Digital compass module

Overview

This is a digital compass module with UART and IIC interface, 3-5V voltage supply , it's very easy to work with may controller.

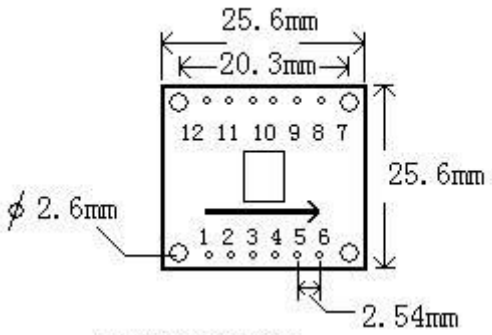
Basic features

- 3v – 5v power supply/operation level support
- Small size, 2.54 mm break out.
- UART / IIC double interface

Specifications

Measuring range	0-360 °
Resolution	0.1 °
Accuracy	1°
Power supply	3V-5V DC
Frequency response	25Hz
Current	5 V--15mA 3V--8 mA
Size	25.6mm×25.6mm

Hardware



引脚接线定义：

1. VCC	7. GND
2. TX	8. GND
3. RX	9. CAL
4. SCL	10. NC
5. SDA	11. NC
6. GND	12. VCC

Serial Communication Protocol:

Baud rate:

9600 bps Parity: N data bits: 8 Stop bit: 1

Command:

0x31: the first angle measurement

0xC0: calibration of the magnetic field start

0xC1: the end of the calibration magnetic field

0xA0-0XAA-0XA5-0XC5: Restore default setting

0xA0-0XAA-0XA5-IIC_ADDR: Change IIC address of the module

0x03 + 8bit: Setting the magnetic declination high 8 bit

0x04 + 8bit: Setting the magnetic declination low8 bit

Return Data:

Byte0: 0x0D

Byte1: 0x0A

Byte2: 0x30 ~ 0x33 angle of one hundred (ASCII 0 ~ 3)

Byte3: 0x30 ~ 0x39 angle of ten (ASCII 0 ~ 9)

Byte4: 0x30 ~ 0x39 angle a bit (ASCII 0 ~ 9)

Byte5: 0x2E (ASCII code decimal point)

Byte6: 0x30 ~ 0x39 decimal point (ASCII 0 ~ 9)

Byte7: 0x00 ~ 0xFF checksum (only lower 8bit)

IIC Communication Protocol:

The IIC communication, the module is equivalent to 24C04, EEPROM memory. And you can read the different address to get the information you need.

Address	Data
0x00	-
0x01	Angle value high 8bit
0x02	Angle value low 8bit
0x03	Magnetic declination high 8bit
0x04	Magnetic declination low 8bit
0x05	-
0x06	-
0x07	Calibration Level

IIC command:

Command	Description
0x00+0x31	Angle measurement
0x00+0xC0	Start calibration
0x00+0xC1	Stop calibration
0x00+0xA0+0XAA+0XA5+0XC5	Restore default setting
0x00+ (0xA0+0XAA+0XA5+IIC_ADDR)	Change IIC address of the module
0x03+ 8bit	Magnetic declination changes (high 8bit)
0x04+ 8bit	Magnetic declination changes (low 8bit)

*Default IIC address is 0xE0.

Revision History

Rev.	Description	Release date
v1.0	Initial version	5/16/2010