Vermeer

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

PHONE: (888) VERMEER

Regulatory Information

FCC/IC Requirements for Modular Approval

Agency Identification Numbers

Product Family	US/FCC (15.247)	Canada/IC (RSS-247)
VERMEER2	2AXF5-VERMEER2	26431-VERMEER2

RADIO APPARATUS Family

Laird Part #	Vermeer Part #	Form Factor
RM024-S125-M-XX	312000365	Surface Mount
RM024-P125-M-XX	312000381	Pluggable

Antenna Information

The RADIO APPARATUS family is designed to operate with the antennas listed below and a maximum gain of 9 dBi. The required antenna impedance is 50 ohms.

Vermeer part #	Manufacturer	MFG Part #	Type / Description	Gain (dBi)
296575415	L-COM	HG2409Y-NF	Yagi	9.0
296575413	L-COM	HG2409P-NF	Flat Patch	8.0
296575414	L-COM	HG2408P-NF	Round Patch	8.0
296541293	Pulse / Larsen	SLPT2400NMOHF	Shadow	5.1
296575379	Nearson	S151TC-2450	Dipole	5.0
296541296	Pulse / Larsen	SLPT2400DMN	Shadow	4.8
163722969	Laird	TRA6927M3PB-001	Phantom	4.6
296272382	PCTEL	PCTCN24005	Open Coil Colinear	4.5
296541297	Laird Connectivity	TRAB24003P	Phantom	3.0
296541408	Molex	146153 100mm	Balance Flex	3.0
296589356	Laird Connectivity	TRAB24003NP	Phantom	3.0
296304935	Pulse / Larsen	SPDA172400	Dipole	2.0
296521447	Laird Technologies	MAF94045	PCB Trace	2.0
296541344	Nearson	S181FL-5(178)-PX-2450	Dipole	2.0
296541409	Molex	146153 150mm	Balance Flex	2.0
296575378	Nearson	S181TC-2450	Dipole	2.0
296575416	Nearson	S181FL-6-PX-2450S	Dipole	2.0
296575417	Laird Technologies	001-0014	FlexPIFA	2.0

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- To reduce potential radio interference to other users, the antenna type and gain should be chosen so that the equivalent isotropically radiated power (EIRP) is not more than that permitted for successful communication.

- The OEM is free to choose another vendor's antenna of like type and equal or lesser gain as an antenna appearing in the table and still maintain compliance. *Reference FCC Part 15.204(c)(4) for further information on this topic.*

Power Exposure Information

FCC

In general, there are two agency classifications for RF radiation exposure in wireless applications:

- **Mobile** – A mobile device is defined as a transmitting device designed to be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structures and the body of the user or nearby persons. The RADIO APPARATUS is fully modular approved for mobile and fixed applications. *Reference FCC Part 2.1091 for further details on mobile devices.*
- **Portable –** Portable is a classification of equipment where the user, in general, is within 20 cm of the transmitting antenna. Further RF evaluation is required by customers who want to use the RADIO APPARATUS in portable applications that do not meet the minimum separation distance required for RF Exposure compliance referenced in the note below.. Contact a qualified test house or a Vermeer Corporation representative for further information on this topic. *Reference FCC Part 2.1093 for further details on portable devices.*

A RF Exposure report has been created to demonstrate compliance with the SAR Test Exclusion Threshold (for the FCC) and with the Exemption Limit for Routine SAR Evaluation (for ISED), provided the minimum separation distances are maintained.

Note: To comply with FCC RF Exposure requirements, a minimum separation distance of 9 cm must be maintained:

CAUTION: Any changes or modifications not expressly approved by Vermeer Corporation could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If

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this equipment does not cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit that is different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION:
"THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES AND INDUSTRY CANADA LICENSE-EXEMPT RSS STANDARD(S). OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION."

Information on test modes and additional testing requirements
Additional guidance for testing host products is given in KDB Publication 996369 D04 Module Integration Guide. Test modes should take into consideration different operational conditions for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product.

Additional testing – Part 15 Subpart B disclaimer
The module is only FCC authorized for the specific rule parts listed on the grant, and that the host product must be compliant to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

Industry Canada Statement

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference
(2) This device must accept any interference, including interference that may cause undesired operation of the device

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L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) L'appareil ne doit pas produire de brouillage;
(2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Radio Identification Statements:
The host devices shall be labeled with the following statements:
This device contains FCC ID: 2AXF5-VERMEER2 and IC ID: 26431-VERMEER2

Radiation Exposure Statement:
This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator & body extremities.

Déclaration d'exposition aux radiations:
Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20 cm entre le radiateur et votre corps.

This device is intended only for OEM integrators under the following conditions:
1) The transmitter module may not be co-located with any other transmitter or antenna.
However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes:
1) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.
Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

IMPORTANT NOTE:
In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product

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(including the transmitter) and obtaining a separate Canada authorization.

NOTE IMPORTANTE:
Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling
The final end product must be labeled in a visible area with the following: “Contains IC: 26431-VERMEER2”.

Plaque signalétique du produit final
Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 26431-VERMEER2.

Manual Information to the End User
The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module.
The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final
L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.
Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

This radio transmitter [IC: 26431-VERMEER2] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Le présent émetteur radio [IC: 26431-VERMEER2] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

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