

半捷联MEMS惯性测量装置数据硬回收系统设计

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摘要:

针对半捷联MEMS惯性测量系统中MIMU所测得的弹体姿态信息需经过滑环传输到信息存储仓, 而滑环在传输模拟量的过程用于半捷联MEMS惯性测量装置的数据硬回收系统设计方法。该系统采用ADC将MIMU输出的模拟量转化为数字量, 并通过滑环传输到惯性信息存储仓, 最后通过FPGA模拟串行通信口接收数据并存储到FLASH中, 实现对半捷联MEMS惯性测量装置转台试验验证, 该系统能够实时地采集并存储弹体姿态信息, 且具有采样率高, 避免滑环电气噪声等特点。对常规弹药飞行的应用价值。

关键词: 半捷联; 数据存储; RS232; MIMU; A/D转换

Design of Acquisition and Storage System on Half-Strapdown System

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Abstract:

Against the fact that Projectile attitude information from MIMU have to be transmitted to Storage unit by Slip ring, but Slip ring may transmitting analog data, This paper puts forward a measure to solve the problem of data acquisition and storage in half-strapdown. paper adopts the method of converting the analog signal from MIMU to digital one, and transmitting it to Storage unit. Experiments accurately, with advantages of high sampling rate, low electrical noise. It has engineering application value on recording Conventior landing attitude.

Keywords: Half-strapdown, Data Storage, RS232, MIMU, A/D Conversion

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