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Request for Modular/Limited Modular Approval

Date: January 19, 2020

Subject: Manufacturer's Declaration for 🖾 - Modular Approval 🔅 - Split Modular Approval 🔅 - Limited Modular Approval

Confidentiality Request for: <u>FCC ID: 2AUXFMP280B</u>

8 Basic Requirements – FCC Part 15.212(a)(1) For Items Marked "NO(*)", the Limited Module Description Must be Filled Out on the Following Pages					
Modular Approval Requirement	Requirement Met				
 The modular transmitter must have its own RF shielding. This is intended to ensure that the module does not have to rely upon the shielding provided by the device into which it is installed in order for all modular transmitter emissions to comply with FCC limits. It is also intended to prevent coupling between the RF circuitry of the module and any wires or circuits in the device into which the module is installed. Such coupling may result in non-compliant operation. The physical crystal and tuning capacitors may be located external to the shielded radio elements. 15.212(a)(1)(i) 	🖾 - YES	□ - NO(*)			
Details: The module contains a metal shield which covers all RF components and circuitry. The shof the board	hield is locate	d on the top			
2. The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with FCC requirements under conditions of excessive data rates or over-modulation. 15.212(a)(1)(ii)	🛛 - YES	□ - NO(*)			
Details: Data to the modulation circuit is buffered as described in the operational description provi	Details: Data to the modulation circuit is buffered as described in the operational description provided with the application				
3. The modular transmitter must have its own power supply regulation on the module. This is intended to ensure that the module will comply with FCC requirements regardless of the design of the power supplying circuitry in the device into which the module is installed. 15.212(a)(1)(iii)	🛛 - YES	□ - NO(*)			
Details: The module contains its own power supply regulation. Please refer – to schematic filed wi	Details: The module contains its own power supply regulation. Please refer – to schematic filed with this application				
4. The modular transmitter must comply with the antenna and transmission system requirements of §§ 15.203, 15.204(b), 15.204(c), 15.212(a), and 2.929(b). 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 15.212(b). 15.212(a)(1)(iv)	🖾 - YES	□ - NO(*)			
Details: EUT uses permanently attached antenna to the intentional radiator					
5. The modular transmitter must be tested in a stand-alone configuration, i.e., the module must not be inside another device during testing. This is intended to demonstrate that the module is capable of complying with Part 15 emission limits regardless of the device into which it is eventually installed. 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 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 or commercially available (see Section 15.31(i)). 15.212(a)(1)(v)	⊠ - YES	□ - NO(*)			
Details: The module was tested stand-alone as shown in test setup photographs filed with this application					
Modular Approval Requirement	Modular Approval Requirement Requirement				
 6. The modular transmitter must be labeled with its own FCC ID number, or use an electron display (see KDB Publication 784748). 	⊠ - YES	□ - NO(*)			

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	Details: The module meets Portable exclusion levels as shown in the RF exposure information file	d with this ap	plication.
8.	The modular transmitter must comply with any applicable RF exposure requirements. For example, FCC Rules in Sections 2.1091, 2.1093 and specific Sections of Part 15, including 15.319(i), 15.407(f), 15.253(f) and 15.255(g), require that Unlicensed PCS, UNII and millimeter wave devices perform routine environmental evaluation for RF Exposure to demonstrate compliance. In addition, spread spectrum transmitters operating under Section 15.247 are required to address RF Exposure compliance in accordance with Section 15.247(b)(4). Modular transmitters approved under other Sections of Part 15, when necessary, may also need to address certain RF Exposure concerns, typically by providing specific installation and operating instructions for users, installers and other interested parties to ensure compliance. 15.212(a)(1)(viii)	⊠ - YES	□ - NO(*)
	Details: The module complies with FCC Part 15C requirements. Instructions to the OEM installer installation manual filed with this application.	are provided	in the
7.	The modular transmitter must comply with all specific rule or operating requirements applicable to the transmitter, including all the conditions provided in the integration instructions by the grantee. A copy of these instructions must be included in the application for equipment authorization. For example, there are very strict operational and timing requirements that must be met before a transmitter is authorized for operation under Section 15.231. For instance, data transmission is prohibited, except for operation under Section 15.231(e), in which case there are separate field strength level and timing requirements. Compliance with these requirements must be assured. 15.212(a)(1)(vii)	🛛 - YES	□ - NO(*)
	Details: There is a label on the module as shown in the labeling exhibit filed with this application.		
	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. 15.212(a)(1)(vi)		
	If using a permanently affixed label with its own FCC ID number, if the FCC ID 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.		

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Limited Module Description – When Applicable

* If a module does NOT meet one or more of the above 8 requirements, the applicant may request Limited Modular Approval (LMA). This Limited Modular Approval (LMA) is applied with the understanding that the applicant will demonstrate and will retain control over the final installation of the device, such that compliance of the end product is always assured. The operating condition(s) for the LMA; the module is only approved for use when installed in devices produced by grantee. A description regarding how control of the end product, into which the module will be installed, will be maintained by the applicant/manufacturer, such that full compliance of the end product is always ensured should be provided here.

Details: <example - N/A>

Software Considerations – KDB 594280 / KDB 442812 (One of the following 2 items must be applied)			
Requirement	Requirement Requirement Met		
 For <u>non-Software Defined Radio</u> transmitter modules where software is used to ensure compliance of the device, technical description must be provided about how such control is implemented to ensure prevention of third-party modification; see KDB Publication 594280. 	Provided in Separate Cover Letter	🗆 - N/A	
Details: <example a="" adjusted="" application.="" as="" be="" by="" can="" cover="" described="" device="" end="" filed="" firmware="" in="" letter="" modified="" not="" of="" or="" separate="" the="" this="" user="" with="" –=""></example>			
 For <u>Software Defined Radio (SDR)</u> devices, transmitter module applications must provide a software security description; see KDB Publication 442812. 	Cover Letter	🗆 - N/A	
Details: <example a="" –n=""></example>			

Split Modular Requirements				
Requirement	Provided in Manual			
 For split modular transmitters, specific descriptions for secure communications between front-end and control sections, including authentication and restrictions on third-party modifications; also, instructions to third-party integrators on how control is maintained. 	Provided in Separate Cover Letter	🗆 - N/A		
Details: <example a="" n="" –=""></example>				

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OEM	1 Integration Manual Gu	idance – KDB 996369 D03 Section 2			
		ng the Conditions, Limitations, and Proce ntegrate the module into a host device.	dures		
Requirement			·		
Is this module intended for sale to third parties?	🖾 - YES	☐ - No, If No, and LMA applies, the applicant can optionally choose to not make the following detailed info public. However there still needs to be basic integration instructions for a users manual and the information below must still be included in the operational description. If the applicant wishes to keep this info confidential, this will require a separate statement cover letter explaining the module is not for sale to third parties and that integration instructions are internal confidential documents.			
As of May 1, 2019, the FCC requ applicants should include informa For example information on tra	ires ALL the following in tion in their instructions ace antenna design could	nual – See KDB 996369 D03, Section 2 formation to be in the installation manual for all these items indicating clearly when indicate "Not Applicable". Also if a modu parties, the user instructions may not need	l. Modular transmitter they are not applicable. Ile is limited to only a		
		ription, but this should include a cover let			
1. List of applicable FCC rules. K		2.2			
•	ated to the transmitter.				
systems, professi	as limits on antennas, cable onal installation info	e loss, reduction of power for point to point			
limiting condition b. When RF exposu that compliance i 4. Trace antenna designs. KDB 99 a. Layout of trace d design verification confidential, the	ive means that the grantee ns re evaluation is necessary, s ensured, such as Class II 6369 D03, Section 2.5 esign, parts list, antenna, c n, and production test prod	uses to verify the host meets the necessary state how control will be maintained such	☑ - All Items shown to the left are provided in the Modular Integration Guide (or UM) for Full Modular Approval (MA) or LMA.		
 5. RF exposure considerations. KD a. Clearly and expliment of the conditions o	B 996369 D03, Section 2. citly state conditions that a bes of instructions are nece (mobile, portable – xx cm vided to the end user in the ection 2.7 ncluded in the application applicable. The antenna 1	allow host manufacturers to use the essary: first to the host manufacturer to a from body) and second additional text host product manuals. and all applicable professional installer ist shall also identify the antenna types	☐ - An LMA applies and is approved ONLY for use by the grantee in their own products, and not intended for sale to 3 rd parties as provided in a separate cover letter. Therefore the information shown to		
 Label and compliance informati a. Advice to host in "Contains FCC I 	on. KDB 996369 D03, Sec tegrators that they need to D: " with their finished pro	provide a physical or e-label stating oduct	the left is found in the theory of operation.		
a. Test modes that s clarifications nec b. Provide informat	should be taken into consider essary for stand-alone and ion on how to configure te				
9. Additional testing, Part 15 Subp					

Sincerely,

By:

Hong Sun - President (Signature/Title¹) (Print name)

¹ - Must be signed by applicant contact given for applicant on the FCC site, or by the authorized agent if an appropriate authorized agent letter has been provided. Letters should be placed on appropriate letterhead.

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