

# Single Cell Li-Battery and Power System Management IC

## FEATURES

### • Battery Management

- Operation Voltage:  
2.9V~6.3V (AMR: -0.3V~15V)
- Configurable Intelligent Power Select system
- Current and voltage limit of adaptive USB or AC adapter input
- The resistance of internal ideal diode lower than 100mΩ

### • Full-integrated Charger

- 1.4A charge current with built-in MOSFET
- Battery temperature monitor
- USB-Compatible charger
- High precision as 0.5%
- support 4.1V/4.15V/4.2V/4.36V battery
- Charging process control automatically
- LED driver to indication the charging status
- Auto adjust the charging current according to the system load

### • Backup Battery

- Provide power to RTC module by using the backup battery
- Integrated an backup battery charger

### • 3 Synchronous Step-Down Converters

- DC-DC1: can be adjusted between 0.7V~3.5V  
25mV/step, 1.2A drive capability
- DC-DC2: can be adjusted between 0.7V~2.275V  
25mV/step, 1.6A drive capability, support VRC
- DC-DC3: can be adjusted between 0.7V~3.5V  
25mV/step, 0.7A drive capability

### • 4 LDO's

- LDO1:30mA,always on
- LDO2:low noise LDO, can be adjusted between 1.8V~3.3V,100mV/step, 200mA drive capability
- LDO3:low noise LDO, can be adjusted between 1.8V~3.3V,100mV/step, 200mA drive capability
- LDOIO0: low noise LDO, can be adjusted between 1.8V~3.3V,100mV/step, 50mA drive capability

### • Signal Capture

- built-in 16 channel 12 Bit ADC
- 4 external input channels
- Built-in high precision coulomb counter and fuel-gauge system
- Wealthily power information, such as the real-time power dissipation (mA or mW), remaining battery status(% or mAh), and remaining battery or charging time
- Low power warning and protection
- Provide temperature information of chip

### • Host Interface

- Host can exchange data with processor by TWSI
- Flexibility to configure the interrupt management
- Multi-function GPIO can be set to IO,PWM ,current sink and other function
- Built-in timer
- Four registers can be used to save the data when system shutdown

### • System Management

- Soft reset or hardware reset
- Support soft shutdown or hardware shutdown, and external wakeup
- Monitoring output voltage, self-diagnostic function
- PWROK is used for system reset
- External power source detect (insert/remove/lack of driving capacity )
- Soft start
- Over voltage protection /under voltage protection (OVP/UVP)
- Over current protection (OCP)
- Over temperature protection (OTP)
- Support OTG VBUS power state setting/monitoring

### • Fully Integration

- high precision internal Reference Voltage (0.5%)
- Built-in MOSFET

**NOTE: VRC, Voltage Ramp Control**

## APPLICATIONS

- Handhold mobile devices  
Smart cell phone, PMP/MP4, digital camera, handhold navigation devices GPS, PDA, digital broadcast TV receiver
- MID(Mobile internet device)
- Digital photo Frame, portable DVD player, UMPC, and UMPC-like , Learning machine
- Application Processor systems
- Other battery and multi-power applications

## DESCRIPTION

The AXP192 provides an easy to use, fully integrated, ultra-flexible power solution for single cell Li-Ion/Li-Polymer battery and multiple-power applications.

AXP192 contains an USB-Compatible charger, 3 Buck DC-DC converter, 4 low dropout linear regulator, voltage/ current / temperature monitor and multi channel 12 - Bit ADC. To ensure power system work stably, AXP192also contains self-protection circuits such as OVP / UVP, OTP and OCP .

The “Intelligent Power Select”(IPS)<sup>™</sup> circuit of AX192 distributes power safely and transparently between the USB, external AC adapter, Li-Battery and the application system. It also allows the application system work without battery or discharged battery.

AXP192 has three input source, including external adapter, USB VBUS input and battery. It also supports use of the rechargeable backup battery.

AXP192 provides TWSI(Two Wire Serial Interface) to communicate with the application processor. Through the interface, processor can enable or disable the outputs, and set the output voltage, as well as get the power status and “fuel gauge” data, High-precision ADC makes it convenient for consumer real-time control and know the system power dissipation, which brings them wonderful experience of device electricity usage that never had before.

# TYPICAL APPLICATION DIAGRAM

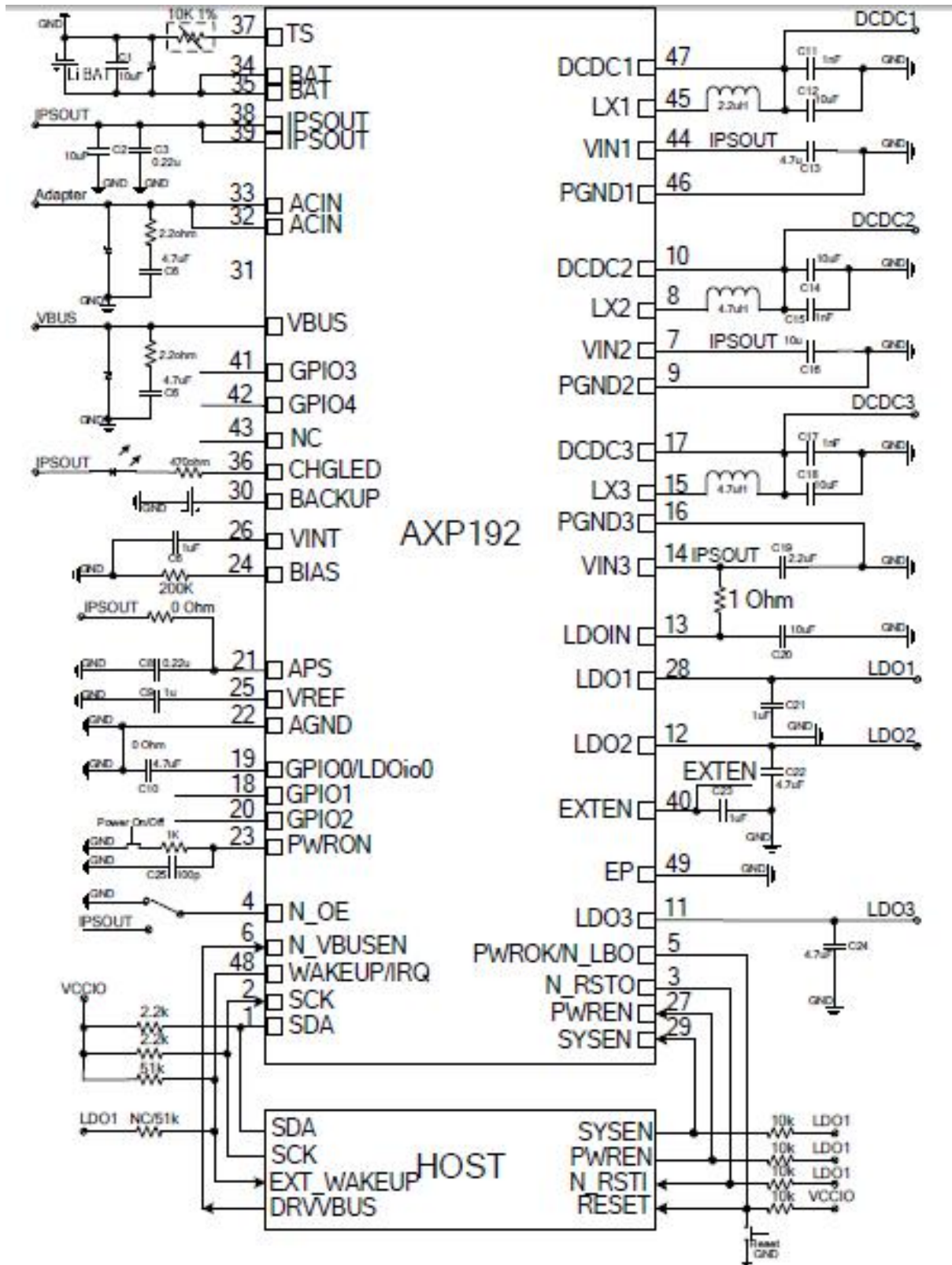
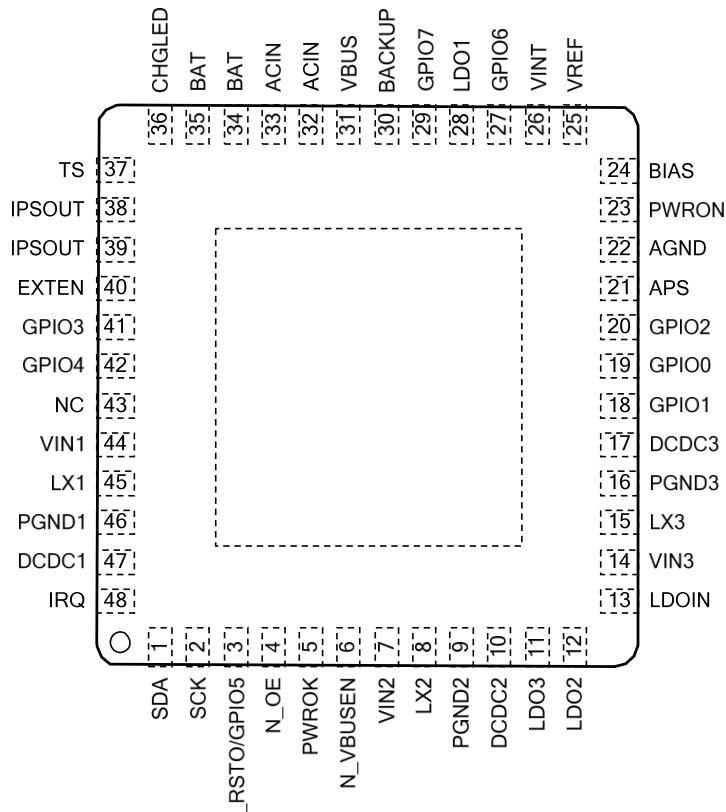


Figure 1. Typical Application Circuit

# PIN CONFIGURATION



**Figure 2. AXP192 Pin Configuration**

## DECLARATION

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