

Multi-Channel Remote Sensing CCD Camera Design With Multiplexing Concept

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We present a prototype design study for a remote sensing camera system which can be operated in multi-channel mode simultaneously with several bandpass filters. Orbital and attitude control system parameters are adopted from existing satellites to discuss its pointing accuracy and attitude stability as well as its resolution. The camera control electronics is based on the multiplexed driving concept, which can provide a variety of flexibility for system control parameters and its individual optimisation. The design can also be applied to any system with linear sensors or frame sensors according to its functional requirements. The system design parameters have been reviewed, including modification of driving waveforms for different sensors, waveforms for low-noise readout circuit in analog chain, and synchronisation with other signal processing. A camera control system to support required sub-system control functions including bus interfacing and image data transmission have also been briefly discussed.