

QuickBird

The QuickBird satellite is the first to orbit Earth in DigitalGlobe's constellation. In April of 2011, DigitalGlobe completed an orbit raise designed to extend the mission life of the QuickBird sensor. An operational altitude of 482 km was achieved with an expected gradual descent to 450 km by early 2013. Today, DigitalGlobe's QuickBird satellite offers sub-meter resolution imagery, high geolocational accuracy, and large on-board data storage. With global collection of panchromatic and multispectral imagery, QuickBird is designed to support a wide range of geospatial applications.

Features

- Sub-meter resolution imagery
 - 65 cm panchromatic at nadir
 - 2.62 m multispectral at nadir
- High geolocational accuracy
 - Stable platform for precise location measurement
- Fast large area collection
 - 18.0 km width imaging swath
- High image quality
 - Off-axis unobscured design of QuickBird's telescope - Large field-of-view
 - High contrast (MTF)
 - High signal to noise ratio
- Large on-board data storage
 - 128 gigabits on-board image storage capacity

Benefits

- Acquire high quality satellite imagery for map creation, change detection, and image analysis
- Geolocate features to create maps in remote areas without the use of ground control points
- Collect a greater supply of frequently updated global imagery products
- Extend the range of suitable imaging collection targets and enhance image interpretability



QuickBird clean room pre-launch preparations. The first of DigitalGlobe's state-of-the-art high-resolution commercial imagery satellites.

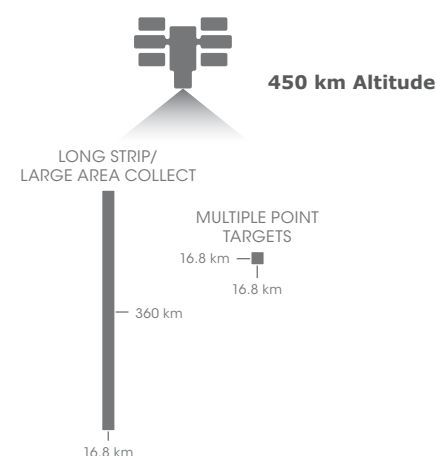
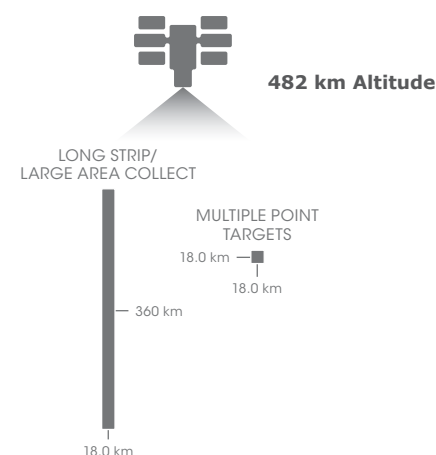


Design and Specifications

Launch Information	Date: October 18, 2001 Launch Vehicle: Delta II Launch Site: SLC-2W, Vandenberg Air Force Base, California	
Mission Life	Extended through early 2014	
Spacecraft	2400 lbs, 3.04 m (10 ft) in length	
	Altitude 482 km	Altitude 450 km
Orbit	Type: Sun-synchronous, 10:00 am descending node Period: 94.2 min.	93.6 min
Sensor Resolution and Spectral Bandwidth	Panchromatic: 65 cm GSD at nadir Black & White: 405 - 1053 nm Multispectral: 2.62 m GSD at nadir Blue: 430 - 545 nm Green: 466 - 620 nm Red: 590 - 710 nm Near-IR: 715 - 918 nm	Panchromatic 61 cm GSD at nadir Multispectral 2.44 m GSD at nadir
Dynamic Range	11-bits per pixel	
Swath Width and Area Size	Nominal Swath Width: 18.0 km at nadir Accessible ground swath: 564 km centered on the satellite ground track (to ~30° off-nadir) Areas of interest: • Single Area: 18.0 km x 18.0 km • Strip: 18.0 km x 360 km	Nominal Swath Width: 18.0 km at nadir Accessible ground swath: 526 km centered on the satellite ground track (to ~30° off-nadir) Areas of interest: • Single Area: 16.8 km x 16.8 km • Strip: 16.8 km x 360 km
Attitude Determination and Control	Type: 3-axis Stabilized Star tracker/IRU/reaction wheels, C/A Code GPS	
Pointing and Agility	Accuracy: less than 0.5 milliradians absolute per axis Knowledge: less than 15 microradians per axis Stability: less than 10 microradians per sec Time to slew 200 km: 37 sec	38 sec
Onboard Storage	128 Gb capacity	
Communications	Payload Data: 320 Mbps X-band Housekeeping: X-band from 4,16 and 256 Kbps, 2 Kbps S-band uplink	
Revisit Frequency (at 40°N Latitude)	2.5 days at 1 m GSD or less 5.6 days at 20° off-nadir or less	2.4 days at 1 m GSD or less 5.9 days at 20° off-nadir or less
Metric Accuracy	23 m CE90, 17 m LE90 (without ground control)	

Collection Scenarios

(at nadir)



Sensor Bands

