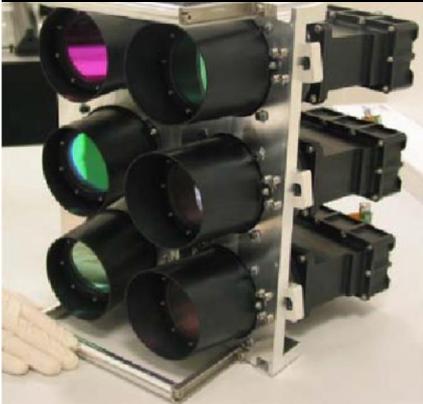


# Wide Swath DMC Multi-Spectral Imager

## Applications

Suitable for wide range of commercial, environmental and security application including:

- Mapping
- Agriculture monitoring
- Flood monitoring
- Water quality
- Disaster management
- National and urban mapping



The DMC multispectral imager (MSI) is baselined on the SSTL 100 series spacecraft used in the highly successful Disaster Monitoring Constellation (DMC), which has achieved over 10 years of in-orbit heritage

The DMC MSI is a pushbroom electro-optical imager. At an orbital height of 686km, this gives an impressive 600km swath width and 22m GSD when nadir pointing for each image

This wide swath DMC MSI consists of six channels made up from two banks of three sensors. Each bank is mounted at an angle to each other so that they image adjacent parts of the ground scene. Opposite channel pairs each have a 14,400 pixel linear CCD sensor and identical filters, giving an effective image width of 28,300 pixels for each of the three chosen wavebands. An overlap of 500 pixels between banks to ensure image continuity: a typical 600x700km image generates a data file of 3.5GBytes.

## Benefits

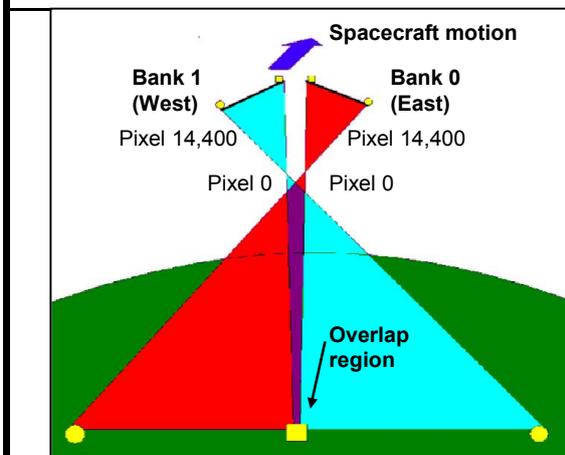
- DMC flight heritage on UK-DMC2; Deimos-1; NigeriaSat-X
- 32m variant heritage: UK-DMC1, ALSAT-1, NigeriaSat-1
- Low cost
- 7+ years design life
- Ideal micro satellite payload



***Fly the imagers we fly!***

# Wide Swath DMC Multi-Spectral Imager

## Imager Geometry Considerations



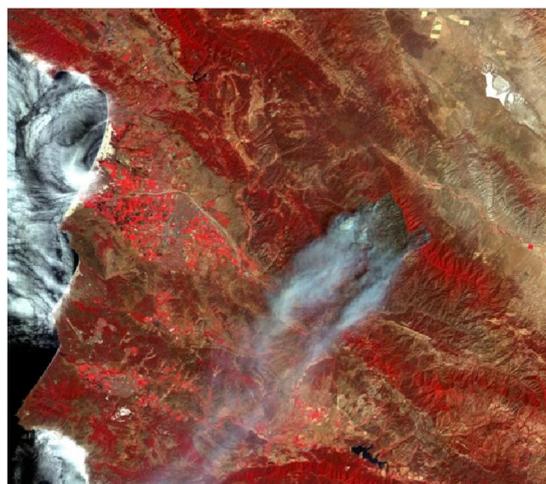
This schematic illustrates the optical geometry of a channel pair. The other two pairs of channels are identical to this. The features on the ground are traced to the opposite side of the sensor by virtue of the inverted image provided by the lenses. The overlap between the two channels is 500 pixels, this gives us enough data to successfully stitch the two images together in post processing. Because of the vast field of view of the imager the ground sample distance (GSD) increases slightly away from the centre of the swath.

### Physical Characteristics

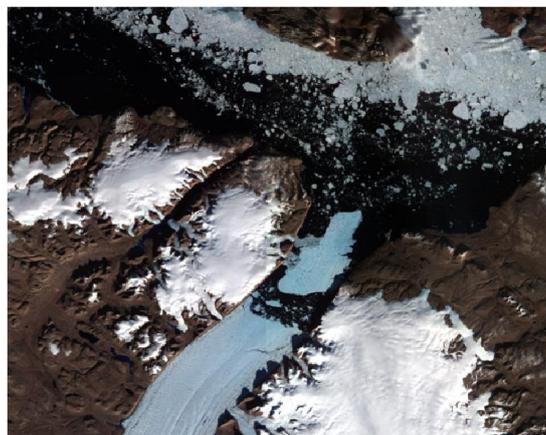
Dimensions	314(length)x257(width)x240(high) mm
Mass	12kg (Optics + Electronics)
Power	28V @ 600mA when Imaging
Data Interface	CAN + LVDS
Temperature	±15° C about nominal -25° C to +80° C storage

### Performance Properties

Mission Lifetime	7+ years
Channels	Landsat 2, 3 and 4 spectral filter
Spectral bands	Green (523 – 605nm) Red (629 – 690nm) Near Infrared (774 – 900nm)
Ground resolution	22m multispectral, nadir pointing and 686km orbit
Swath	650 km, nadir pointing and 686km orbit
Pixel field of view	6.62 arc sec
Channel FoV	26.0 deg
Channel focal length	155.9 mm
Data acquisition	14 bit data quantisation
SNR	>100:1 in all waveband



Southern California forest fire  
UK-DMC-2 image, 22m GSD



Glacial calving – Petermann Glacier, Greenland  
UK-DMC-2 image, 22m GSD

*Product specification may be subject to change without notification*

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