

## Product Overview

### NCN5193: HART CMOS Modem

For complete documentation, see the data sheet.



The NCN5193 is a single-chip, CMOS modem for use in highway addressable remote transducer (HART) field instruments and masters. The modem and a few external passive components provide all of the functions needed to satisfy HART physical layer requirements including modulation, demodulation, receive filtering, carrier detect, and transmit-signal shaping. In addition, the NCN5193 also has an integrated DAC for low-BOM current loop slave transmitter implementation. The NCN5193 uses phase continuous frequency shift keying (FSK) at 1200 bits per second. To conserve power the receive circuits are disabled during transmit operations and vice versa. This provides the half-duplex operation used in HART communications.

### Features

- Low Power
- Single-chip, Half-duplex 1200 Bits per Second FSK Modem
- Bell 202 Shift Frequencies of 1200 Hz and 2200 Hz
- Transmit - signal Wave Shaping
- Receive Band - pass Filter
- Internal Oscillator Requires 460.8 kHz, 920 kHz or 1.8 MHz Crystal or Ceramic Resonator
- SPI Communication
- Integrated 16 bit Sigma-Delta DAC
- Meets HART Physical Layer Requirements
- Industrial Temperature Range of -40°C to +85°C

For more features, see the data sheet

### Benefits

- Optimal for Intrinsically Safe Applications

### Applications

- HART Multiplexers
- HART Modem Interfaces
- 4-20 mA Loop Powered Transmitters

### Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Data Transmission Standard	Data Rate	Number of Drivers	Number of Receivers	V <sub>CC</sub> Min (V)	V <sub>CC</sub> Max (V)	t <sub>PLH</sub> Max (µs)	I <sub>O</sub> Max (µA)	I <sub>IH</sub> Max (mA)	Package Type
NCN5193MNTWG		Pb-free Halide free non AEC-Q and PPAP	Active	HART	1200 baud	1	1	1.8	3.5	0.02	550		QFN-32

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