

Feature

- Single chip, half duplex 1200 bps FSK modem
- Meets HART physical layer requirements
- Bell 202 shift frequencies of 1200Hz and 2200Hz
- Buffered HART output for drive capability
- Digital signal processing provides reliable input signal detection
- UART interface
- 2.7V to 3.6V power supply
- 85μA maximum supply current in transmit mode
- -55°C to +125°C operation range
- 20pins 5mm x 5mm x 0.75mm TQFN20 package
- RoHS compliant

The SD2085 uses phase continuous Frequency Shift Keying (FSK) at 1200 bps, and operates in half duplex mode per HART protocol. The maximum supply current consumption in transmit mode is 85μA while using 3.6864MHz external Clock source input and 3.6V power supply.

The input HART signal is sampled by an analog to digital converter (ADC), followed by a digital filter and demodulator. This architecture ensures reliable signal detection in noisy environments. A digital to analog converter (DAC) is used to output 1200Hz and 2200Hz phase continuous trapezoid waveforms.

General Description

The SD2085 is a CMOS single chip modem IC used in Highway Addressable Remote Transducer (HART) field instruments and masters. This IC integrates all necessary filtering, signal detection, modulating, demodulating, and HART signal wave shaping functions. Thus it requires few external passive components to satisfy the HART physical layer requirements.

Required board space is very small because of the 5mm x 5mm QFN package and very few external components needed, making it ideal for line-powered applications in both master and slave configurations.

Ordering Information

Package	Part Number
QFN20 5mm x 5mm	SD2085

Pin Diagram and Descriptions

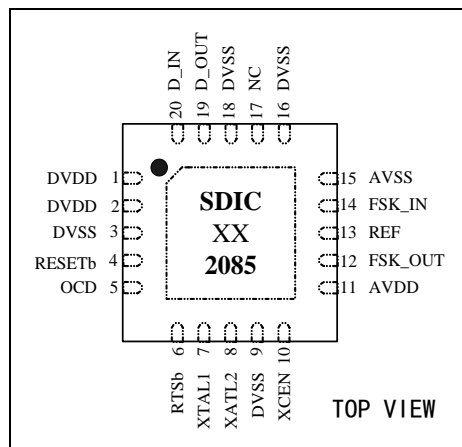


Figure 1. Pin diagram