THE BEST MOTION SENSOR PROVIDER

IST8310

v.s.

HMC58xxx/ HMC59xx

iSentek
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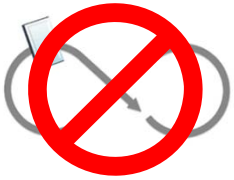
IST8310 Product Features

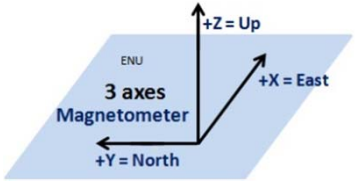
Anti-magnetic interference

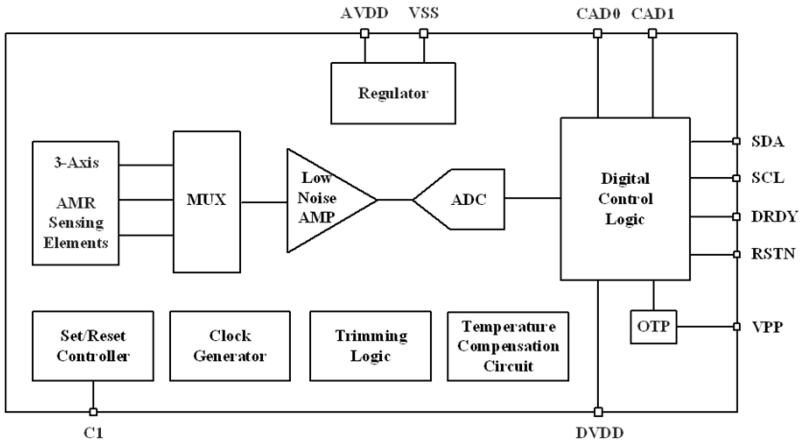
- Single chip 3-axis magnetic sensor
- I²C slave, Fast mode up to 400kHz
- Compact form factor, LGA12, 3.0x3.0 package
- Wide dynamic range of +/-16 gauss(X,Y-axis) and +/-25 gauss(Z-axis)
- 14 bits data output
- **Ultra-low noise of < 0.1uT(X-axis), < 0.2uT(Y-axis), < 0.3uT(Z-axis)**
- **Ultra-low hysteresis(<0.1%FS)**
- **Ultra-low sensitivity temperature drift(+/-0.016%/K)**
- **Ultra-low offset temperature drift(0.024uT/K)**
- **Built-in high precision temperature compensation circuit**
- Built-in Self-test function

Applications

- Quadcopter/Drone
- GPS/pedestrian Navigation
- Digital Compass
- Augmented Reality
- Virtual Reality
- Industrial Application







Operating temperature:	-40˚C to +85˚C
Supply voltage:	DVDD 1.72V~3.6V AVDD 1.72V~3.6V
Highest ODR:	200Hz
Sensitivity:	0.3uT/LSB
Measurement range:	+/-16 gauss(X,Y-axis) +/-25 gauss(Z-axis)
Serial interface:	I²C bus
Package:	LGA12, 3.0x3.0

Summary Table

		iSentek	H-company
Model		**IST8310**	**HMC58xxx/HMC59xx**
Package Size		**3.0 x 3.0 x 1**	**3 x 3 x 0.9**
Operating current (uA)		**200uA@7.5Hz**	**100uA@7.5Hz**
Linearity (+/- 8G, %FS)		**< 1.38**	**< 7.0**
RMS Noise (uT)	**X-axis**	**< 0.10**	**< 0.21**
	Y-axis	**< 0.15**	**< 0.18**
	Z-axis	**< 0.24**	**< 0.24**
Hysteresis (+/- 8G, %FS)	**X-axis**	**< 0.12**	**< 0.17**
	Y-axis	**< 0.07**	**< 0.09**
	Z-axis	**< 0.21**	**< 0.13**
Reliability		**High**	**Low**
Temperature Stability (-20~80 °C Angular Error)		**± 1.2**	**-1.7~4.3**
Dynamic Range (uT)		**X&Y-axis: +/-1600 Z-axis: +/-2500**	**+/-800**
Resolution (bit)		**14**	**12**
Sensitivity (uT/LSB)		**0.3**	**0.4**

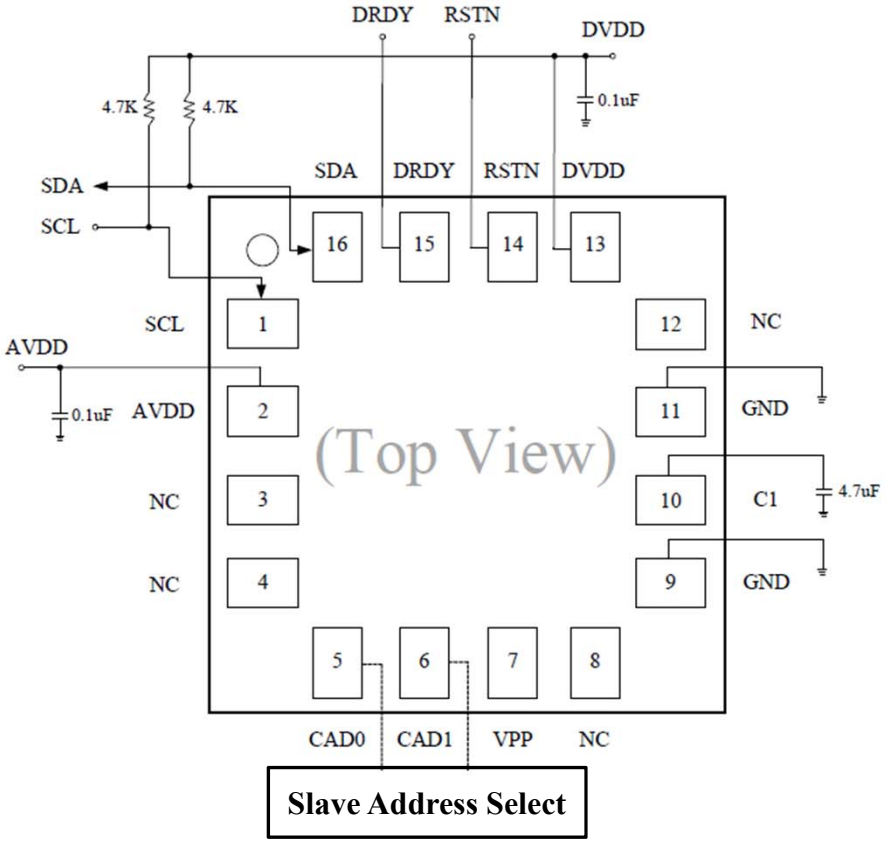
*Data from experiments and H-company's product's datasheet

Pin-to-Pin Information to HMC5883L/5983

IST8310 p2p to HMC5883L/5983 (1/2)

Pin No.	IST8310	HMC5883L	HMC5983	Comments
1	**SCL**	SCL	SCL/SPI_SCK	IST8310 doesn't support SPI, otherwise compatible.
2	**AVDD**	VDD	VDD	Compatible (IST8310:1.72~3.6V; HMC5x83L: 2.16~3.6V)
3	**NC**	NC	NC	Compatible
4	**NC**	S1	SPI_CS	Compatible (IST8310 doesn't care, no connection inside)
5	**CAD0**	NC	SPI_SDO	Compatible (IST8310 slave address select, see page 5)
6	**CAD1**	NC	I²C/~SPI	Compatible (IST8310 slave address select, see page 5)
7	**VPP**	NC	NC	Compatible (VPP pin can be connected to GND or floating)
8	**NC**	SETP	SETP	Compatible (IST8310 doesn't care, no connection inside)
9	**VSS**	GND	SoC	Compatible (for HMC5893, keep SoC signal = "0")
10	**C1**	C1	C1	Compatible
11	**VSS**	GND	GND	Compatible
12	**NC**	SETC	SETC	Compatible (IST8310 doesn't care, no connection inside)
13	**DVDD**	VDDIO	VDDIO	Compatible
14	**RSTN**	NC	NC	Compatible (RSTN pin can be connected to MCU or floating)
15	**DRDY**	DRDY	DRDY	Compatible
16	**SDA**	SDA	SDA/SPI_SDI	IST8310 doesn't support SPI, otherwise compatible.

IST8310 p2p to HMC5883L/5983 (2/2)



PN	Pin 6	Pin 5	i2c Address
HMC5883L	NC	NC	0EH / 1CH
HMC5983	VDD	NC	0EH / 1CH

Slave Address Select

CAD1	CAD0	Address (7-bit)	Address (8-bit)
VSS	VSS	0CH	18H
VSS	VDD	0DH	1AH
VDD	VSS	0EH	1CH
VDD	VDD	0FH	1EH

*if CAD1 and CAD0 are floating, I²C address will be 0EH/1CH.

- ***Default I²C slave address is 0EH(7-bit) / 1CH(8-bit) when you mount IST8310 onto HMC5883L/5983's PCB. Nothing else needs to be taken care of.***

Thank You