

长光卫星技术有限公司  
CHANG GUANG SATELLITE TECHNOLOGY CO., LTD

CHANGGUANG SATELLITE TECHNOLOGY

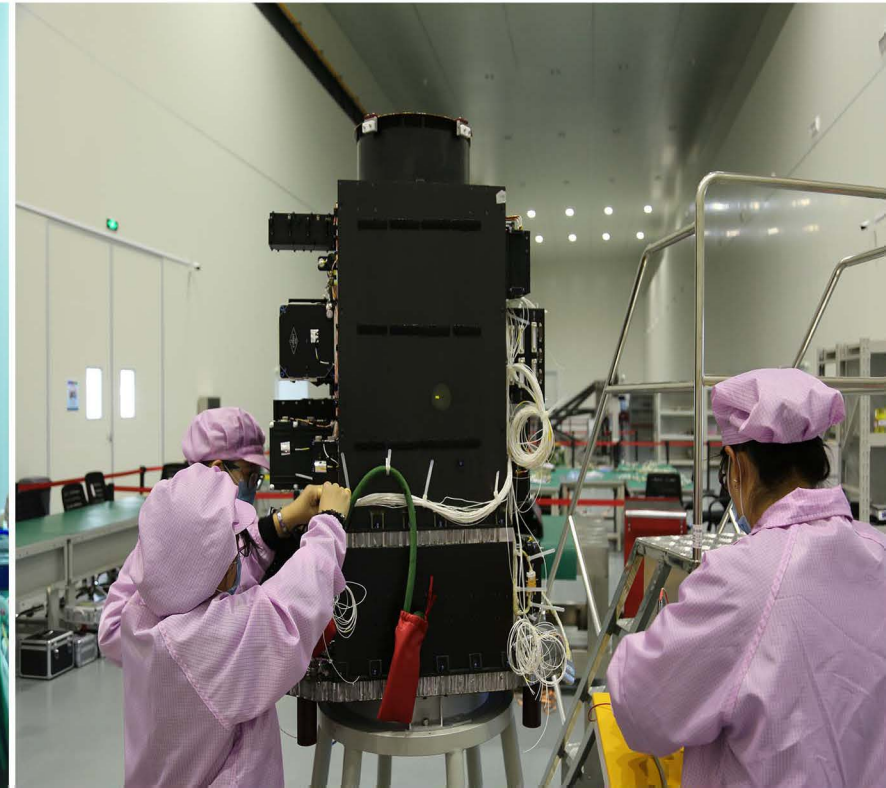


CG Satellite is a world-leading commercial satellite manufacturer, operator and information service provider. Upon its foundation on December 1st, 2014, CG has developed full industrial chain of products and services from satellite R&D to RS information provision based on its core technologies of satellite and optical payload, outputting 30 satellites and 200 UAVs annually. CG has set up long-term and stable cooperative partnerships with top satellite facilitators within worldwide, dedicating to offering quality products and services.

Jilin-1 constellation independently developed and operated by Chang Guang Satellite has so far composed of 14 satellites, who are capable of covering bands ranging from visible spectrum to LWIR, which can better suit demands from various scenarios. CG has been focused on offering standard data products such as Panchromatic, Multi-spectral, Nighttime, and Video images, providing both archived data and new-tasking services, highly catering to the using demands of clients.

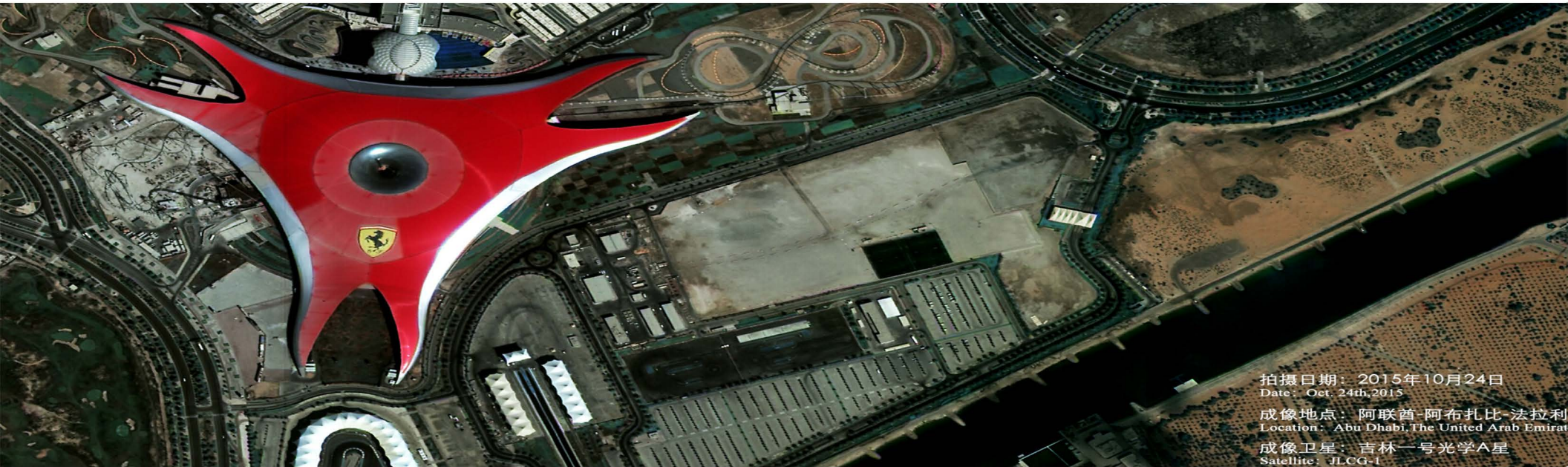
By 2020, 60 satellites will be launched into orbit, enabling the multi-orbit, multi-spectrum, and multi-type data accessing ability, realizing daily coverage of about 800 hot spots all over the globe with no more than 30-minute revisit to each location.

By 2030, 138 satellites will be launched into orbit, which enables the full-day, full-weather, full-spectrum data accessing ability and 10-minute revisit over any location on the globe, offering aerospace information products with the highest temporal & spatial resolution of the world.









拍摄日期：2015年10月24日  
Date: Oct. 24th, 2015  
成像地点：阿联酋-阿布扎比-法拉利  
Location: Abu Dhabi, The United Arab Emirates  
成像卫星：吉林一号光学A星  
Satellite: JLCG-1

Jilin-1 Optical A Satellite was successfully launched at JSLC on October 7, 2015, which is a high-resolution commercial remote sensing satellite developed by CG Satellite and still active in its orbit. Featured for its high resolution, multiple bands, short revisit, it can be extensively applied in fields like farming and forestry industry, resources management, environmental monitoring, land planing, geographic mapping with significant value.



### Spatial Resolution

Panchromatic 0.72 m  
Multispectral 2.88 m

### CE90

<200 m without GCP

### Dynamic Range

10 bits

### Revisit Cycle

3.3 days

### Spectral Bands

Panchromatic	612nm-794nm
Blue	457nm-526nm
Green	540nm-595nm
Red	628nm-688nm
Simulated NIR	700nm-800nm

### Orbit Height

650 km

### Mass Weight

420 kg

### Imaging Patterns

Conventional Push-Broom  
Large-ONA Imaging

### Orbit Type

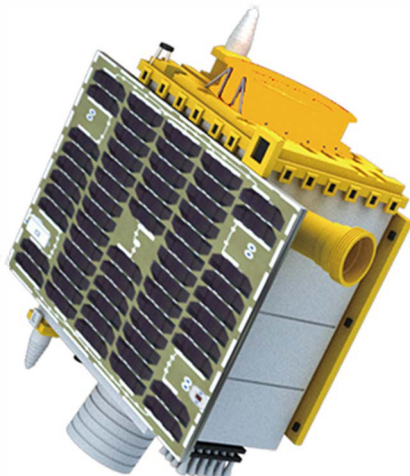
Sun-Synchronous

### Swath Width

11.6 km



Jilin-1 Video 01 & 02 Satellites launched at JSLC on October 7, 2015 are high-resolution commercial satellites developed by CG Satellite and still active in their orbit with 4k HD color video imaging capability. Compared with traditional earth observation satellite, they outstand by their longstanding dynamic and real-time monitoring. The agile and rapid maneuver ability help to adapt their observing area based on actual ground condition, facilitating the quick response to ground emergency and the real-time monitoring of disasters, which could be applied in various fields such as national defense, economy, and etc.



### Spatial Resolution

Video Imaging:  
1.13m(RGB)

### CE90

<200m without GCP

### Dynamic Range

8 bits

### Orbit Type

Sun-Synchronous

### Spectral Bands

RGB 430nm-720nm

### Revisit Cycle

3.3 days

### Swath Width

4.6 km \* 3.4 km

### Imaging Patterns

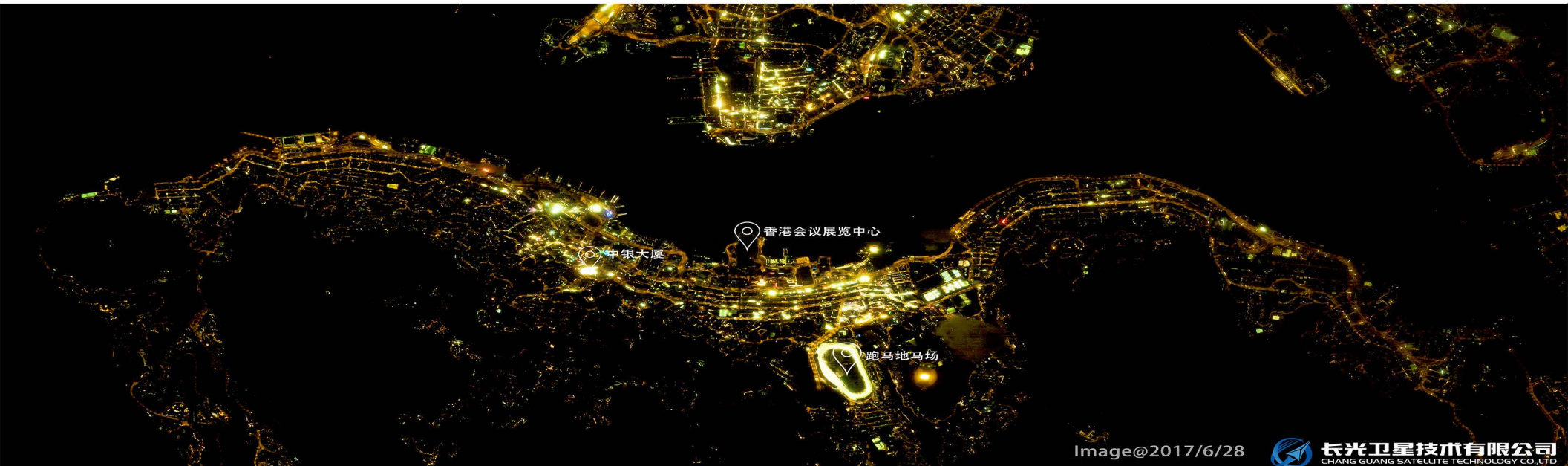
Gaze video imaging

### Orbit Height

656 km

### Mass Weight

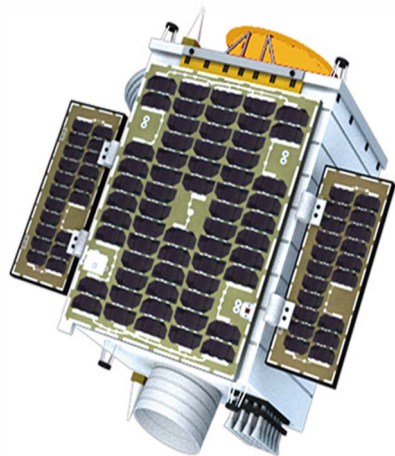
95 kg



Image@2017/6/28


 长光卫星技术有限公司  
CHANG GUANG SATELLITE TECHNOLOGY CO., LTD.

The primary mission of Smart Video 03 Satellite was to acquire earth-observing visible spectral video data of high resolution at a global scale. The satellite-borne integration design not only inherits the development technology and completes products of Jilin-1 Video 01 & 02, but the central computer, payloads, power supply. The data transmission have also been updated based on feedback from clients and the market, which has enhanced the operational performance and adopted air breathing propulsion system for orbit maintenance.



### Spatial Resolution

Multispectral 0.92m (RGB)

### CE90

&lt;200m without GCP

### Dynamic Range

8 bits

### Orbit Type

Sun-Synchronous

### Spectral Bands

Blue 410nm-500nm

Green 500nm-580nm

Red 580nm-690nm

### Revisit Cycle

3.3 days

### Swath Width

11 km \* 4.5 km

### Imaging Patterns

Gaze video imaging

Nighttime imaging

Stereo imaging

Space target imaging

### Mass Weight

165kg

### Orbit Height

535km



Jilin-1 Video 04, 05, 06, 07, 08 Satellites independently developed by CG Satellite were successfully launched into their orbit. Carrying with push-broom sensor and video sensor, they can provide push-broom static image, color video image, and nighttime image.



### Spatial Resolution

Video/Night-Time Imaging:  
0.92m (RGB)  
Push-broom imaging:  
0.92m (PAN);  
3.68m (RGB/Red-edge/NIR)

### CE90

<200m without GCP

### Dynamic Range

Push-broom: 12 bits  
Video/Night-time: 8 bits

### Spectral Bands

#### Video Camera

Blue 437nm-512nm  
Green 489nm-585nm  
Red 580nm-723nm

#### Push-broom Camera

Panchromatic 450nm-800nm  
Blue 450nm-510nm  
Green 510nm-580nm  
Red 630nm-690nm  
Red edge 705nm-745nm  
Near-infrared 770nm-895nm

### Imaging Patterns

Gaze video imaging  
Push-broom imaging  
Nighttime imaging  
Stereo imaging  
Space target imaging

### Mass Weight

208kg

### Orbit Height

535km

### Revisit Cycle

3.3 days

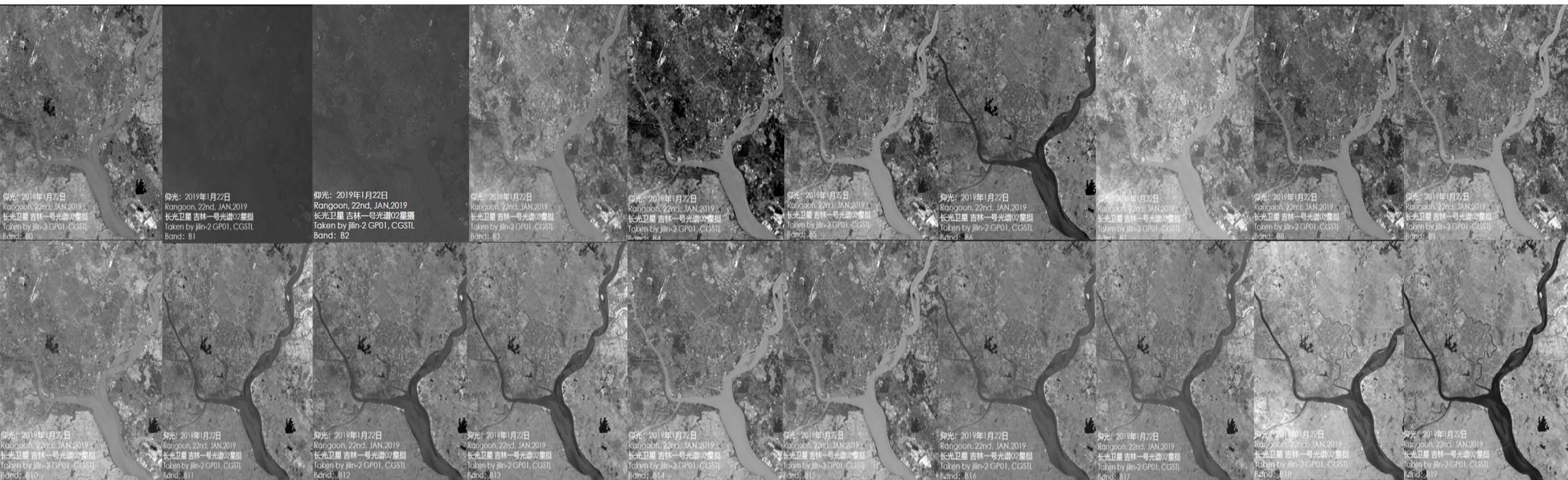
### Swath Width

Video/Nighttime:  
11km x 4.5km \* 2  
Push-broom: 19km

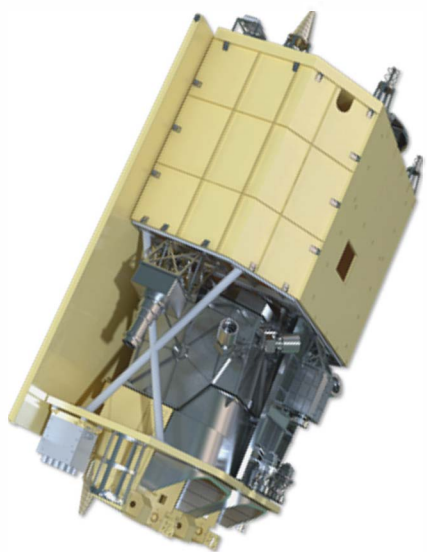
### Orbit Type

Sun-Synchronous





On January 21, 2019, CG successfully launched both Jilin-1 GP01 and GP02 Satellites at Jiuquan Satellite LaunchCenter. Both satellites are equipped with multi-spectral imagers, short-wave, medium-wave, long-wave infrared cameras and other loads. They adopt on-board intelligent processing system that can acquire remote sensing data of 5m resolution, 110km width and 26 spectrum segments.



## Spatial Resolution

PMS(20 Bands): 5m-20m  
 SWIR (4 Bands): 100m  
 MWIR (1 Band): 100m  
 LWIR (1 Band): 150m

## CE90

50m without GCP (PMS)

## Dynamic Range

12 / 14 / 16 bits

## Spectral Bands

PMS (B0-B19 Bands):  
 450nm~1040nm;  
 SWIR (SW1-SW4):  
 1195nm~1690nm;  
 MWIR (MW1 Band):  
 3700nm~4950nm;  
 LWIR (LWI Band):  
 7500nm~13500nm

## Imaging Patterns

Push-broom imaging  
 Nighttime imaging  
 Space target imaging

## Mass Weight

202 kg

## Orbit Height

528 km

## Revisit Cycle

2~ 3 days

## Swath Width

PMS: 58.7 \* 58.7km  
 SWIR/MWIR: 64 \* 64km  
 LWIR: 96 \* 96km

## Orbit Type

Sun-Synchronous

Spectrum	Starting-Cut-off Wavelength	GSD	Spectral Characteristics
B0	450nm ~ 800nm	5m	PAN Spectrum
B1	403nm ~ 423nm	5m	Sensitive spectrum to yellow substances
B2	433nm ~ 453nm	5m	Seaclanseast
B3	450nm ~ 515nm	5m	Blue
B4	525nm ~ 600nm	5m	Green
B5	630nm ~ 680nm	5m	Red
B6	784.5nm ~ 899.5nm	5m	Leaf Area Index
B7	485nm ~ 495nm	10m	Chlorophyll and other pigments
B8	615nm ~ 625nm	10m	Sediment discharge
B9	650nm ~ 680nm	10m	Peak spectrum of chlorophyll absorption
B10	698.75nm ~ 718.75nm	10m	Chlorophyll Fluorescence reference spectra
B11	732.5nm ~ 747.5nm	10m	Red-edge spectrum
B12	773nm ~ 793nm	10m	Leaf Area Index
B13	855nm ~ 875nm	20m	Sensitivity to chlorophyll, biomass and LAI
B14	660nm ~ 670nm	20m	Chlorophyll, sediment transport, sediment
B15	677.5nm ~ 685nm	20m	Peak Spectrum of Chlorophyll Fluorescence, Red Edge Spectrum
B16	750nm ~ 757.5nm	20m	O2 Absorption Reference Spectrum
B17	758.75nm ~ 762.5nm	20m	O2 Absorption spectrum
B18	935nm ~ 955nm	20m	Steam correction
B19	1000nm ~ 1040nm	20m	Atmospheric and aerosol correction
SW1	1195nm ~ 1225nm	100m	Judgment of Water Content and Health Status of Plant Canopy
SW2	1360nm ~ 1390nm	100m	Detection of High-altitude Ice Clouds and Convolutional Clouds
SW3	1550nm ~ 1590nm	100m	Water Contentof Plantsand Crops,SmokePenetration,Soil Moisture, Cloud and Snow Discrimination,DroughtMonitoring
SW4	1610nm ~ 1690nm	100m	Smoke Penetration, Fire Point Recognition, Cloud and Snow Discrimination
MW1	3700nm ~ 4950nm	100m	Fire point recognition
LW1	7500nm ~ 13500nm	150m	Surface Temperature Monitoring and Fire Prevention Warning



On June 5, 2019, CG successfully launched Jilin-1 GF 03A Satellite from the Yellow Sea. Jilin-1 GF 03A Satellite is a new generation of optical remote sensing satellite independently developed by CG with innovative technology such as lightweight structural design, highly integrated electronics system, high-resolution ,ultra-lightweight,low-cost camera, featured for its low cost, low power consumption, light weight, and high resolution.



## Spatial Resolution

Panchromatic 1.06 m  
Multispectral 4.24 m

## CE90

50m without GCP (PMS)

## Dynamic Range

12 bits

## Spectral Bands

Pan 450nm-700nm  
Blue 450nm-510nm  
Green 510nm-580nm  
Red 630nm-690nm  
NIR 700nm-800nm

## Orbit Height

572 km

## Imaging Patterns

Push-broom imaging  
Space target imaging

## Mass Weight

40 kg

## Swath Width

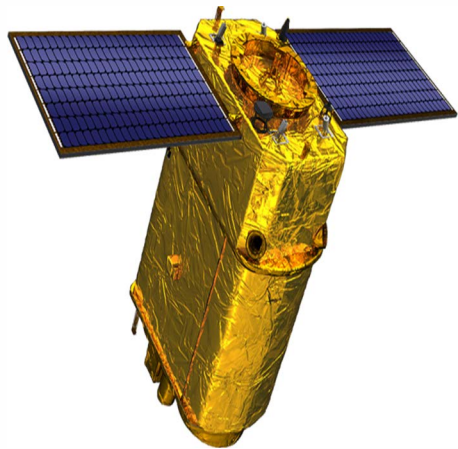
18.5 km

## Orbit Type

Sun-Synchronous



CG has successfully launched Jilin-1 GF02A (on Nov.13, 2019) and Jilin-1 GF02B (on Dec.07, 2019), both of which are new type of optical remote sensing satellites with equivalent specifications independently developed by CG Satellite. They adopt long focal length optical dual camera common reference adjustment, combined with dual-frequency GNSS orbit determination and high-accuracy dual-satellite smart positioning technology, so as to achieve an optimal combination of high resolution, wide width and high positioning accuracy without GCPs, featured as high resolution, wide width, high positioning accuracy, high-speed digital transmission, and etc.



### Spatial Resolution

Panchromatic 0.75 m  
Multispectral 3 m

### CE90

20m without GCP

### Dynamic Range

12 bits

### Spectral Bands

Pan 450nm-800nm  
Blue 450nm-510nm  
Green 510nm-580nm  
Red 630nm-690nm  
Near-IR 770nm-895nm

### Orbit Height

535 km

### Imaging Patterns

Push-broom imaging

### Mass Weight

230 kg

### Swath Width

42 km

### Orbit Type

Sun-Synchronous



WEB: [www.cgsatellite.com](http://www.cgsatellite.com)

EMAIL: [market@cgsatellite.com](mailto:market@cgsatellite.com)/[kevin@cgsatellite.com](mailto:kevin@cgsatellite.com)  
[stephanie@cgsatellite.com](mailto:stephanie@cgsatellite.com)

TEL: +86 17331684091

#1299 Mingxi Road, Beihu Technology Development Zone,  
Changchun City, Jilin Province, China