



# RECON Dynamics

## MultiRadlet Module

## User Guide v1.0

**Model: P1-0110-00, P1-0110-01, P1-0110-02, P1-0110-03**

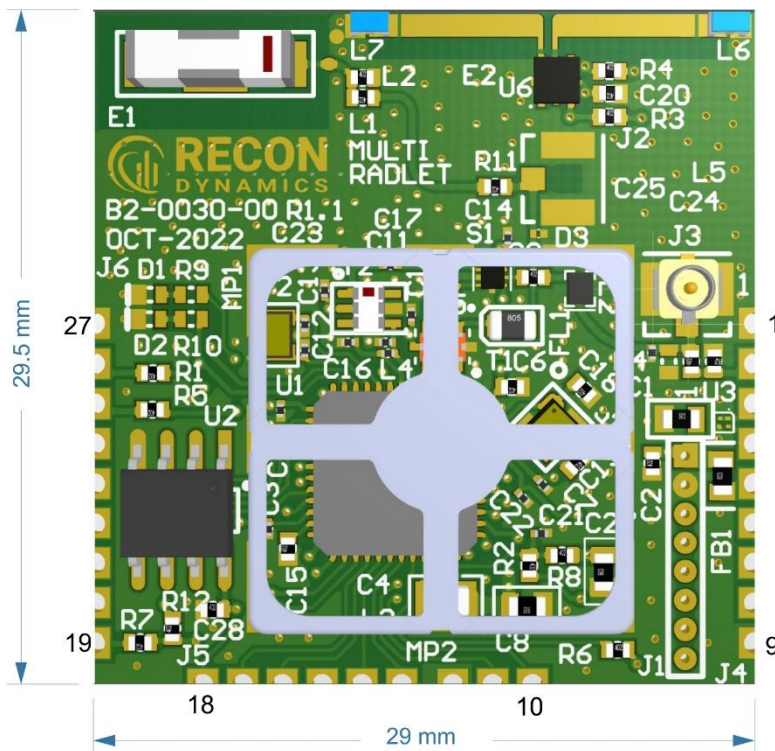
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## MultiRadlet Module

The MultiRadlet Module enables remote environmental monitoring and other types of devices to send data wirelessly to RECON Dynamics base stations to be forwarded to the cloud over the cellular network. The host system can send data messages over the module's UART to be transmitted. **The MultiRadlet module is for internal use only at Recon Dynamics. It is not intended to be sold to third parties without being installed and tested on host boards and shipped as finished products.**

## Usage



### Power Decoupling

Use a 1uF ceramic capacitor between Vin (pin 3) and Gnd. Connect LDO\_OUT (pin 4) to VCC (pin 5).

### RF Out Pin

Pin 2 is the 900MHz RF TX/RX and is only to be used with the helical antenna that is part of the POD host board. No other host board is certified to use this pin of the MultiRadlet module. All other certified antennas are external and connect to the J3 for 900 MHz and J2. To use external antenna at 00 MHz J2 U.fl connector must be loaded and C23, L5 unloaded. This corresponds to part numbers P1-0110-01 and P1-0110-02.

| Pin   | Description         |
|-------|---------------------|
| 1     | GND                 |
| 2     | RF Out (-00, -03)   |
| 2     | NC (-01, -02)       |
| 3     | Vin 3.3-3.6V        |
| 4     | LDO_OUT 3.0V        |
| 5     | VCC (tie to pin 4)  |
| 6     | NC/GPIO             |
| 7     | RESET_N (Pulled up) |
| 8     | IO0                 |
| 9     | GND                 |
| 10-11 | NC/GPIO             |
| 12    | GND                 |
| 13-14 | NC/GPIO             |
| 15    | GND                 |
| 16-18 | NC/GPIO             |
| 19    | Program Enable      |
| 20    | NC                  |
| 21-22 | NC/GPIO             |
| 23    | LED_2               |
| 24    | LED_1               |
| 25    | UART_RXD            |
| 26    | UART_TXD            |
| 27    | GND                 |

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## RF 2.4GHz Operations

Part numbers P1-0110-00, P1-0110-01 use the 2.4 GHz antenna on the MultiRadlet E1. Part numbers P1-0110-02, P1-0110-03 has R11 removed and J2 U.fl connector loaded to use external antennas.

## Certified Antennas

All antennas must be 20cm away from the human body for RF exposure compliance

| Model Number        | Description            | Band    | Port                                    |
|---------------------|------------------------|---------|-----------------------------------------|
| G-NiceRF SW915-TH12 | Wound wire             | 900 MHz | RF Pin 2 to POD host board in enclosure |
| L-Com HG2415U       | 15 dBi Omnidirectional | 2.4 GHz | J2, U.fl                                |
| L-Com RE14P         | 14 dBi Patch           | 2.4 GHz | J2, U.fl                                |
| L-Com HG908UP       | 8 dBi Omnidirectional  | 900 MHz | J3, U.fl                                |
| L-Com HG908P-RTP    | 8 dBi Patch            | 900 MHz | J3, U.fl                                |

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## Appendix A

### Regulatory

#### **FCC ID: YQN-B2-0027**

This device complies with part 15 of the FCC rules. 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. Any changes or modifications not expressly approved by manufacturer could void the user's authority to operate the equipment.

**IMPORTANT!** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

#### **47 CFR 15.505- FCC**

##### **Class B**

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

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 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/ TV technician for help.

#### **FCC Radiation Exposure Statement**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

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**Canada IC: 28514-B20027**  
CAN ICES-3(A)/NMB-3(A)

This device complies with Part 15 of the FCC Rules. This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(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.

Cet appareil contient un ou plusieurs émetteurs/récepteurs exempts de licence conformes aux RSS exempts de licence d'Innovation, Sciences et Développement économique Canada. Son fonctionnement est soumis aux deux conditions suivantes :

- (1) cet appareil ne doit pas causer interférences nuisibles et
- (2) cet appareil doit accepter toute interférence reçue, y compris les interférences susceptibles de provoquer un fonctionnement indésirable.

This Class B digital apparatus complies with Canadian ICES-003.  
Cet appareil numérique de classe B est conforme à la norme NMB-003

**ISED Radiation Exposure Statement**

Radiation Exposure Statement: This equipment complies with the IC RSS-102 radiation exposure limits set forth for an uncontrolled environment.

Énoncé d'exposition aux rayonnements: Cet équipement est conforme aux limites d'exposition aux rayonnements ioniques RSS-102 Pour un environnement incontrôlé