Frederick Energy Products RF Module HIT-NOT Proximity System User Manual

Contents

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Overview

The Radio Transceiver Module (RF Module) is a daughter board device that is mounted internally to the Magnetic Field Generator (MFG)/ Collision Avoidance Module (CAM) stack. It uses a Linx ANT-916-WRT-UFL antenna to send and receive messages to/from other HitNot Devices.

Theory of Operation

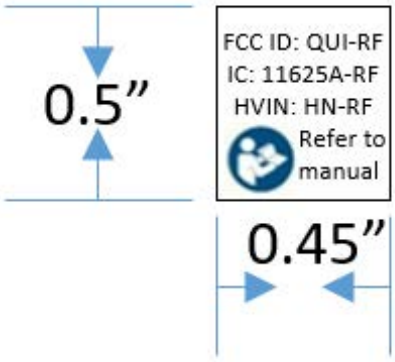
The Radio Transceiver Module (model HN-RF) is a modular device that mounts inside the Magnetic Field Generator (MFG). The module mounts via a 16-pin header and is secured in place with a through hole screw and nylon insert nut. A whip antenna mounted to the lid of the MFG connects to the antenna port of the RF module allowing it to send and receive messages to other HitNot Devices.

Frequency of Operation

The RF Module is a 916.48 MHz Transceiver.

Label Information

The label is located on the top corner of the board opposite of the antenna and header.



FCC/IC Information

The FCC ID for the RF Module is QUI-RF 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 RF Module 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.

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.

RSS-GEN 6.8 Statement.
This radio transmitter 11625A-RF 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.

The antenna to be used with this device is a Linx ANT-916-WRT-UFL. Maximum power transmitted with this antenna is -2.76 dBm with a required impedance of 50 ohms.

Operation

Installation Information

The RF Module comes pre-installed into all MFG units from the factory and do not require further modification from the end user.

Inoperability Warning

There are no inoperability warnings.

Charging

The RF Module does not require charging. It gets power supplied directly from the MFG when powered on.

Alerts

The RF Module does not directly give any alerts.

Maintenance

No routine maintenance is required for the RF Module.

Adjustments

The RF module does not allow for tuning or adjustments to be made by the end user.

Interferences

The RF Module may receive false signals from some RF-based devices including high power radios and cell phones. Such devices will need to be moved further away from the generator. If the devices may not be moved, then the path may need to be marked to indicate areas of interference of the system. If possible, the route may need to be changed.

RF Module Specifications

Part Number: HN-RF
Size: 1.5” x 1.75” / 3.8cm x 4.4cm
Weight: 1oz / 28 g
Input Voltage: 5V

Magnetic Field Frequency: none
Transceiver: Microchip Model MRF89XA
Transceiver: Transmit/Receive Frequency: 916.48 MHz
Transmitter Power: 0.001 W (typical)
Operating Temperature Range: -30°C to + 70°C ; -22°F to 158°F

Revision History

Version 1.0 – December 22, 2021

Original Release. No revision history.

US7,420,471; US8,169,335; US8,232,888; US5,939,986; US6,810,353; AU2005289704; ZA2007/02919; ZA2008/02673; ZA2010/06816, ZA2010/09068 Patent Pending

Documents / Resources

Frederick Energy Products RF Module HIT-NOT Proximity System [pdf] User Manual
RF, QUI-RF, QUIRF, RF Module for HIT Not Products, Module for HIT Not Products, HIT Not Products, Not Products, RF Module HIT-NOT Proximity System, HIT-NOT Proximity System