Powering Piksi Multi

Caution: Piksi Multi uses a powerful processor that can generate a significant amount of heat. Use caution when handling the board, as components may reach upwards of 140° F (60° C).

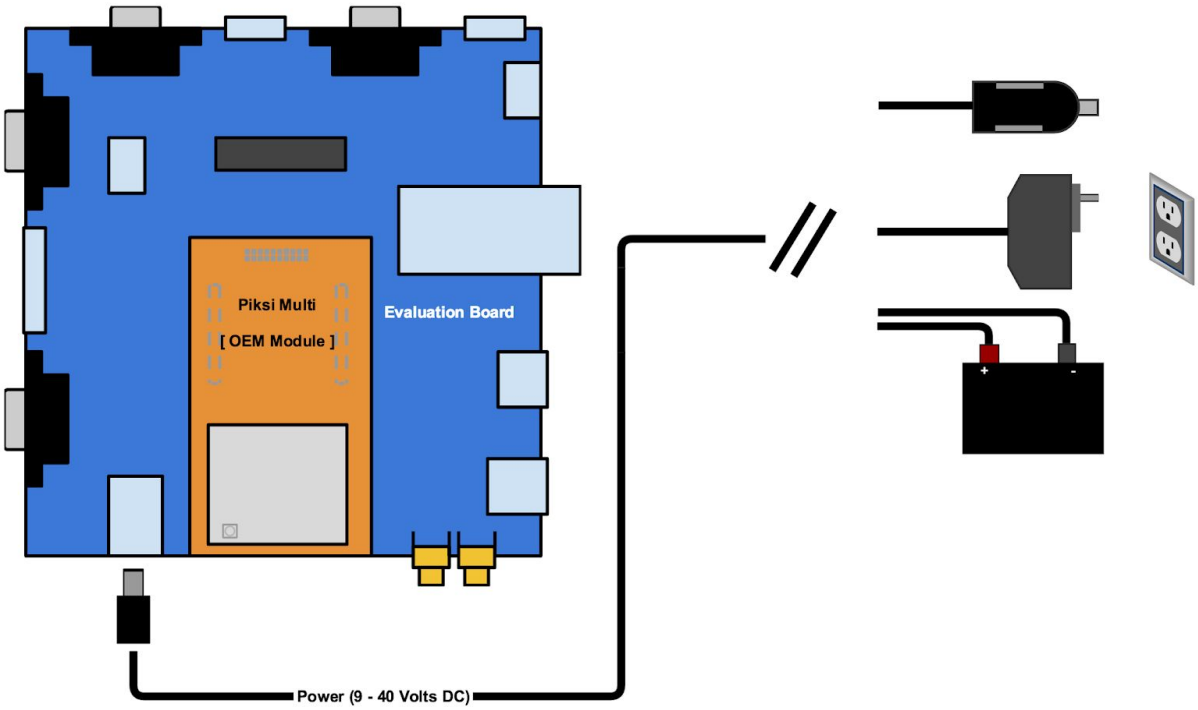
Overview

Piksi® Multi can be powered from a different sources. This article describes few possible options.

Power supply voltage ranges:

- Piksi Multi GNSS Module: 5 to 15 V DC
- Piksi Multi Evaluation Board: 9 to 40 V DC

For test and evaluation, it is recommended to use the Piksi Multi Evaluation Board for convenience which is powered via a 5.5/2.1 mm barrel jack. In the field, we have a variety of recommendations for powering the evaluation board.



From a Portable Rechargeable Battery

There are many small rechargeable batteries with 2.1 mm DC jacks. We recommend the following product: http://a.co/bkBHS6R . This should provide a few hours of field time for the evaluation kit and will plug directly into the evaluation board.

From a Vehicle

Included with the Piksi Multi Evaluation Kit is a 12 Volt “cigarette lighter” style plug for vehicle sockets. This is the perfect power strategy for vehicle based testing and evaluation.

From a "Jump Pack"

This same 12 Volt power adapter can be used with the “jump pack” style consumer power packs with 12 V sockets which are readily available at any automotive store.

Here are a few models to consider:

- http://a.co/20Vz1SJ
- http://a.co/j708gyO
- http://www.autozone.com/test-scan-and-specialty-tools/battery-booster-jump-starter-pack/duralast-jump-starter/193250_0_0/

From an AC wall outlet

Included in the module pack is a worldwide AC power adapter. Coupled with an extension cord or an outdoor weatherproof outlet, it is possible to power your Piksi evaluation board from the wall during test and evaluation. This is especially convenient for the base station. One good approach is to place the base station antenna on the building roof or a point away from the building but power the base station from the wall.

From Your Own Battery or Power Source

The Piksi Multi Evaluation Kit includes a short power adapter cable that can be used to plug into your own battery or DC power source. You could consider making a cable for hobby grade batteries with XT60 connectors or similar connectors, or creating a cable with alligator clips for use on a car or lantern battery.

Without the Evaluation Board

If you are unable to use the evaluation board in your testing and evaluation, a clean DC power source is recommended that cannot exceed the module max voltage of 15 Volts. A 6 Volt supply is recommended and is the voltage used on the evaluation board. On the low end of the power range (at 5 Volts and down to 4.75 Volts), the DC bias for the antenna begins to drop, so a 5 V DC power source this is not recommended for antennas that need at least 4.5 Volts DC bias for operation.
This DC power source can be connected through the ribbon cable supplied in the in module accessory pack.

For robot and UAV applications, it is recommended to power the Piksi Multi module from main DC power bus rather than a 5 V supply on the vehicle provided it meets the specifications. Do not power the Piksi Multi module from a PWM output of a motor controller.

Exceeding Piksi Multi supply voltage beyond 15.0 V will damage the board and such damage is not covered by the warranty.