not replace the antennas.



FCC / IC Changes Warning

CAUTION: ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

ATTENTION: LES CHANGEMENTS OU MODIFICATIONS NON EXPRESSEMENT APPROUVER PAR LA PARTIE RESPONSABLE DE LA CONFORMITÉ POURRAIEMENT ANNULER L'AUTORITÉ DE L'UTILISATEUR DE L'APPAREIL

FCC Information to the user

Note: 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 that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Users should also be cautioned to take note that high-power radars are allocated as primary users (meaning they have priority) of the bands 5250-5350 MHz, 5600-5650 MHz, and 5650-5850 MHz and these radars could cause interference and/or damage to WLAN devices.



IC Information to the User

Per RSS-Gen Section 3.2.1: The host device shall be properly labeled to identify the modules within the host device. The Industry Canada certification label of a module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labeled to display the Industry Canada certification number of the module, preceded by the words “Contains transmitter module”, or the word “Contains”, or similar wording expressing the same meaning, as follows: **Contains transmitter module IC: 9129A-605**

FCC Labeling

While the FCC user ID is placed on the master device circuit board, compliant labeling shall also be placed on the end product housing exterior.

FCC / IC Antenna usage

Antennas are required to be permanently attached or of non-standard connection method to prevent the end user from altering the installation's performance. The installer shall be responsible for this. The antennae are built-in. No change is provided for or allowed by FCC/IC regulations.

CAUTION: DO NOT REPLACE THE ANTENNAS

ATTENTION : N'ESSAYEZ PAS DE REMPLACER LES ANTENNES

Mobile Exposure

The user is cautioned to maintain 10mm (0.39 inch) spacing from the product to ensure compliance with FCC/IC requirements.



FCC Modular approval configuration control

Control of the end product into which the module will be installed must be maintained such that full compliance of the end product is always ensured. The modular transmitter must comply with any specific rule or operating requirements applicable to the transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements.

It is the responsibility of the OEM or module level customer to install the master device in accordance with the guidelines of this manual. In order to maintain compliance with FCC regulations, the module installer must adhere to the guidelines listed in the installation section of this manual.

FCC / IC Indoor Usage

Operation of the radio in the 5150-5250 MHz frequency band is restricted to indoor use only. The device (for the UNII-1 band and per interim weather radar interference) is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

EM Installation Instructions

In order to maintain compliance with FCC, Industry Canada, and any other applicable regulations, it is required of the OEM or module level customer to adhere to the guidelines listed in this manual.

Mounting hardware

The client device PC board provides two 3.5mm diameter holes intended to house up to 3mm diameter mounting hardware. The installation does not require metal mounting standoff hardware for grounding purposes but that is recommended. There are three guide pin holes adjacent to antennas A1, A2 and A3. Non-metallic pins should be used in these holes.



OEM Operating Environment

Operating Temperature: 0 to 70C at printed circuit board (PCB) ambient

Storage Temperature: -40 to 85C PCB ambient

Humidity: 85%, 85C PCB ambient

OEM Operating Instructions

The client module accepts one channel of 24-bit uncompressed digital audio at sample rates up to 96 KHz.

Operating instructions at the electrical I/O and software interface level are not relevant to the end user and are proprietary in nature. The end user should not have understanding of how to manipulate the transmitter at this level.

Revision History

Revision	History	Issue Date	Remarks
1.0	Draft Release	10 October, 2015	Pending FCC Grant
1.2	FCC/IC Statements	4 December 2015	
1.2.1	Minor Edits	7 December 2015	Proposed final