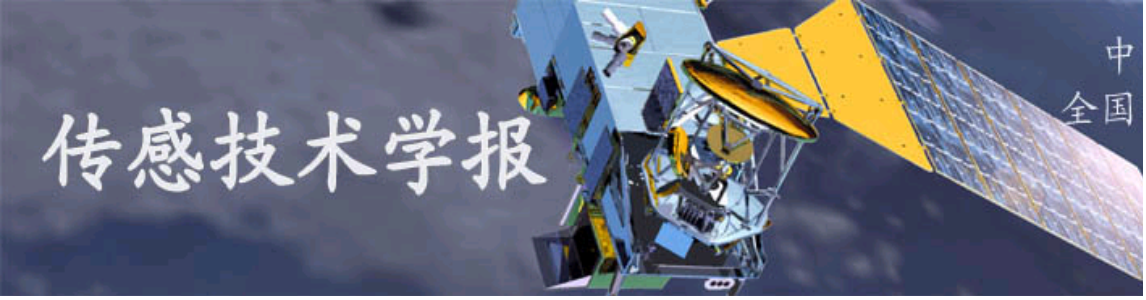

新型S波段软件无线电微型测控应答机的实现

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摘　要：

本文设计并实现了适用于皮卫星的小型化、低功耗、高灵敏度及高动态范围的新型S波段微型测控应答机。该机采用相环合成各级本振，具有模块化、灵活性强及简单可靠等优点。整个测控应答机在17.4×8.8cm2的一块印制电路板上实Bm，1kHz环路带宽下的接收灵敏度为-136dBm，整机的动态范围大于80dB，可满足轨道高度小于1000公里的低轨皮卫

关键词：测控应答机；皮卫星；软件无线电；接收机；发射机

Implementation of a New S-Band Micro-transponder Based on Software Def

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Abstract:

A New S-band small volume, low power consumption, high receiver sensitivity and high dynamic range micro-transponder is transponder is based on software defined radio, and uses digital integer-N phase locked loop chips for frequency synthesize modulability, flexibility and simplicity. Implemented on a 17.4×8.8cm2 printed circuit board, the transponder was tested with 26dBm transmit power, -136dBm receiver sensitivity under the condition of 1kHz loop bandwidth, and more than 80dB receiv requirements of pico-satellite with the altitude less than 1000km.

Keywords: transponder；pico-satellite；software defined radio；receiver；transmitter

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