■ General Description

OCH1970 is a 3D magnetic sensor IC with high sensitivity and wide measurement range utilizing our latest Hall sensor technology.

Our ultra-small package of OCH1970 incorporates magnetic sensors, chopper stabilized signal, amplifier chain, and all necessary interface logic for detecting weak to strong magnetic fields in the X, Y and Z planes independently. From its compact foot print, thin package, and extremely low power consumption, it is suitable for a wide range of applications such as connected home, door & window opening/close sensing, and magnetic tamper detection of IoT systems or smart meters just to name a few.

The OCH1970 is available in 16-pin QFN package and is rated over the -40℃ to 85℃.

■ Features

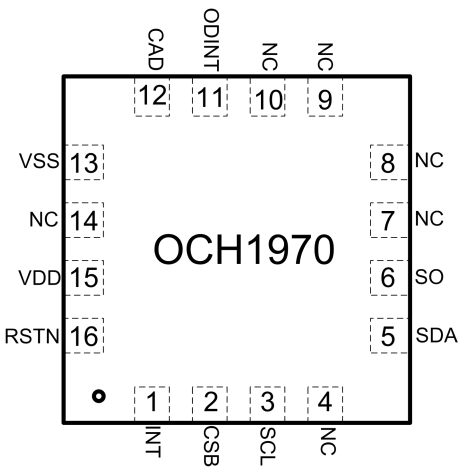
- Operating supply voltage: +1.7V to +3.6V
- Operating temperatures: -40℃~+85℃
- 16 bit data out for each 3-axis magnetic component
- Programmable threshold 3-axis magnetometer
- Built-in A to D Converter for magnetometer data output
- Selectable sensor measurement range and sensitiv -ity setting:
  ★High sensitivity setting
  Sensitivity: 1.1 μT/LSB (typ.)
  Measurement range: ± 36 mT
  ★Wide range setting
  Sensitivity: 3.1 μT/LSB (typ.)
  Measurement range: ± 34.9 mT(X/Y), ±101.5mT(Z)
- Serial interface:
  ★I2C bus interface
  ★4-wire SPI
- Operation mode:
  ★Power-down
  ★Single measurement
  ★Continuous measurement
- Output pin for event notification
- DRDY function for measurement data ready
- Magnetic sensor overflow monitor function
- Selectable sensor drive:
  ★Low power drive / Low noise drive
- Package:
  ★16-Pin QFN: 3.0mm x 3.0mm x 0.75mm
- RoHS Compliant

■ Applications

- Position Detection
- Home appliances

■ Pin Configuration

(Top View)



16-pin QFN
Figure 1, Pin Assignments Of OCH1970

Pin Name	Pin Number 16-pin QFN	Pin Function
INT	1	Interrupt pin ,“H” active.
CSB	2	Chip select pin for 4-wire SPI “L” active. Connect to VDD when selecting I2C bus interface.
SCL	3	When the I2C bus interface is selected (CSB pin is connected to VDD). SCL: Control clock input pin Input: Schmitt trigger
SK		When the 4-wire SPI is selected. SK: Serial clock input pin
SDA	5	When the I2C bus interface is selected (CSB pin is connected to VDD). SDA: Control data input/output pin Input: Schmitt trigger, Output: Open-drain
SI		When the 4-wire SPI is selected. SI: Serial data input pin
SO	6	When the I2C bus interface is selected (CSB pin is connected to VDD) Hi-Z output. Keep this pin electrically non-connected.
		When the 4-wire SPI is selected. Serial data output pin
OD-INT	11	Open-drain interrupt pin, “L” active.
CAD	12	When the I2C bus interface is selected (CSB pin is connected to VDD). CAD: Slave address input pin Connect to VSS or VDD.
		When the 4-wire serial interface is selected. Connect to VSS
VSS	13	Ground pin
VDD	15	Positive power supply pin
RSTN	16	Reset pin Resets registers by setting to “L”.
NC	4,7,8,9,10,14	Non-connect. Keep this pin non-connected.

■ Typical Application Circuit

I2C bus interface: