Claims

1. A power supply circuit comprising:

a power switch configured to activate one of a primary power source or a secondary power source based on a state of charge of the secondary power source;

wherein the primary power source is configured to, when activated, power a low power component having a clock signal generator configured to generate a clock signal; and

wherein the secondary power source is configured to, when activated, power the low power component having the clock signal generator and a high power component; and

a clock switch configured to provide the clock signal from the clock signal generator of the low power component to the high power component based on the state of charge of the secondary power source;

wherein, when the state of charge of the secondary power source is below a predetermined threshold, (i) the power switch is configured to deactivate the secondary source and activate the primary power source and (ii) the clock switch is configured to disconnect the clock signal generator from the high power component.

2. The power supply circuit of claim 1, further comprising;

a power monitor configured to generate an indicator signal indicative of whether the state of charge of the secondary power source exceeds the predetermined threshold and further configured to provide the indicator signal to at least one of the power switch or the clock switch.

3. The power supply circuit of claim 2, wherein the power switch is configured to activate one of the primary power source or the secondary power source based on the indicator signal.

4. The power supply circuit of claim 2, wherein the clock switch is configured to provide the clock signal to the high power component based on the indicator signal.

5. The power supply circuit of claim 1, wherein the clock switch is configured to provide the clock signal to the high power component by connecting the clock signal generator to the high power component.

6. The power supply circuit of claim 5, wherein the clock signal generator comprises an oscillator.

7. The power supply circuit of claim 1, wherein the power switch is configured to activate the secondary power source when the state of charge of the secondary power source exceeds the predetermined threshold.

8. The power supply circuit of claim 1, wherein the clock switch is configured to provide the clock signal to the high power component when the state of charge of the secondary power source exceeds the predetermined threshold.

9. The power supply circuit of claim 1, wherein the power switch is configured to activate one of the primary power source or the secondary power source by connecting the one of the primary power source or the secondary power source to the low power component.

10. The power supply circuit of claim 1, wherein each of the primary power source and the secondary power source is a battery.

11. The power supply circuit of claim 1, wherein the secondary power source is a rechargeable battery.

12. The power supply circuit of claim 1, wherein a voltage of the primary power source is lower than a voltage of the secondary power source.

13. The power supply circuit of claim 1, further comprising:
the primary power source; and
the secondary power source.

14. A wearable device comprising:
a low power component having a clock signal generator configured to generate a clock signal;
a high power component; and
a power supply circuit comprising:
a power switch configured to activate one of a primary power source or a secondary power source based on a state of charge of the secondary power source;

wherein the primary power source is configured to, when activated, power the low power component having the clock signal generator; and

wherein the secondary power source is configured to, when activated, power the low power component having the clock signal generator and the high power component; and

a clock switch configured to provide the clock signal from the clock signal generator of the low power component to the high power component based on the state of charge of the secondary power source;

wherein, when the state of charge of the secondary power source is below a predetermined threshold, (i) the power switch is configured to deactivate the secondary source and activate the primary power source and (ii) the clock switch is configured to disconnect the clock signal generator from the high power component.

15. The wearable device of claim 14, wherein the low power component comprises a time-keeping module.

16. The wearable device of claim 14, wherein the high power component comprises at least one of a microcontroller unit or an integrated circuit.

17. A method for providing power supply to a wearable device, the method comprising:

activating one of a primary power source or a secondary power source based on a state of charge of the secondary power source, using a power switching circuit;

wherein when activated, the primary power source powers a low power component having a clock signal generator configured to generate a clock signal; and

wherein when activated, the secondary power source power the low power component having the clock signal generator and a high power component; and

providing the clock signal from the clock signal generator of the low power component to the high power component based on the state of charge of the secondary power source, using a clock switch;

wherein, when the state of charge of the secondary power source is below a predetermined threshold, (i) the power switching circuit deactivates the secondary power source and activates the primary power source and (ii) the clock switch disconnects the clock signal generator from the high power component.