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### 组合GPS和GLONASS在民航中应用的研究

刘晖, 李小民, 王银锋, 张其善

北京航空航天大学202 教研室, 北京, 100083

### APPLICATION OF COMBINED GPS AND GLONASS IN CIVIL AVIATION

Liu Hui, Li Xiaomin, Wang Yinfeng, Zhang Qishan

Faculty 202, Beijing University of Aeronautics and Astronautics, Beijing, 100083

摘要

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摘要 研究了GPS和GLONASS在民用航空中的应用前景。分析了组合GPS和GLONASS所具备的可用性、精确性和完整性潜力。组合GPS/GLONASS在我国民航中具有重要的技术与战略意义。提出了一种集成12通道GPS/GLONASS接收机的结构与实现。射频前端部分采用3级变频将GPS和GLONASS信号变至中频并采样为同相与正交样本。数字处理部分对各样本加以积累与处理,解调卫星的导航电文。在导航解算中结合了WGS-84和PZ-90坐标系之间的转换。

关键词: 接收机 民航 导航 GPS GLONASS

Abstract: The application prospect of combined GPS/GLONASS in civil aviation is researched. The potential of combined GPS/GLONASS in the availability, accuracy and integrity of civil aviation is analysed. The structure of a twelve channel integrated GPS/GLONASS receiver is proposed. Triple down conversion is adopted in the receiver's RF front end to convert GPS and GLONASS RF to IF. The IF signal is sampled to In phase and Quadrature samples. They are accumulated and processed in digital part and the navigation message is demodulated. The transformation of WGS 84 and PZ 90 is incorporated into the solution of GPS/GLONASS navigation.

Keywords: receiver civil aviation navigation GPS GLONASS

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