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| **苏州中德睿博智能科技有限公司** |
| 组合导航及外同步模块规格书 |
| RS-INTS1组合导航及外同步模块 |



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| --- | --- | --- |
| 参数名称 | 参数值 | 描述 |
| 输入脉冲特性 | 输入脉冲范围 | 0~10hz |
| 输入电平类型 | TTL电平（0-3.3V) |
| 电平保持时间 | >1ms |
| 输出脉冲特性 | 输出脉冲范围 | 1~4000hz |
| 输出电平类型 | TTL电平（0-3.3V) |
| 电平保持时间 | >250us |
| 同步特性 | 输入-输出同步精度 | <5us |
| 输出-输出同步精度 | <5us |
| 内部频率稳定性 | ±10ppm |
| 环境特性 | 工作温度范围 | -40°~+85° |
| 储存温度范围 | -40°~+85° |
| 工作湿度范围 | 0~95% |
| 抗振动、抗冲击 | IEC 60068-2-6:2007IEC 60068-2-27:2008 |
| 防水防尘 | IP63 |

2.3 传感器性能指标GNSS性能指标：

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| 参数类型 | 参数值 |
| 信号支持 | BD/GPS/GLONASS/GALILEO/QZSS |
| 单点定位(RMS) | 平面：1.5m，高程：2.5m |
| DGPS(RMS) | 平面：0.4m，高程：0.8m |
| RTK(RMS) | 平面：0.8cm+1ppm，高程：1.5cm+1ppm |
| 定向精度 (RMS) | 0.1°/1m 基线 |
| 时间精度 (RMS) | 20ns |
| 速度精度 (RMS) | 0.03m/s |

• 惯性测量单元性能指标：

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| 参数类型 | 参数值 |
| 陀螺量程 | ±300°/s |
| 陀螺噪声 | 0.007 °/s |
| 陀螺零偏不稳定性(Allan方差) | 1.64 °/h |
| 陀螺噪声密度（noist density) | 0.0015°/s/ |
| 陀螺角度随机游走误差(angle random walk) | 0.09°/ |
| 加速度计量程 | ±6g |
| 加速度计噪声 | 0.5mg |
| 加速度计零偏不稳定性（Allan方差） | 0.01 mg |
| 加速度计噪声密度（noist density) | 59.5ug/ |
| 加速度计速度随机游走(velocity random walk) | 35.0mm/s/ |
| 输出数据频率 | 200hz |

• 气压计性能指标：

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| 参数类型 | 参数值 |
| 分辨率 | 0.012 mbar |
| 测量范围 | 10 到1200 mbar |
| 输出数据频率 | 50hz |

• 地磁传感器性能指标：

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| 参数类型 | 参数值 |
| 测量范围 | -8.1gauss to 8.1gauss |
| 分辨率 | 4.35 milli-gauss |
| 灵敏度（增益） | 1370 LSb/gauss |
| 直线性 | ±2 %FS |
| 动态范围 | ±0.88-±8.1 gauss |
| 输出数据频率 | 50hz |

2.4. 接口描述2.5. 引脚定义

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| --- | --- | --- | --- |
| 座子名称 | 引脚序号 | 引脚定义 | 说明 |
| X1 | 1 | OUT5 | PWM输出 |
| X1 | 2 | OUT4 | PWM输出 |
| X1 | 3 | OUT3 | PWM输出 |
| X1 | 4 | OUT2 | PWM输出 |
| X1 | 5 | OUT1 | PWM输出 |
| X1 | 6 | IN-PPS | PPS输入 |
| X1 | 7 | GND | 电源地 |
| X1 | 8 | GND | 电源地 |
| X1 | 9 | GND | 电源地 |
| X2 | 1 | RS485-B | 485接口 |
| X2 | 2 | RS485-A | 485接口 |
| X2 | 3 | GND | 电源地 |
| X2 | 4 | RS232-TX | 232串口 |
| X2 | 5 | RS232-RX | 232串口 |
| X2 | 6 | GND | 电源地 |
| X2 | 7 | OUT6 | PWM输出 |
| X3 | 1 | DC12V | 输入电源 |
| X3 | 2 | GND | 电源地 |
| NET |  | 网络指示灯 | 指示网络 |
| RTK |  | RTK定位指示灯 | 指示RTK定位 |

2.6. 电气参数- 供电电压：DC5~12V±5%- 整机功耗：<1W- 输出脉冲最大电流：<5MA- 测量状态平均电流：<100mA(12V供电)2.7. 系统框图典型应用• 无人机• 智能驾驶• 割草机• 精准农业机械尺寸（单位：毫米）图一：同步模块外形尺寸图二：GPS天线GPS天线外形尺寸：Ф27.3\*58.6mm交付清单1. 组合导航同步模块一个

 2.GPS天线二根(型号BT-560) 3.GPS天线延长线二根(长度一米) 4.4G天线一根(带延长线) 5.ROS驱动重要声明⚫ 中德睿博保留对本说明书中所有内容的最终解释权及修改权。 ⚫ 由于随着产品的硬件及软件的不断改进，本说明书可能会有所更改，恕不另行告知，最终应以最新版的说明书为准。 修订历史

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| 版本 | 修订日期 | 修订说明 |
| V1.0 | 2023.05.21 | 初始版本 |
| V1.5 | 2023.08.10 | 修改外壳尺寸及接口定义 |

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