



Simplifying · Security

November 2, 2018

RE: U5X-RE228 Request for Limited Modular Approval

To Whom It May Concern:

We hereby request Limited Modular Approval for U5X-RE228 as described under 47 CFR 15.212(b). This device is usable on only a few host devices that have been designed to work with the RE228 and RE228T daughter boards. The daughter boards will not operate unless connected to a host device that has been designed to work with the daughter board. In addition, the daughter boards are installed into one of the host devices prior to shipping to customers. This process ensures that only complete units of host device and RE228/RE228T daughter board reaches customers. The following pages further describe the compliance of this device with Limited Modular Approval requirements.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Saldin", is written in a cursive style.

Paul Saldin
Vice President

Alula

Applicant/Grantee		Alula	
FCC ID:		U5X-RE228	
Section 15.212 Modular Transmitters			
Request for Modular Approval		<input type="checkbox"/>	Request for Limited Modular Approval <input checked="" type="checkbox"/>
	Requirements	EUT Conditions	Comply (Y/N)
Single Modular Approval Requirements			
1	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.	Not required for LMA. All tuning components are still on module.	N
2	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.	Only two binary inputs are accepted from host devices. Data rates are controlled by the module.	Y
3	The modular transmitter must have its own power supply regulation.	This requirement is not necessary for LMA. Host devices must supply 3 VDC power to module for the module to operate.	N
4	The modular transmitter must comply with the antenna and transmission system requirements of Sections 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 Section 15.203 is not applicable to modules but can apply to limited modular approvals under paragraph (b) of this section.	The antenna is permanently attached to the board and is not removable.	Y
5	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 Section 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 Section 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 Section 15.31(i)).	Not required for LMA. As specified in 15.212(b), the manufacturer must only "demonstrate by alternative means in the application for equipment authorization that the modular transmitter meets all the applicable Part 15 requirements under the operating conditions in which the transmitter will be used." We have done this by testing the device in each host device to show compliance with emission limits will test in future host devices. The transmitter board also requires power and inputs from the host board to operate making it only functional if in the tested host devices. Test result	N

		details for the device in each host device are in Exhibit I1 and Exhibit I2.	
6	<p>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><i>(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.</i></p> <p><i>(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.</i></p>	FCC label will be affixed to the top of the transmitter daughter board inside the host device and will also be affixed to the outside of the host device enclosure. Please see Internal Photos and ID Label Photos for details.	Y
7	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.	We have provided instructions in the user manual.	Y
8	The modular transmitter must comply with any applicable RF exposure requirements in its final configuration.	This device is not meant to be used near the body. Details explained in RSS-102 SAR and RF Exp Exemption Technical Brief.	Y

A **limited modular approval** may be granted for single or split modular transmitters that do not comply with all of the above requirements, e.g., shielding, minimum signaling amplitude, buffered modulation/data inputs, or power supply regulation, if the manufacturer can demonstrate by alternative means in the application for equipment authorization that the modular transmitter meets all the applicable Part 15 requirements under the operating conditions in which the transmitter will be used. Limited modular approval also may be granted in

those instances where compliance with RF exposure rules is demonstrated only for particular product configurations. The applicant for certification must state how control of the end product into which the module will be installed will be maintained such that full compliance of the end product is always ensured.