Vermeer

1210 VERMEER ROAD EAST P.O. BOX 200 PELLA, IA 50219 USA

PHONE: (888) VERMEER

Request for Modular/Limited Modular Approval

Date: January 19, 2021

Subject: Manufacturer's Declaration for

- □ Modular Approval
- □ Split Modular Approval
- \boxtimes Limited Modular Approval
- \Box Limited Split Modular Approval

Confidentiality Request for: <u>2AXF5-VERMEER1</u>

8 Basic Requirements – FCC Part 15.212(a)(1) For Items Marked "NO(*)", the Limited Module Description Must be Following Pages	Filled Out	t on the
Modular Approval Requirement	Require	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(*)
Details: The module contains a metal shield which covers all RF comp The shield is located on the top of the board next to antenna connecto		l circuitry.
 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 description provided with the application.	operation	al
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. Pleas filed with this application.	e refer to s	chematic



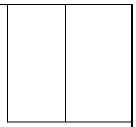
PHONE: (888) VERMEER

	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: The module connects to its antenna using an UFL connector we non-standard connector. A list of antennas tested and approved with found in users manual provided with the application.		
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(*,
	this application.		s jiicu wi
6.	Modular Approval Requirement	Require	



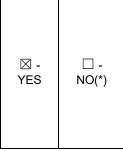
PHONE: (888) VERMEER

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)



Details: There is a label on the module as shown in the labeling exhibit filed with this application. Host specific labeling instructions are shown in the installation manual .filed with this application.

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: The module complies with FCC Part 15C requirements. Instructions to the OEM installer are provided in the installation manual filed with this application.

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)

Details: The module meets exclusion levels as shown in the RF exposure information filed with this application.



PHONE: (888) VERMEER

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 provided here.

Details: N/A

Software Considerations – KDB 594280 / KDB 442812 (One be applied)	-		
Requirement			
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	
Details: <example be<="" can="" device="" firmware="" not="" of="" td="" the="" –=""><td>modified or adjusted</td><td>bv the end</td></example>	modified or adjusted	bv the end	
user as described in a separate cover letter filed with this	application. >	5	
 <i>user as described in a separate cover letter filed with this</i> For <u>Software Defined Radio (SDR)</u> devices, transmitter module applications must provide a software security description; see KDB Publication 442812. 	application. >	⊠ - N/A	

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>		

Vermeer	OEM Integration	on Manual Guidanc	e – KDB 996369 D03 Sec	tion 2
	Clear and Specific Instruc for third-parties t		e Conditions, Limitations ate the module into a hos	
	Requirement			
V	Roquionon		🛛 - N	0.
1210 VERMEER ROAD EAST P.O. BOX 200 PELLA, IA 50219 USA PHONE: (888) VERMEER	Is this module intended for sale to third parties? Items required to As of May 1, 2019, the FCC manual. Modular transmit for all these items indi information on trace anten	requires ALL the fo ter applicants shou icating clearly wher na design could ind	Id include information in h they are not applicable. licate "Not Applicable".	, the applicant can make the following lowever there still ation instructions for in formation below in the operational cant wishes to keep this will require a rer letter explaining to third parties and ctions are internal ocuments. ection 2 e in the installation their instructions For example Also if a module is
	limited to only a grantees			
	user instructions may not the operational descrip		ld include a cover letter a	
	1. List of applicable FCC rule	es. KDB 996369 D03,	Section 2.2	
		les related to the trans		
	of power fo installation 3. Limited Module Procedur a. Describe alt	such as limits on ante r point to point syster info es. KDB 996369 D03,	nnas, cable loss, reduction ns, professional Section 2.4 :he grantee uses to verify	 ➢ - All Items shown to the left are provided in the Modular Integration Guide (or UM) for Full
	b. When RF ex control will ensured, su	posure evaluation is be maintained such t ch as Class II for new	necessary, state how hat compliance is hosts, etc.	Modular Approval (MA) or LMA.
	isolation re production confidentia identified a description Not Applic	race design, parts list, quirements, tests for e test procedures for er l, the method used to nd information provic able.	antenna, connectors, design verification, and nsuring compliance. If keep confidential must be ded in the operational	applies <u>and is</u> <u>approved ONLY</u> <u>for use by the</u> <u>grantee in their</u> <u>own products</u> , and not intended for sale to 3 rd parties as provided in a separate cover letter. Therefore
	manufactur instructions to define co and second	explicitly state condit ers to use the module s are necessary: first t nditions (mobile, port	tions that allow host e. Two types of o the host manufacturer table – xx cm from body) d to be provided to the	the information shown to the left is found in the theory of operation.

EQUIPPED TO DO MORE.



PHONE: (888) VERMEER

List of antennas included in the application and all applicable professional installer instructions when applicable. The antenna list shall also identify the antenna types (monopole, PIFA, dipole, etc – note that "omni- directional" is not considered a type)	
applicable. The antenna list shall also identify the antenna types (monopole, PIFA, dipole, etc – note that "omni- directional" is not considered a type)	
types (monopole, PIFA, dipole, etc – note that "omni- directional" is not considered a type)	
directional" is not considered a type)	
nuliance information KDR 006260 D02 Section 2.0	
וועוווועוווועווווווווווווווווווווווווו	
Advice to host integrators that they need to provide a	
physical or e-label stating "Contains FCC ID: " with their	
finished product	
on test modes and additional testing requirements. KDB	
Section 2.9	
Test modes that should be taken into consideration by	
host integrators including clarifications necessary for	
stand-alone and simultaneous configurations.	
Provide information on how to configure test modes for	
evaluation	
sting, Part 15 Subpart B disclaimer. KDB 996369 D03,	
	physical or e-label stating "Contains FCC ID: " with their finished product on test modes and additional testing requirements. KDB Section 2.9 Test modes that should be taken into consideration by host integrators including clarifications necessary for stand-alone and simultaneous configurations. Provide information on how to configure test modes for evaluation

Sincerely,

By:

General Counsel

(Signature/Title¹)

Daniel Huitink, Deputy

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.