CLAIMS

What is claimed is:

1. An aerial vehicle electrical power system comprising:

an aerial vehicle;

a plurality of light-emitting diodes (LEDs) carried by the aerial vehicle;

at least one electrical circuit carried by the aerial vehicle, wherein the at least one electrical circuit has a DC buck converter electrically in series with at least a portion of the plurality of LEDs; and

a tether connected between the aerial vehicle and a power source positioned remote from the aerial vehicle, wherein electrical power is transmitted to the aerial vehicle and at least a portion of the plurality of LEDs through the tether.

2. The system of claim 1, further comprising at least one resistance device electrically in parallel to the DC buck converter.

3. The system of claim 2, wherein the at least one resistance device further comprises an amperage boost regulator, wherein the amperage boost regulator comprises at least one of: a resistor or an LED.

4. The system of claim 3, wherein when a voltage received through the tether across the DC buck converter approaches a maximum input voltage level of the DC buck converter, the amperage boost regulator draws greater amperage thereby causing a voltage drop, wherein an input voltage remains below the maximum voltage level of the DC buck converter.

5. The system of claim 4, wherein a voltage received through the tether, minus the voltage loss from the portion of the plurality of LEDs in series with the DC converter, is within a voltage range of the DC converter.

6. An aerial vehicle electrical power system comprising:

an aerial vehicle;

a plurality of light-emitting diodes (LEDs) carried by the aerial vehicle;

at least one electrical circuit carried by the aerial vehicle, wherein the at least one electrical circuit has a DC buck converter electrically in parallel with an amperage boost regulator; and

a tether connected between the aerial vehicle and a power source positioned remote from the aerial vehicle, wherein electrical power is transmitted to the aerial vehicle and at least a portion of the plurality of LEDs through the tether.

7. The system of claim 6, wherein the amperage boost regulator has at least one of: a resistor or an LED.

8. The system of claims 6 or 7, wherein when a voltage received through a tether of the tethered aerial vehicle approaches a maximum voltage level of the DC buck converter, the amperage boost regulator draws greater amperage thereby causing a voltage drop, wherein an input voltage remains below the maximum voltage level of the DC buck converter.

9. The system of claims 6, 7, or 8 wherein the DC buck converter is connected electrically in series with at least a portion of the plurality of LEDs.

10. The system of claim 9, wherein a voltage received through a tether of the tethered aerial vehicle, minus the voltage loss from the portion of the plurality of LEDs which are series with the DC buck converter, is within a voltage range of the DC buck converter.

11. A method for powering an aerial vehicle carrying lights, the method comprising:

providing an aerial vehicle having a plurality of light-emitting diodes (LEDs) mounted thereto;

connecting a tether between the aerial vehicle and a power source located remote from the aerial vehicle surface; and

transmitting a quantity of electrical power through the tether, wherein the quantity of electrical power is transmitted through at least one electrical circuit carried by the aerial vehicle, wherein the at least one electrical circuit has a DC buck converter electrically in series with at least a portion of the plurality of LEDs.

12. The method of claim 11, further comprising electrically connecting at least one resistance device in parallel to the DC buck converter, wherein the at least one resistance device regulates amperage variances across the at least one electrical circuit.

13. The method of claim 12, wherein the at least one resistance device further comprises an amperage boost regulator, wherein the amperage boost regulator comprises at least one of: a resistor or an LED, and wherein amperage is drawn by the amperage boost regulator when a voltage received through the tether approaches a maximum voltage level of the DC buck converter, thereby causing a voltage drop, wherein the voltage remains below the maximum voltage level of the DC buck converter.

14. The method of claim 13, wherein a voltage received through the tether, minus the voltage loss from the portion of the plurality of LEDs in series with the DC buck converter, is within a voltage range of the DC buck converter.

15. The method of claims 13 or 14, wherein when the aerial vehicle draws more power, the DC buck converter draws more amperage, thereby causing an input voltage, as measured across the DC buck converter, to decrease, whereby the amperage boost regulator receives a lower voltage and increases resistance, thereby decreasing the amperage used by the amperage boost regulator.