



## 24-Bit Analog-to-Digital Converter (ADC) with Load-cell Power Supply Switch and Battery Voltage Detection for Weigh Scales

### DESCRIPTION

Based on Avia Semiconductor's patented technology, HX712 is a precision 24-bit analog-to-digital converter (ADC) with on chip load-cell power supply switch and battery voltage detection. It's designed for weigh scales and industrial control applications to interface directly with a bridge sensor.

The differential inputs connect to the low-noise programmable gain amplifier (PGA) with a gain of 128, corresponding to a full-scale differential input voltage of  $\pm 20\text{mV}$ , when a 5V reference voltage is connected between REFP and REFN pins. Single-ended battery detection input pin BAT can be connected directly to battery output. On chip load-cell power switch can be used to turn off power supply to load-cell to save system power.

Clock input is flexible. It can be from an external clock source, a crystal, or the on-chip oscillator that does not require any external component. On-chip power-on-reset circuitry simplifies digital interface initialization. There is no programming needed for the internal registers. All controls to the HX712 are through the pins.

### FEATURES

- Selectable differential input or battery detection input
- On-chip low noise PGA with selectable gain of 128
- On-chip MOS power switch for turning off load-cell power supply in system power save mode
- On-chip oscillator requiring no external component with optional external crystal
- On-chip power-on-reset
- Simple digital control and serial interface: pin-driven controls, no programming needed
- Selectable 10SPS or 40SPS output data rate
- Simultaneous 50 and 60Hz supply rejection
- Current consumption:  
normal operation : 1.0mA, power down: < 1uA
- Operation supply voltage range: 2.6 ~ 5.5V
- Operation temperature range:  $-40 \sim +85^{\circ}\text{C}$
- 14 pin SOP-14 package

### APPLICATIONS

- Weigh Scales
- Industrial Process Control

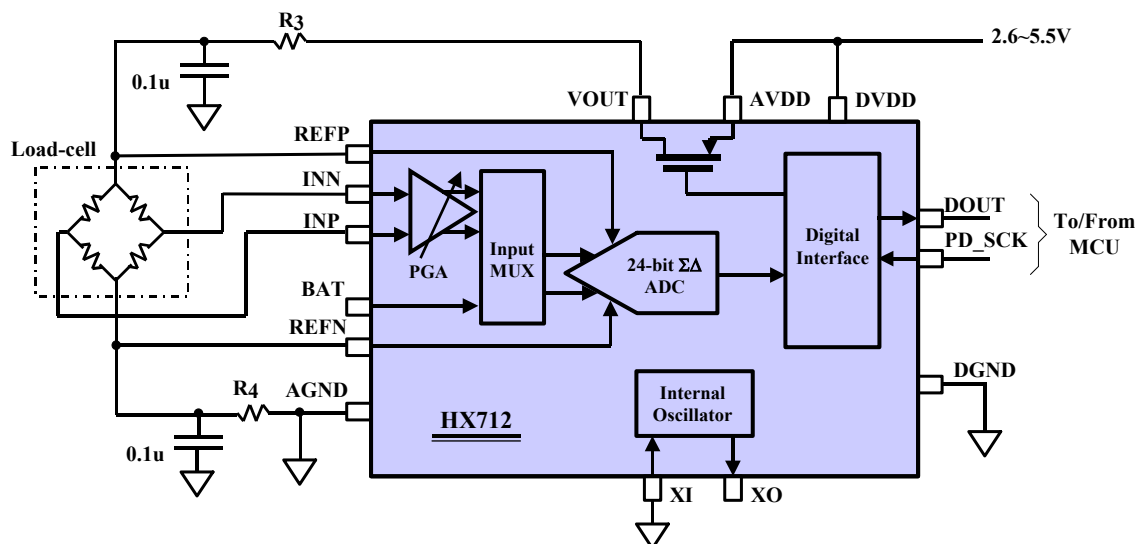


Figure 1 HX712 Block Diagram