



**SUMMIT SEMICONDUCTOR LLC**  
**Model No.: 444-2254**  
**FCC ID: UA9805**

**USER MANUAL**



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## Introduction

The 444-2254 Wireless Audio Master is a production ready module designed as the master signal source provider to active speakers in Summit Semiconductor's wireless audio technology. The module mounts inside of a typical set-top box, AVR, or television and interfaces with the OEM system board. The module includes a patented, low cost, PCB antenna integrated in the module to provide superior wireless performance without the need for external antennas. Provisions are provided for external antenna use with allowed antenna model numbers. The module interface provides for I2S digital audio inputs, I2C control, and power supply.

## Module Photographs

### 1.1 Front View



### 1.2 Rear View





## 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 UA9805
Industry Canada	IC: 9129A-805

### FCC/ IC Compliance Statement

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.

### 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 POURRAIENT 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 3.1: 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-805**

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.

Per RSS-GEN, Section 8.4: Cet appareil est conforme aux normes Industry Canada exemptes de licence RSS standard(s). Son fonctionnement est soumis aux deux conditions suivantes :

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

## Product Labeling

While the FCC and IC identification numbers are placed on the master module, compliant labeling shall also be placed on the end product housing exterior.

## FCC / IC Antenna usage

The module includes a built-in antenna. The module has provisions to use external antenna if desired, and must be selected from the list of approved antenna assemblies. External 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. No change is provided for or allowed by FCC regulations.

<b>CAUTION: DO NOT TRY TO REPLACE THE ANTENNAS</b>
<b>ATTENTION : N'ESSAYEZ PAS DE REMPLACER LES ANTENNES</b>





## Mobile Exposure

The user is cautioned to maintain 20cm (8 inch) spacing from the product to ensure compliance with FCC 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

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

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.

## OEM 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.

### 1.1 Mounting hardware

The master device PC board provides three 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. The two attachments adjacent to the antennas must be non-metallic in nature if utilizing the built-in antennas.





## 1.2 Operating Environment

Operating Temperature: 0 to 50C at printed circuit board (PCB) ambient

Storage Temperature: -40 to 85C PCB ambient

Humidity: 85%, 85degC PCB ambient

## 1.3 Operating Instructions

The master module provides four I2S inputs to support 2.0 through 7.1 audio channel configurations. The module accepts up to eight channels of 24-bit uncompressed digital audio at sample rates up to 96 KHz.

The master module is controlled through a simple API over the I2C control bus.

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.

## 1.4 Compatible External Antenna

1) Nearson, Model T614AH

Configuration: External, Reverse SMA, Omni

Region: USA / Canada / Australia / New Zealand

Gain: 5.0dBi

2) Electric Connector Technology, Model 81800T183

Configuration: External, Reverse SMA, Omni

Region: USA / Canada / Australia / New Zealand / Europe / Japan

Gain: 2.6dBi

3) Nearson, Model K131AH

Configuration: External, Reverse SMA, Omni

Region: USA / Canada / Australia / New Zealand / Europe / Japan

Gain: 2.0dBi

Additional information may be found in the manufacturer's data sheets.



## Revision History

Revision	History	Issue Date	Remarks
1.0	Draft Release	22 December, 2015	Proposed final Pending FCC Grant
1.1		2 February, 2016	Added K131AH Antenna