



# HIT-NOT Proximity System

## FMM-T



## User's Manual v1.0

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US6,810,353; AU2005289704; ZA2007/02919; ZA2008/02673;  
ZA2010/06816, ZA2010/09068 Patent Pending**

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# 1 Overview

The Facility Marker Module – Tracking (FMM-T) is an accessory device that detects when a Magnetic Field Generator (MFG) is present and sends a 917.25 radio transmission back to the MFG. This transmission is stored in the MFG and when combined with a REM Data Relay it can give approximate location of events and travel times in a facility. The FMM-T uses a Linx ANT-916-WRT-UFL antenna to send messages to other HitNot Devices.

## 1.1 Theory of Operation

The FMM-T contains a single copper wrapped coil that is used to detect the 73kHz signals produced by the MFG. If the 73kHz field strength received by the FMM is above a certain threshold, indicating that the distance between the Magnetic Field Generator and the device is within a set threshold, the FMM will transmit back to the MFG using the 917.25MHz radio.

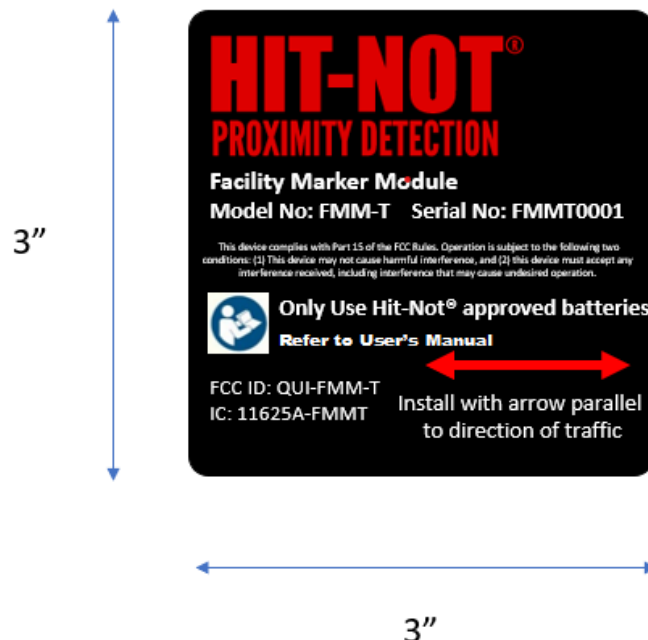
The FMM-T is powered by 2 3.6V DC Lithium Non-Rechargeable batteries. This eliminates the need for outside power to be brought to the unit.

## 1.2 Frequency of Operation

The FMM-T operates at 917.25 MHz.

## 1.3 Label Information

The label is located on the top lid of the EUT and is placed centered with the red arrow matching the direction of the internal coil.



## 1.4 FCC/IC Information

The FCC ID for the FMM-T is QUI-FMM-T and complies with Part 15 of the FCC Rules.

Operation is subject to the following conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received including interference that may cause undesired operation.

Any intentional or unintentional changes or modifications to the configuration of FMM-T not expressly approved by Frederick Energy Products LLC 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 not guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:*

*--Reorient or relocate the receiving antenna.*

*--Increase the separation between the equipment and receiver.*

*--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*

*--Consult the dealer or an experienced radio/technician for help.*

*This equipment complies with FCC/ISED radiation exposure limits set forth for an uncontrolled environment. End Users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must be at least 20 cm from the user and must not be co-located or operating in conjunction with any other antenna or transmitter.*

*Conformité aux normes FCC Cet équipement a été testé trouvé conforme aux limites pour un dispositif numérique de classe B, conformément à la Partie 15 des règlements de la FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les interférences nuisibles dans une installation résidentielle.*

*Cet équipement génère, utilise et peut émettre des fréquences radio et, s'il n'est pas installé et utilisé conformément aux instructions du fabricant, peut causer des interférences nuisibles aux communications radio.*

*Rien ne garantit cependant que l'interférences ne se produira pas dans une installation particulière. Si cet équipement provoque des interférences nuisibles à la réception radio ou de*

télévision, qui peut être déterminé en comparant et en l'éteignant, l'utilisateur est encouragé à essayer de corriger les interférences par une ou plusieurs des mesures suivantes:

- Réorienter ou déplacer l'antenne de réception.
- Augmenter la distance entre l'équipement et le récepteur.
- Branchez l'appareil dans une prise sur un circuit différent de celui auquel le récepteur est connecté.
- Consulter le vendeur ou un technicien radio / expérimenté.

Les changements ou modifications à cet appareil sans expressément approuvée par la partie responsable de conformité pourraient annuler l'autorité de l'utilisateur de faire fonctionner cet équipement.

Cet équipement est conforme aux limites d'exposition au rayonnement de la FCC/ISD établies pour un environnement non contrôlé. Les utilisateurs finaux doivent suivre les instructions d'utilisation spécifiques pour

satisfaire à la conformité à l'exposition aux RF. Cet émetteur doit se trouver à au moins 20 cm de l'utilisateur et ne doit pas être co-localisé ou exploité conjointement avec un autre antenne ou émetteur.

The required notices are specified in the RSS documents (including RSS-Gen) applicable to the equipment model. **These notices are required to be shown in a conspicuous location in the user manual for the equipment, or to be displayed on the equipment model. If more than one notice is required, the equipment model(s) to which each notice pertains should be identified.** Suppliers of radio apparatus shall provide notices and user information in **both English and French.**

This device complies with Industry Canada license-exempt RSS-standards(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

*Cet appareil est conforme avec Industrie Canada exempt de licence Rss standard(s). Son fonctionnement est soumis aux deux conditions suivantes:*

- (1) cet appareil ne peut causer d'interférence, et*
- (2) cet appareil doit accepter toute interférence, y compris des interférences qui peuvent provoquer un fonctionnement indésirable du périphérique.*

RSS-GEN 6.8 Statement.

This radio transmitter 11625A-FMMT 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.

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The antenna to be used with this device is a Linx ANT-916-WRT-UFL. Maximum power transmitted with this antenna is tested as 6.06 dBm EIRP.

Déclaration RSS-GEN 6.8.

Cet émetteur radio 11625A-FMMT a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antennes énumérés ci-dessous, avec le gain maximal admissible indiqué. Les types d'antennes non inclus dans cette liste qui ont un gain supérieur au gain maximal indiqué pour n'importe quel type répertorié sont strictement interdits pour l'utilisation avec ce périphérique.

*L'antenne à utiliser avec ce dispositif est un Linx ANT-916-WRT-UFL. La puissance maximale transmise avec cette antenne est testée comme 6.06 dBm EIRP.*

## 2 Operation

### 2.1 Installation Information

The FMM-T comes fully assembled from the factory. To activate the unit the lid must be removed, and the two battery tabs pulled. After this, the unit can be reassembled and placed in the facility where needed by using the magnetic feet.

Note: for best range the red arrow should be aligned with the primary direction of travel for the area.

#### 2.1.1 Inoperability Warning

There are no inoperability warnings.

### 2.2 Charging

The FMM-T batteries are non-rechargeable and should be disposed of properly.

### 2.3 Alerts

The FMM-T Module does not directly give any alerts.

### 2.4 Maintenance

The FMM-T can send an alert through the REM Data System when the batteries begin to get low. When this occurs, the batteries should be replaced. No other maintenance is required.

### 2.5 Adjustments

The FMM-T does not allow for tuning or adjustments to be made by the end user.

### 2.6 Interferences

The FMM-T may receive false signals from some low frequency devices including high voltage lines and equipment. Such devices will need to be moved further away from the FMM-T. If the devices may not be moved, then the FMM may need to be placed in a different area.

## 2.7 RF Module Specifications

Part Number: FMM-T

Size: 7.2"x4.75"x4" / 18.2cm x 12cm x  
10.1cm

Weight: 10oz / 280 g

Input Voltage: 3.6V

Magnetic Field Frequency: none

Transceiver: Microchip Model MRF89XA

Transceiver: Transmit/Receive Frequency: 917.25 MHz

Transmitter Power: 0.001 W (typical)

Operating Temperature Range: -30°C to + 70°C ; -22°F to 158°F

## 3 Revision History

### 3.1 Version 1.0 – July 20, 2023

Original Release. No revision history.