

IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
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FACSAT1 GROUND STATION PERFORMANCE

Abstract

In this paper, is present the architecture and performance analysis of a small, ground station to track and receive signals from Facsat1, which operate on the UHF-band (430 MHz to 440 MHz). The proposed ground station uses a 20-dB gain Yagi-Uda antenna, and a small LNA filter with 30 dB gain. The rest of the analog front-end is a software-defined radio dongle with a USB interface to a desktop computer and a radio tranceptor provide by Gomspace Inc. The software-defined nature of the front-end gives the station the flexibility to target satellites in this band with diverse power, modulation and error-correcting schemes, and the proprietary sistema guarantee the acuracy operation from all ground station. We report performance evaluation results for outdoor operation. The proposed ground station can be adopted in any locations with fixed outdoor antennas.. Given its low cost, it can be easily adopted for classroom and laboratory activities related to satellite signal processing.