

EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Sensors & Technology (3)

Author: Prof. Jun Ho Lee
Korea, Republic of, jhlsat@kongju.ac.kr

Prof. C. W. Lee
Korea, Republic of, cweon@kongju.ac.kr

Mr. Kyung In Kang
Korea, Republic of, kikang@kaist.ac.kr

Dr. T. S. Jang
Korea, Republic of, tsjang@satrec.kaist.ac.kr

Dr. S. W. Rhee
Korea, Republic of, srhee@kari.re.kr

COMPACT IMAGING SPECTROMETER (COMIS) FOR A MICROSATELLITE STSAT3: DESIGN
AND PERFORMANCE

Abstract

A compact imaging spectrometer (COMIS) for use in the STSAT3 microsatellite is currently under development. It is scheduled to be launched into a low Sun-synchronous Earth orbit (700 km) by the end of 2010. COMIS was inspired by the success of CHRIS, which is a small hyper-spectral imager developed for the ESA microsatellite PROBA. COMIS is designed to achieve nearly equivalent imaging capabilities of CHRIS in a smaller (65 mm diameter) and mechanically superior (in terms of alignment and robustness) package. COMIS, as its name implies, is very compact in volume, mass, and power. The total mass including optics, housing, and electronics is about 4.3kg and the average power per orbit is less than 5 watt. Its main operational goal will be the imaging of Earth's surface and atmosphere with ground sampling distances of 27 m at the 18 - 62 spectral bands (4.0- 1.05 μm), mainly over the Korean peninsula. The swath width imaged is 28km at the nadir viewing. The COMIS takes hyper-spectral images in the two different modes; a) strip imaging and b) stereo viewing observation. This imaging will be used for environmental monitoring, such as the in-land water quality monitoring of Paldang Lake, which is located next to Seoul, South Korea.