<u>Request for Modular/Limited Modular Approval</u>

Date: April 13, 2023

Subject:	Manufacturer's Declaration for	🖂 - Modular Approval
		🗆 - Limited Modular Approva

 \Box - Split Modular Approval

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Confidentiality Request for: ____2AL6KBL-M8811CU5____

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		ment 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(*)	
2. The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to		[
2. The modular transmitter must have outfield modulation/data inputs (it 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(*)	
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(*)	
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(*)	
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(*)	

Modular Approval Requirement	Require	ment Met
 6. The modular transmitter must be labeled with its own FCC ID number, or use an electron display (see KDB Publication 784748). 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. 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 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 must be included in the application for equipment authorization. 		□ - NO(*)
7. The modular transmitter must comply with all specific rule or operating requirements applicable to the		
7. The modular transmitter must comply with an specific fulle of 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(*)
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(*)

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 Met		
1. 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	
 For <u>Software Defined Radio (SDR)</u> devices, transmitter module applications must provide a software security description; see KDB Publication 442812. 	- Provided in Separate Cover Letter	🖾 - N/A	

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	

OEM Integration Manual Guidance – KDB 996369 D03 Section 2					
Clear and Specific Instructions Describing the Conditions, Limitations, and Procedures for third-parties to use and/or integrate the module into a host device.					
Requirement					
		□ - No,			
Is this module intended for sale to third parties?	🖾 - YES	If No, and LMA applies, the applicant can optionally choose to no make the following detailed info public. However there still needs to be basic integration instructions for a users manual and the			
Item	s required to be in the man				
As of May 1, 2019, the FCC req applicants should include informati example information on trace ante products and not intended for sale be placed in the o	Items required to be in the manual – See KDB 996369 D03, Section 2 As of May 1, 2019, the FCC requires ALL the following information to be in the installation manual. Modular transmitter applicants should include information in their instructions for all these items indicating clearly when they are not applicable. For example information on trace antenna design could indicate "Not Applicable". Also if a module is limited to only a grantees own products and not intended for sale to third parties, the user instructions may not need to be detailed and the following items can be placed in the operational description, but this should include a cover letter as cited above.				
1. List of applicable FCC rules. K					
 a. Only list rules related to the transmitter. 2. Summarize the specific operational use conditions. KDB 996369 D03, Section 2.3 a. Conditions such as limits on antennas, cable loss, reduction of power for point to point systems, professional installation info 3. Limited Module Procedures. KDB 996369 D03, Section 2.4 a. Describe alternative means that the grantee uses to verify the host meets the necessary limiting conditions b. When RF exposure evaluation is necessary, state how control will be maintained such that compliance is ensured, such as Class II for new hosts, etc. 4. Trace antenna designs. KDB 996369 D03, Section 2.5 a. Layout of trace design, parts list, antenna, connectors, isolation requirements, tests for design verification, and production test procedures for ensuring compliance. If confidential, the method used to keep confidential must be identified and information provided in the operational description. 5. RF exposure considerations. KDB 996369 D03, Section 2.6 					
Two types of inst conditions (mobil provided to the er 6. Antennas. KDB 996369 D03, Se a. List of antennas i instructions when (monopole, PIFA 7. Label and compliance informatic a. Advice to host im "Contains FCC II 8. Information on test modes and a a. Test modes that s clarifications nec	ructions are necessary: first t le, portable – xx cm from boo nd user in the host product m ection 2.7 ncluded in the application an applicable. The antenna list , dipole, etc – note that "omr on. KDB 996369 D03, Section tegrators that they need to pr D: " with their finished produc dditional testing requirement hould be taken into consider essary for stand-alone and sin on on how to configure test	ad all applicable professional installer shall also identify the antenna types ni-directional" is not considered a type) on 2.8 ovide a physical or e-label stating act ts. KDB 996369 D03, Section 2.9 ation by host integrators including multaneous configurations. modes for evaluation	e 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 the left is found in the theory of operation.		
Sincerely,		Han bung Deng			

By:

_ Hanbing Deng / Manager_ (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.