



## 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:

Canada Low-power license-exempt radio communication devices (RSS-247)

1. Common information 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
  
2. Informations communes  
Son fonctionnement est soumis aux deux conditions suivantes:
  - a. Ce dispositif ne peut causer des interférences, et
  - b. Ce dispositif doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement du dispositif.

### 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 Boomerang 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 Boomerang 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

Connecting the DUT to your PC:

Connect the DUT to a USB 3.0 port on your PC or a USB-powered HUB. A green LED will blink while the DUT establishes a COM port. The COM port can be found in the Device Manager under USB Serial Device. At this point you should be ready to run commands.

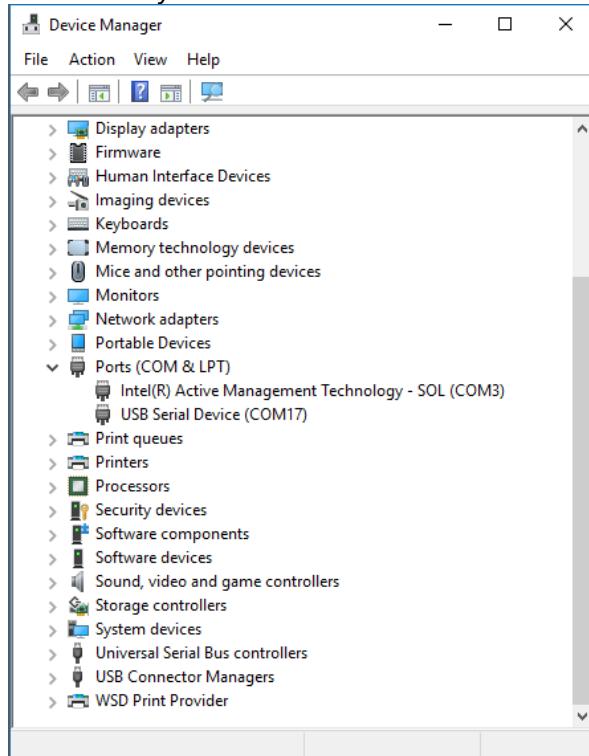


Figure 1: Device Manager

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



ann arbor   charlottesville   santa clara

- 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`

The LED on the wake-up dongle will light up when a transmission is successfully sent. See image below:



Figure 3: CN Dongle operating (as seen via LED)