

The **AP4470** is an ultra-low consumption power management chip that integrates a step-up DC/DC converter and hysteresis comparators. The AP4470 requires only 0.20V input to start boosting without the need for an external transformer. The AP4470 has hysteresis operation switch that can control the power supply for target devices (sensors, wireless modules, LEDs) while protecting external storage (capacitors), and the target.

1 $\mu$ W DC input is enough to startup the AP4470. Converted output is stored to external storage device and the AP4470 monitors the device. When the voltage of external storage reaches 3.3V, the AP4470 automatically starts supplying to the target device and stops supplying if the voltage drops down to 2.6V. Overvoltage protection function works at 3.55V.

The AP4470 is ideally suited for several  $\mu$ W to several mW sources energy harvesting. This provides a self-powered wireless sensor node with simple hardware design.

**Step-up circuit that activates from ultra low power**

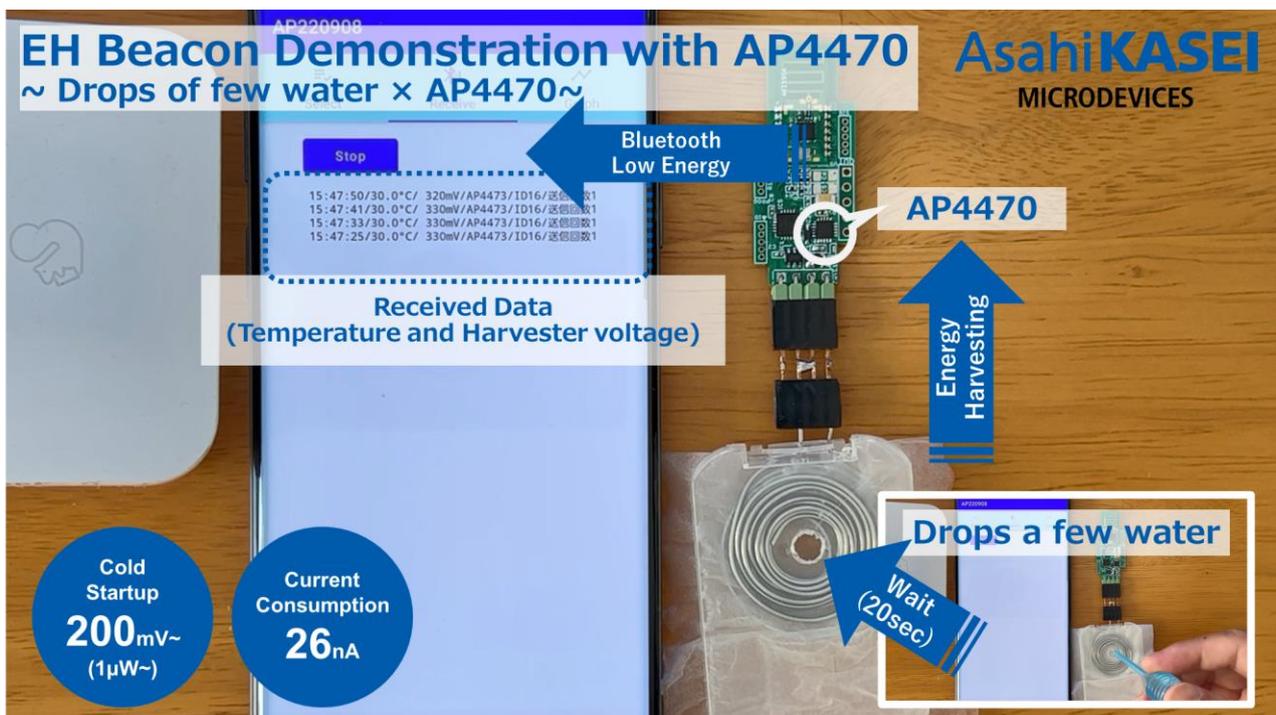
- Startup voltage ( $V_{IN,STUP}$ ) : **200mV (1  $\mu$ W)**
- Input voltage range: ~1.0V
- Diode for rectifier: Internal(External diode available)

**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 ~ +85 $^{\circ}$ C
- Package : 20-pin HWQFN (3.0mm $\times$ 3.0mm 0.5mm pitch)



**Beacon demonstration with AP4470 and a few drops of water (No power supply)**