# 广告位

**安防监控摄像头购买/电气智能化工程安装可联系-超低价**

**无线AP覆盖/音响安装/智慧门禁/车牌识别**

**（电子与智能化二级资质）**

**廉价版智能沙盘/展厅移动机器人可联系**

**山西本地特种车辆租赁/混凝土/买车买房/抵押贷款需要可联系**

**办理各类企业/工程师人工智能工信部证书可联系（包过一条龙）**

**高光谱相机/100kg大型吊装无人机购买可联系**

**山西本地无人机高空清洗作业可联系/数字人视频生成**

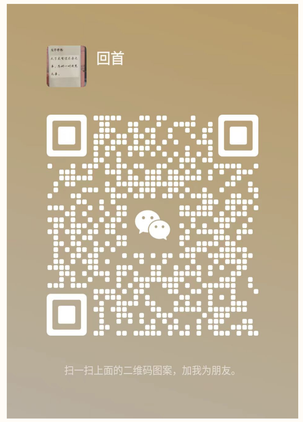
**ERP沙盘模拟赛可dd/高校实验室装修/化工电子类实验设备**

**项目科技查新/双软评估/科小认证等包过一条龙可联系**

**企业代理记账/知识产权代缴/企业科技项目申报可联系**

**中国创翼创业创新大赛等各类企业创赛可代做（PPT/申报书/知识产权一条龙）**

**有以上需要均可dd我，介绍人来给提成！**




# 办证

| 认证企业 | 方向 | 周期/方式 | 证书实物图 |
|---|---|---|---|
| 英伟达NVIDIA认证 | 人工智能计算证书 | 一周内全包下证 |  |
| 腾讯云 | 交付工程师 | 一周内全包下证 |  |
| | 云计算技能认证 区块链从业认证 | |  |
| | 腾讯高级工程师-数据库产品认证 | |  |
| 华为云 | 鲲鹏/华为云 技能认证 | 一周内全包下证 |  |
| | 开发者工作级认证 | |  |
| | 大数据技能认证 hicp证书 | |  |
| | openGauss数据库开发者证书 | |  |

| | A | B |
|---|---|---|
| 1 | 项目类别 | 认证专业 |
| 2 | 商务管理类 | 人力资源管理师 |
| 3 | | 风险管理师 |
| 4 | | 项目管理师 |
| 5 | | 物联网管理师 |
| 6 | | 新媒体运营师 |
| 7 | | 大数据分析师 |
| 8 | | 互联网营销师 |
| 9 | | 数字经济管理师 |
| 10 | | 电子商务师 |
| 11 | | 电子政务师 |
| 12 | | 社会工作师 |
| 13 | 医疗防疫公共卫生类 | 消毒员 |
| 14 | | 公共场所卫生管理员 |
| 15 | 美学艺术类 | 化妆品测评师 |
| 16 | | 新媒体主播 |
| 17 | | 美业培训师 |
| 18 | | 美容院管理师 |
| 19 | | 摄影摄像与后期制作 |
| 20 | 经贸管理类 | 酒店经营管理师 |
| 21 | | 理财规划制师 |
| 22 | | 连锁经营管理师 |
| 23 | | 双碳管理师 |
| 24 | | 财务税务管理师 |
| 25 | | 工商企业管理师 |
| 26 | | 公共关系管理师 |
| 27 | | 微商经营管理师 |
| 28 | | 市场营销师 |
| 29 | | 劳动关系协调师 |
| 30 | | 计算机信息技术 |
| 31 | | 企业培训师 |
| 32 | | 管理会计师 |
| 33 | | 中式京调师 |
| 34 | | 中式面点师 |

## 以下内容数据来源为官方数据手册

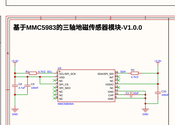
### MMC5983电气参数

**SPECIFICATIONS** (Measurements @ 25°C, unless otherwise noted; $V_{DD}$=3.0V unless otherwise specified)

| Parameter | Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Field Range (Each Axis) | Total applied field | | ±8 | | G |
| Supply Voltage | VDD | 2.8 | 3.0 | 3.6 | V |
| | VDDIO(I²Cinterface and INT) | 2.8 | 3.0 | 3.6 | V |
| Supply Voltage Rise Time | | | | 5.0 | ms |
| Supply Current[1] (7 measurements/second) | BW=00 | | 450 | | μA |
| | BW=01 | | 225 | | μA |
| | BW=10 | | 112.5 | | μA |
| | BW=11 | | 32 | | μA |
| Power Down Current[2] | | | 1.0 | | μA |
| Operating Temperature | | -40 | | 105 | °C |
| Storage Temperature | | -55 | | 125 | °C |
| Linearity Error[3] (Best fit straight line) | FS=±8G $H_{applied}$=±4G | | 0.1 | | %FS |
| Hysteresis[4] | 3 sweeps across ±8G | | 0.01 | | %FS |
| Repeatability Error[5] | 3 sweeps across ±8G | | 0.1 | | %FS |
| Alignment Error | | | ±1.0 | ±3.0 | Degrees |
| Transverse Sensitivity | | | ±0.8 | | % |
| Total RMS Noise[2] | BW=00 | | 0.4 | | mG |
| | BW=01 | | 0.6 | | mG |
| | BW=10 | | 0.8 | | mG |
| | BW=11 | | 1.2 | | mG |
| Output Resolution | | | 18 | | Bits |
| Max Output data rate[2] | BW=00 | | 50 | | Hz |
| | BW=01 | | 100 | | Hz |
| | BW=10 | | 225 | | Hz |
| | BW=11 | | 580 | | Hz |
| | BW=11(CM_Freq=111) | | 1000 | | Hz |
| Heading Accuracy[6] | | | ±1.0 | | Degrees |
| Sensitivity Accuracy[4,5] | ±8 G | | ±5 | | % |
| | With16bits operation | | 4096 | | Counts/G |
| | With18bits operation | | 16384 | | Counts/G |
| Sensitivity Change Over Temperature | -40~105 °C Delta from 25 °C, ±8 G | | ±5 | | % |
| | | | ±0.5 | | G |
| Null Field Output[6] | With16bits operation | | 32768 | | Counts |
| | With18bits operation | | 131072 | | Counts |
| Null Field Output Change Over Temperature using SET/RESET | -40~105 °C Delta from 25 °C | | ±3 | | mG |
| Temperature Sensor Output | | | 0.8 | | °C/Count |
| Disturbing Field[6] | | | 10 | | G |
| Maximum Exposed Field | | | | 10,000 | G |
| SET/RESET Repeatability | | | ±1 | | mG |

1. Supply current is proportional to how many measurements performed per second.
2. Based on Sbits characterization result.
3. Linearity error is the max heading accuracy to be 1.0 degree typical when using MEMSIC's proprietary software or algorithm.
4. Sensitivity of the orthogonal axes is analytically derived from raw data and is subsequently processed by MEMSIC software drivers.
5. Based on shipment test result.
6. This is the magnitude of external field that can be tolerated without changing the sensor characteristics. If the disturbing field is exceeded, a SET/RESET operation is required to restore proper sensor operation.

基于MMC5983的三轴地磁传感器模块-V1.0.0



MMC5983电路



LDO电路



MCU接口　电源滤波　电源指示灯

**公众号链接**

Github主页：https://github.com/Seerisheng



| 原理图 | Schematic1 | 更新日期 | 2026-04-22 |
|---|---|---|---|
| 图页 | P1 | 创建日期 | 2026-04-22 |
| 绘制 | | 物料编码 | |
| 审核 | 基于MMC5983的三轴地磁传感器模块 | | |
| | 版本 V1.0 | 尺寸 A4 | 页 1 共 1 |
| | 嘉立创EDA | | 嘉立创EDA |

**版本记录**

V1.0.0版本-2026/04/22-零高幸：初版完成设计

## 以下内容数据来源为官方数据手册

### MMC5983简介

MEMSIC

**±8 Gauss, High Performance 3-axis Magnetic Sensor**

**MMC5983MA**

**FEATURES**

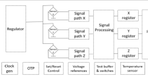
- **Fully integrated 3-axis magnetic sensor and electronic circuits requiring fewer external components**
- **Superior dynamic range and accuracy:**
  - ✓ **180 kSR**
  - ✓ **18bits operation**
  - ✓ **0.4mG total RMS noise**
  - ✓ **Enables heading accuracy of ≤0.8°**
- **Max output data rate of 1000Hz**
- **Industrial standard low profile package 3.0mm x 3.0mm x 1.0mm**
- **Degaussing with built-in SET/RESET function**
  - ✓ **Eliminates thermal variation induced offset error (Null field output)**
  - ✓ **Clears the residual magnetization resulting from strong external fields**
- **On-chip sensitivity compensation**
- **On-chip temperature sensor**
- **Data_Ready interrupt**
- **Low power consumption**
- **1μA power down current**
- **I²C Slave, FAST(≤400KHz) mode**
- **3.0V single low power supply**
- **SPI interface available**
- **RoHS compliant**

**APPLICATIONS**

- **Electronic Compass & Navigation**
- **Position Sensing**
- **General Purpose Magnetic Field Measurements**

**DESCRIPTION**

The MMC5983MA is an AEC-Q100 qualified complete 3-axis magnetic sensor with on-chip signal processing and integrated I²C/SPI bus suitable for use in automotive applications. The device can be connected directly to a microprocessor, eliminating the need for A/D converters or timing resources.



**FUNCTIONAL BLOCK DIAGRAM**

It can measure magnetic fields within the full scale range of ±8 Gauss (G), with 0.25mG/0.0625mG per LSB resolution at 18bits/16bits operation mode and 0.4 mG total RMS noise level, enabling heading accuracy of ±0.8° in electronic compass applications.

An integrated SET/RESET function provides for the elimination of error due to Null Field output change with temperature. Temperature information from the integrated temperature sensor is available via the I²C interface. The SET/RESET function can be performed for each measurement, periodically, or when the temperature changes by a predetermined amount as the specific application requires.

In addition, the SET/RESET function clears the sensors of any residual magnetic polarization resulting from exposure to strong external magnets.

The MMC5983MA is packaged in a low profile LGA package and an operating temperature range from -40°C to +105°C.

The MMC5983MA provides an I²C digital output with 400 KHz, fast mode operation, and a 10MHz SPI digital output.

### MMC5983引脚说明和极限参数

**ABSOLUTE MAXIMUM RATINGS***

Supply Voltage -0.5 to +3.6V
Storage Temperature -55°C to +125°C
Maximum Exposed Field 10000 G

***Note:** Stresses above those listed under Absolute Maximum Ratings may cause permanent damage to the device. This is a stress rating only; the functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect the device's reliability.

**Pin Description: LGA Package**

| Pin | Name | Description | I/O |
|---|---|---|---|
| 1 | SCL/SPI_SCK | Serial Clock Line for I²C/SPI bus | I |
| 2 | VDD | Power Supply | P |
| 3 | NC | Not Connected | NC |
| 4 | SPI_CS | Chip Select line for SPI (active low). Tie to VDDIO for I²C Interface | I |
| 5 | SPI_SDO | SPI Serial Data Out | O |
| 6 | NC | Not Connected | NC |
| 7 | NC | Not Connected | NC |
| 8 | NC | Not Connected | NC |
| 9 | GND | Connect to Ground | P |
| 10 | CAP | Connect a 10uF capacitor for SET/RESET | P |
| 11 | GND | Connect to Ground | P |
| 12 | NC | Not Connected | NC |
| 13 | VDDIO | Power supply for I²C and INT | P |
| 14 | NC | Not Connected | NC |
| 15 | INT | Interrupt Output | O |
| 16 | SDA/SPI_SDI | Serial Data Line for I²C/SPI bus | I/O |

All parts are shipped in tape and reel packaging with 5000pcs per 13" reel.

**Caution:**
This is an Electro-Static Discharge (ESD) sensitive device.

**Ordering Guide:**

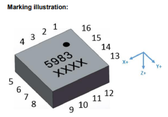
MMC5983MA

| Package type: | |
|---|---|
| Code | Type |
| A | LGA16 RoHS compliant |

| Performance Grade: | |
|---|---|
| Code | Performance Grade |
| M | Industrial Grade |

| I²C address | |
|---|---|
| Code | 7bits address |
| 3 | 0110000 |

**Marking illustration:**




**Note:** Coordinates shown above indicate polarity after a SET operation.

The black dot on top-right marks the location of pin one (1). The 1st line represents the device's Name. The 2nd line represents the device's Lot Number.

| | A | B | C |
|---|---|---|---|
| 1 | 序号 | 专业名称 | 级别 |
| 2 | 1 | 广告艺术设计师 | 高级 |
| 3 | 2 | 网络工程师 | 高级 |
| 4 | 3 | 电子商务师 | 高级 |
| 5 | 4 | 室内设计师 | 高级 |
| 6 | 5 | 平面设计师 | 高级 |
| 7 | 6 | ERP财务应用师 | 高级 |
| 8 | 7 | JAVA软件工程师 | 高级 |
| 9 | 8 | 计算机辅助设计师 | 高级 |
| 10 | 9 | 软件技术开发工程师 | 高级 |
| 11 | 10 | 软件开发工程师 | 高级 |
| 12 | 11 | 物联网技术应用工程师 | 高级 |
| 13 | 12 | 数据库管理工程师 | 高级 |
| 14 | 13 | 软件设计师 | 高级 |
| 15 | 14 | 网络安全架构师 | 高级 |
| 16 | 15 | 渗透测试工程师 | 高级 |
| 17 | 16 | 提示工程师 | 高级 |
| 18 | 17 | 大模型开发工程师 | 高级 |
| 19 | 18 | 数字技术应用工程师 | 高级 |
| 20 | 19 | 大数据治理工程师 | 高级 |
| 21 | 20 | 数据安全工程师 | 高级 |
| 22 | 21 | 程序设计工程师 | 高级 |
| 23 | 22 | AIGC应用工程师 | 高级 |
| 24 | 23 | 大模型应用工程师 | 高级 |
| 25 | 24 | 大数据采集工程师 | 高级 |
| 26 | 25 | 商务数棍分析师 | 高级 |
| 27 | 26 | 移动安全工程师 | 高级 |
| 28 | 27 | 安全运维工程师 | 高级 |
| 29 | 28 | 软件工程师 | 高级 |
| 30 | 29 | 数据库工程师 | 高级 |
| 31 | 30 | 音响工程 | 高级 |
| 32 | 31 | 舞台灯光 | 高级 |
| 33 | 32 | 通信工程师 | 高级 |
| 34 | 33 | 软件测试工程师 | 高级 |
| 35 | 34 | 新能源应用工程师 | 高级 |
| 36 | 35 | 新材料检测工程师 | 高级 |
| 37 | 36 | 新材料研发工程师 | 高级 |
| 38 | 37 | 新材料技术与应用工程师 | 高级 |
| 39 | 38 | 固体废物资源综合利用技术工程师 | 高级 |
| 40 | 39 | 现场管理工程师 | 高级 |
| 41 | 40 | 网络信息与安全工程师 | 高级 |
| 42 | 41 | 机器学习工程师 | 高级 |
| 43 | 42 | python技术应用工程师 | 高级 |

企业认证证书　工信部职业　工信部人才交流中心测评证书

| | A | B | C |
|---|---|---|---|
| 1 | 类别 | 编号 | 测评科目 |
| 2 | 计算机与软件 | CPOO1 | Office办公软件 |
| 3 | | CPOO2 | 信息化办公 |
| 4 | | CPOO3 | 计算机硬件维护 |
| 5 | | CPOO4 | 系统管理 |
| 6 | | CPOO8 | 设备管理 |
| 7 | | CPOO9 | 网站管理 |
| 8 | | CPO10 | 物流管理 |
| 9 | | CPO11 | 网络营销 |
| 10 | | CPO12 | 局域网组建 |
| 11 | | CPO13 | 网络工程师 |
| 12 | | CPO15 | 信息安全与管理 |
| 13 | | CPO17 | 电子商务师 |
| 14 | | CPO19 | 跨境电子商务师 |
| 15 | | CPO20 | 数据管理 |
| 16 | | CPO21 | 数据库应用技术 |
| 17 | | CPO22 | C语言编程高阶 |
| 18 | | CPO24 | .NET开发工程师 |
| 19 | | CPO25 | Android软件开发工程师 |
| 20 | | CPO26 | Java软件开发工程师 |
| 21 | | CPO27 | J2EE软件开发工程师 |
| 22 | | CPO31 | Web前端开发工程师 |
| 23 | | CPO42 | 软件测试工程师 |
| 24 | | CP206 | 财务信息化管理 |
| 25 | | CPO45 | 平面设计师 |
| 26 | | CPO47 | 网页设计师 |
| 27 | | CPO48 | 二维动画设计师 |
| 28 | | CPO49 | 三维设计师 |

企业认证证书　工信部职业　工信部人才交流中心测评证书　工信部信创证书　中国未来研究会　人力