



Selkirk Remote Sensing Ltd. DAC System

DAC System (Digital Aerial Camera) for sale

This digital aerial camera system was designed and built by Selkirk Remote Sensing Ltd. and has been operating since 2002. The design criteria was to make a mid-format digital camera that conforms fully to photogrammetric standards for rigidity and stability and thus is suitable for metric camera calibration. The first thing an observer will note is the lenses are not removable or interchangeable, they are focused and locked securely in place prior to calibration. Any disassembly negates the photogrammetric calibration. These cameras have been calibrated numerous times by Ayman Habib of the Geomatics Department of the University of Calgary. All radial and tangential distortions fall within one 9 micron pixel.

For installation in an aircraft, both DACs are fitted into a custom mounting fixture that, in turn, fits into a standard RC20/30 camera mount. The two cameras may be aligned vertically in which case they are normally used sequentially for a total of 800 images. Alternately, the two cameras may be aligned as low obliques, either laterally or fore and aft and are then exposed simultaneously. The lateral looking twin camera alignment we refer to as bicamera. A total of three lateral angle alignments may be selected and fixed in the shop (normally vertical and two different bicamera angles). In the air, the operator may select and change between any of the preselected lateral angles in less than one minute.

All camera controls and storage drives are mounted on a control panel which is installed on the camera mount. The cameras are triggered by simply grounding a floating voltage conductor. The cameras may be triggered manually or automatically using a GPS based photo navigation software package. We have used both TrackAir and our own SNAP system (Selkirk Navigation Automation Program). We recover perspective centers using a standalone laptop PC and a dual frequency GPS receiver.

The image storage drives are mounted in a pressure sealed case because they become intermittent when unpressurised above 14,000 feet ASL. We have a total of four storage drives for our two DACs. Each holds approximately 400 images and may be changed in the air at any altitude in approximately five minutes.

Selkirk is offering to sell this system for \$20,000. The package includes both DACs, the camera mounting fixture and control panel with four image storage drives. Included also are all special tools, spare parts, documentation and specially fitted hard storage cases.

We believe that our DACs are upgradable from 22mp to 60mp assuming the owner has the resources to approach this project.



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DAC System Details

Sensor

We utilize the Imacon Ixpress 132C. The pixel size is 9 microns. The sensor size is 37mm (4080 pixels) x 49mm (5440 pixels) for a nominal 22mp. Images are stored in the Imacon Imagebank each of which holds approximately 400 images (40Gb capacity).

Lens

Rodenstock Apo-Sironar HR Digitar, 60mm focal length

Shutter

Rollei electronic size zero. This shutter functions well at speeds up to 1/250 second. At 1/500th second, the shutter sometimes misbehaves.



Click to enlarge these three DAC images

