SUMMIT SEMICONDUCTOR LLC

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http://www.summitsemi.com

Wheeler Model 444-2203 User Manual

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2 User Manual Regulatory Statements

The United States Federal Communication Commission has established certain rules governing the use of electronic equipment, including the following required guidelines.

2.1 FCC / IC Identification Numbers

United States	FCC ID UA9100
Industry Canada	IC: 9129A-100

2.2 FCC/ IC Compliance Statement

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.

2.3 FCC Changes Warning

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

2.4 FCC / IC 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.

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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 LE-LAN devices.

2.5 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.

2.6 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 ensuring that the proper antenna is employed so that the transmit power limits are not exceeded. Non-approved antennas should not be used.

This device has been designed to operate with the antennas listed below. Antennas not included in this list are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

2.7 Mobile Exposure

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

2.8 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.

2.9 FCC / IC Indoor Usage

The device (for the band 5150-5250 MHz, and per interim weather radar interference per below) is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

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2.10 FCC Interim Solution to DFS band interference with Weather Radar

The grantee must ensure that the applications subject to this interim procedure must include appropriate attestations that the device is intended for indoor use (through a clear indication in a manual or labels with the device) and must demonstrate through test reports that the transmission is disabled in the 5600 - 5650 MHz band.

Per above, the master device is intended for indoor use only.

The master device firmware is written to prevent usage of channel 120, 124, and 128 (5600, 5620, 5640).

3 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.

3.1 Flex cable interface

The installation is approved for use with 4” to 12” length 40-pin 1.00mm(0.039”) pitch flat flex cable.

3.2 Mounting hardware

The master device PC board provides four 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.

3.3 Antennas

Antennas shall be mounted/separated at least 5 inches apart for proper operation of the device. Antennas shall employ a permanent mounting style such that they are not readily changeable by the customer.

Approved antennas:

	Picture	Design Frequency	Antenna Gain	Gain Method	Type
Aeon Technology C6276-510001A		2.4, 5.8 GHz	2.2dBi	Measured	1/4 wave dipole

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Additional antenna data is available upon request.

4 OEM Operating Environment

Operating Temperature: 0 to 70C pcb ambient
Storage Temperature: -40 to 85C pcb ambient
Humidity: 85%, 85degC pcb ambient

5 OEM Operating Instructions

The master module provides four I2S inputs to support 2.0 to 7.1 audio channel configurations. It accepts up to eight channels of 24-bit uncompressed digital audio at sample rates up to 48 KHz.

The master module is controlled through a simple API via I2C.

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.