User's Manual

FCC warning:

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.

Canada (IC) warning:

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:

a. This device may not cause interference, and
b. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux RSS exemptés de licence d'Innovation, Sciences et Développement économique Canada. L'exploitation est soumise aux deux conditions suivantes :

1. Ce dispositive ne peut causer des interferences, et
2. Ce dispositive doit accepter toute interference, y compris les interferences qui peuvent causer un mauvais fonctionnement du dispositive.

RF Exposure and Separation Distance:

For safe operation, the minimum separation distance should be 20cm.

Pour un fonctionnement en toute sécurité, la distance de séparation minimale doit être de 20 cm.

Note:

The modular transmitter is only FCC authorized for the specific rule parts listed on the grant, and the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.
If the product is being marketed as Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuity), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

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Note: *The Sundance device is used internally for Everactive products and services – it is not sold separately to other customers. The following User's Guide is an instruction set used to program and control Sundance to prepare it for integration with Everactive products or troubleshooting.*

Hardware needs:
1. Wake-up dongle with programmed firmware image
2. Window 10 PC w/ USB port
3. JLink programmer

Connecting the DUT to your PC:

Connect the JLink programmer to the USB serial port on your PC or a USB-powered HUB. The Sundance module can remain physically connected inside the larger Everactive gateway unit (see figure below).
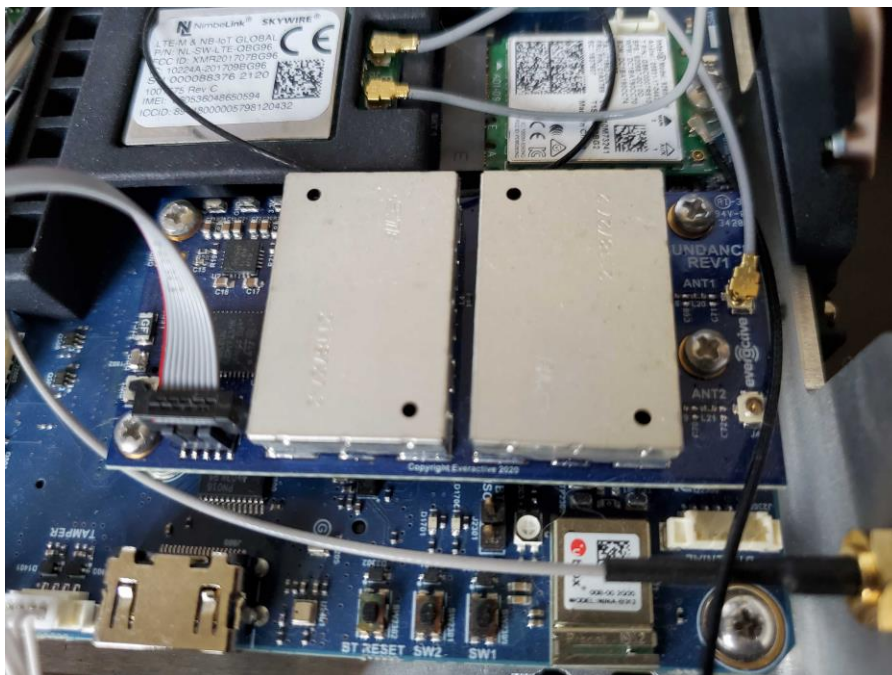

Figure 1: A Sundance module in an Everactive gateway with JLink cable attached

Operating the Wake-up Dongle using Python:

Install the python package (internal to Everactive)

- `pip3 install -i http://python-registry.psikick.com --trusted-host python-registry.psikick.com wakeup_device`

Upgrade the wakeup-device package directly from the internal python registry

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- `pip3 install --upgrade -i http://python-registry.psikick.com --trusted-host python-registry.psikick.com wakeup_device`

Open a command line prompt to run commands to configure Boomerang

Run `wu_fcc --h` to see configuration options


```
optional arguments:
  -h, --help           show this help message and exit
  --serport SERPORT    COM/ttyACM port number such as 0 or 1
  --type TYPE          Select device type, ramcharger or boomerang
  --search             Search for a commm port
  --passive            Receive only mode
  --cw                 Send a CW waveform
  --wu                 Send wakeups
  --channels CHANNELS  A list of channels to swap between '0, 10, 20, 49'
  --rate RATE          Fixed point value of send rate between devices
  --logging            Enable logging
  --pktsize PKTSIZE    Length of packet to send.
  --power POWER        Select tx power
```

Figure 2: List of configuration options

Run the script starting with `wu_fcc` followed by the commands to program the transceiver.

The wakeup.py script can operate the following functions:
- Vary transmit output power
- Hop across all channels
- Sweep all channels
- Specify channels
- Receive packets

Example: See configuration options: wu_fcc --h
Example: Send a wake-up message: wu_fcc --search --wu --power 30

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Host Labeling Instructions
Place on exterior of host where visible to the end user.

Contains FCC ID: 2AO7C-83000023
Contains IC: 23743-83000023

Antenna Information
Approved Antennas
1. Laird 902 MHz – 928 MHz Waterproof Dipole 2 dBi Antenna, IP67

Installation Notes
The modular transmitter is permanently attached inside an enclosure and the entire process is controlled by Everactive. The external antenna is mounted using a reverse polarity SMA connector.

Integration instructions
Everactive will use a reverse-SMA to attach the external antenna at the exterior of the host unit