

Energy-extracted circuit technology for green energy sources and ultralow-power SOI circuit technology with 1-mW level power dissipation provide self-powered operation of mobile equipment. A variable-stage switched-capacitor-type DC-DC converter scheme makes it possible to supply a constant voltage to LSIs for green energy sources. A 1-V 300-MHz-band voltage-controlled SAW oscillator circuit and a 0.5-V CPU fabricated with 0.35- μm FD-SOI process are described. We verify the effectiveness of these circuits at self-powered wireless mobile system.