AsahiKASEI MICRODEVICES

AP4473

Ultra-Low Power Step-up DC/DC Converter for Energy Harvesting Applications

The **AP4473** is an ultra-low consumption power management chip that integrated a step-up DC/DC converter and hysteresis comparators. The AP4473 requires only 15mV (typical) input to start boosting using an external transformer.

The input voltage V_{IN} is boost-converted and stored in an external storage, and the voltage is monitored by the built-in comparators (COMP1, 2). The AP4473 has a built-in switch that can control the power supply for the external system while protecting external capacitors (storage), and the external system. When the voltage of the storage reaches V_{DETH2} (3.3V), it automatically starts supplying power to the external system and stops supplying power when the voltage drops to V_{DETL2} (2.6V). When the storage voltage rises to V_{DETH1} (3.55V), the over voltage protection is activated.

The AP4473 supplies power to the system from storage, enabling intermittent operation of a high-load system by low input power.

Step-up circuit that activates from ultra low power

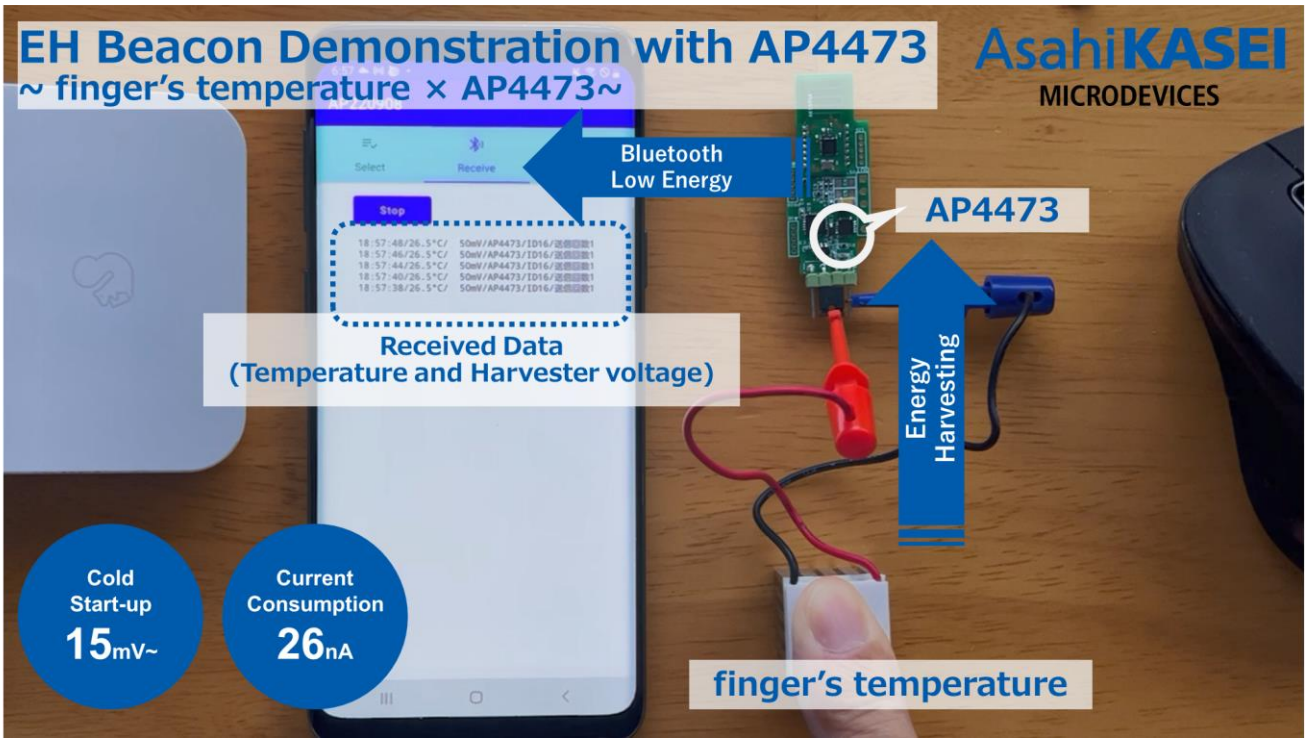
- ☐Startup voltage ($V_{IN,STUP}$) : **15mV**
- ☐Input voltage range: ~0.5V
- ☐Diode for rectifier: Internal(External diode available)

Automatic voltage control by monitoring the voltage of storage

- ☐Power supply (COMP2): Start to output over V_{STRG} =3.3V/Stop to output under V_{STRG}=2.6V
- ☐Over Voltage Protection: 3.55V
- ☐Current Consumption (COMP1, 2): **26nA** (Total 52nA)
- ☐Rated voltage: ~5.5V

Others

- ☐Built in Power Good function
- ☐Operation temperature : -30 ~ +85ºC
- ☐Package : 20-pin HWQFN (3.0mm×3.0mm 0.5mm pitch)



Beacon demonstration with AP4473 and finger's temperature (No power supply)