



## SUMMIT SEMICONDUCTOR LLC

22867 NW Bennett St.  
Suite 200  
Hillsboro, OR, 97124  
Phone: 503 615-7700 •  
Fax: 503 615-4232  
<http://www.summitsemi.com>

8 July, 2014

Federal Communications Commission  
Authorization and Evaluation Branch  
7435 Oakland Mills Road  
Columbia, MD 21046

Subject: Request for unlicensed Modular Transmitter Approval.

Dear Application Examiner:

Summit Semiconductor LLC hereby requests FCC Equipment Authorization and Evaluation branch to approve Summit Semiconductor LLC Model 444-2251, digital wireless audio master device, FCC ID-UA9800, modular approval for a 21 channel DFS enabled transmitter. This letter addresses the information required by points one through eight of 47 CFR 15.212.

1. “The modular transmitter must have its own RF shielding.” The transmitter radio section of the module is enclosed within a RF shield. The RF shield is solder mounted to the exposed grounding of the circuit board. The point of contact between the shield and the board has multiple ground contacts. The internal photos exhibit has pictures of the wireless master device with and without the shield. The shield suppresses spurious radiations as per FCC requirements.
2. “The modular transmitter must have buffered modulation/data inputs.” The 444-2251 has buffered data inputs that pass through an embedded processor. RF modulation controls are generated on board. Firmware will also not allow the end user to access RF modulation / data rate control settings of the RF circuitry. No change in input data or control signal can affect the RF data rate or type. This method insures compliance with Part 15 requirements under conditions of excessive data rates or over modulation.
3. “The modular transmitter must have its own power supply regulation.” The 444-2251 digital wireless master device receives power from an external +3.3 VDC and external +1.2 VDC

supply on the customer's host controller board. The +3.3 VDC supply sources some circuitry directly and is also regulated to +2.8 VDC. The +1.2 VDC supply sources circuitry directly. In order to comply with the requirement that all voltages be regulated, we have included an over voltage detection circuit which ceases RF transmission when the radio input voltage exceeds its +10% threshold.

4. "The modular transmitter antenna must comply with the antenna and transmission system requirements of section 15.203, and 15.204(c)." The modular device complies with all FCC antenna requirements. The 444-2251 digital wireless master device is designed in such a way that the antenna is integrated with the modular device. As per the FCC 15.203 requirement, this can be considered as permanently attached and doesn't give the user any option to replace it. A list of usable antennas is not provided since the user manual clearly instructs the user that the modular device is compatible with only the integrated antenna. The antenna report also provides a description as to how the modular device complies with the de facto EIRP limit.
5. "The modular transmitter must be tested in a stand-alone configuration." As described in the technical report exhibit and the test set up photos of the test report included in the filing for FCC equipment authorization, the 444-2251 digital wireless master device module was tested as a standalone device. The device is designed with an industry standard multi pin connector and was tested in typical configuration which is greater than 10 cm in length from the host device.
6. "The modular transmitter must be equipped with either a permanently affixed label or must be capable of electronically displaying the FCC identification number." A FCC ID and model number is labeled on every modular device. FCC ID label and location exhibit has a photograph which shows the exact location of the label. Since the FCC ID number will not be visible when the module is installed inside the host audio source, another label with the same FCC ID will be applied to the exterior of the host/master enclosure.
7. "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." The EUT complies with all specific rules such as modulation scheme, modulation type, bandwidth, antenna requirements, power supply regulation, and suppression of spurious emissions and so on. A detailed user manual is provided with every EUT which instructs the user to maintain compliance as per the requirements of the Commission. The manual also cautions the user not to make any changes or modifications not approved by the party responsible for compliance. Please see the operating description exhibit for further details to understand how the EUT complies with specific rules and operating requirements as per FCC.
8. "The modular transmitter must comply with any applicable RF exposure requirements in its final configuration." The EUT is compliant with all applicable RF exposure requirements and EUT is operated in a manner that ensures the public is not exposed to radio frequency in excess of Federal Communication Commission's guidelines. Please see the RF exposure exhibit.

Best Regards

Kenneth A. Boehlke

Kenneth A Boehlke  
Principal Engineer