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PERFORMANCE ANALYSIS FOR HYPER SPECTRAL SIGNAL DETECTION OF  
COMPCAT IMAGING SPECTROMETER FOR STSAT3 SATELLITE

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STSAT-3 is the third science and technology experimental microsatellite of the STSAT series designated in the Long-Term Plan for Korea's Space Development. The STSAT3 satellite will be launched into a lower sun-synchronous earth orbit (~ 700km) in 2010. Compact imaging spectrometer (COMIS) is the second instrument of STSAT3. COMIS takes hyper-spectral images of 30m/60m ground sampling distance over a 30km swath width. The number of bands is selectable among 62 channels. The COMIS will be used for earth environmental monitoring. The COMIS consist of very compacted two optical parts, one is imaging optics and another is spectral optics. Entrance pupil diameter of COMIS is 65mm(F/4.6). Focal plane assembly of COMIS designed for this compact optical system to separate 62 channels with 2~15nm spectral resolution. CCD is used for the detector of COMIS. Its spectral range is from 400nm to 1100nm. The COMIS has on-board signal processor to select the spectral bands and resolution. The COMIS transfer the observed data to solid state mass storage of spacecraft bus with LVDS high speed interfaces. This paper presents a brief introduction of the COMIS and also introduces result of performance analysis for hyper spectral signal separation and detection of its focal plane assembly.

Topic 5 : Focal plane assembly technology  
Oral presentation