



MMB Research Inc.

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Modular Approval Request

Applicant: **MMB RESEARCH INC.**
 FCC ID: **XFF-CSB04PA1X**

July 30, 2018


To Whom It May Concern:

Pursuant to Section 15.212(a)(1) of the FCC rules, the Applicant, request for single modular approval, compliance with the requirements are addressed below.

Single Modular Approval Requirements	Justification
(i) The radio elements of the modular transmitter must have their own shielding. The physical crystal and tuning capacitors may be located external to the shielded radio elements.	The shielding of the radio portion can be demonstrated in exhibition external photo.
(ii) The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with part 15 requirements under conditions of excessive data rates or over-modulation.	Buffered data inputs stage has been integrated in chip EFR32MG13
(iii) The modular transmitter must have its own power supply regulation.	The main SoC with part number EFR32MG13 has integrated power regulation.
(iv) The modular transmitter must comply with the antenna and transmission system requirements of §§ 15.203, 15.204(b) and 15.204(c). The antenna must either be permanently attached or employ a “unique” antenna coupler (at all connections between the module and the antenna, including the cable). The “professional installation” provision of § 15.203 is not applicable to modules but can apply to limited modular approvals under paragraph (b) of this section.	The requirements of antenna connector and spurious emissions have been fulfilled. Please reference test reports.
(v) The modular transmitter must be tested in a stand-alone configuration, <i>i.e.</i> , the module must not be inside another device during testing for compliance with part 15 requirements. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in § 15.207. AC or DC power lines and data input/output lines connected to the module must not contain ferrites, unless they will be marketed with the module (see § 15.27(a)). The length of these lines shall be the length typical of actual use or, if that length is unknown, at least 10 centimeters to insure that there is no coupling between the case of the module and supporting equipment. Any accessories, peripherals, or support equipment connected to the module during testing shall be unmodified and commercially available (see § 15.31(i)).	Please refer to various test reports and photos.

<p>(vi) The modular transmitter must be equipped with either a permanently affixed label or must be capable of electronically displaying its FCC identification number.</p> <p>(A) If using a permanently affixed label, the modular transmitter must be labeled with its own FCC identification number, and, if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODEL1." Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.</p> <p>(B) If the modular transmitter uses an electronic display of the FCC identification number, the information must be readily accessible and visible on the modular transmitter or on the device in which it is installed. If the module is installed inside another device, then the outside of the device into which the module is installed must display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains FCC certified transmitter module(s)." Any similar wording that expresses the same meaning may be used. The user manual must include instructions on how to access the electronic display. A copy of these instructions must be included in the application for equipment authorization.</p>	<p>The instruction on the labeling rule of the end product has been stated in the users manual of this module. Please also see the exhibition Label Sample</p>
<p>(vii) The modular transmitter must comply with any specific rules or operating requirements that ordinarily apply to a complete transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements. A copy of these instructions must be included in the application for equipment authorization.</p>	<p>The required FCC rule has been fulfilled and all the instructions for maintaining compliance has been clearly stated in the Users Manual.</p>
<p>(viii) The modular transmitter must comply with any applicable RF exposure requirements in its final configuration.</p>	<p>Please refer exhibition RF Exposure for the compliance of MPE/SAR RF exposure rule.</p>

Regards,

By:  Mark Borins
 (Signature) (Print Name)

Title: CTO

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