



GF-3 SATELLITES

Three Satellites, SAR, 1 m Resolution, 12 Modes, Full Polarization, C-band

GF-3 (short for Gaofen-3) is composed of three satellites. The satellite is equipped a multi-polarized C-band Synthetic Aperture (SAR) at meter-level resolution. Its Imaging modes include spot mode, strip-map mode, and scan mode. GF-3 was launched on August 10, 2016, it is the first Chinese high-resolution SAR satellite to acquire multi-polarized SAR image with resolution of 1-500 m, and the imaging swath is 10-650 km depending on the varied imaging modes. GF-3 02 and 03 were successively launched on November 23, 2021, and April 7, 2022, they are GF-3's follow-on satellites and provided with very close parameters. The three satellites work as a constellation, doubling the collection and enhancing the revisit capacity.

Technical Specifications

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|------------------------|--|-----------------------|---------------------|---------------------|--------------------|------------------------|------------------------|------------------|-----------------|-------------------------|
| Number of satellites | 3 satellites: GF-3, GF-3 02 and GF-3 03 | | | | | | | | | |
| Mission life | 8 years | | | | | | | | | |
| Weight | 2800 kg | | | | | | | | | |
| Launch time | GF-3: August 10, 2016; GF-3 02: November 23, 2021; GF-3 03: April 7, 2022 | | | | | | | | | |
| Orbit | 631 km altitude, Sun-synchronous repeat orbit, equatorial passing time 6:00 am (descending pass), 6:00 pm (ascending pass) | | | | | | | | | |
| Centre frequency | 5.4GHz (C-band) | | | | | | | | | |
| Polarization | Single, dual and full | | | | | | | | | |
| Revisit capacity | Single look: ≤5 days; double look, 10 m resolution and 100 km swath: 1.5 days (single satellite) | | | | | | | | | |
| Imaging Range | South latitude 5°~North latitude 53°, East longitude 70°~West longitude 150° | | | | | | | | | |
| Imaging modes | Spotlight (SL) | Ultra fine strip(UFS) | Fine strip 1 (FS 1) | Fine strip 2 (FS 2) | Standard strip(SS) | Full polarized strip 1 | Full polarized strip 2 | Narrow scan(NSC) | Wide scan (WSC) | Global observation scan |
| Resolution (at nadir) | 1 m | 3 m | 5 m | 10 m | 25 m | 8 m | 25 m | 50 m | 100 m | 500 m |
| Swath width (at nadir) | 10*10 km ² | 30 km | 50 km | 100 km | 130 km | 30 km | 40 km | 300 km | 500 km | 650 km |
| Incidence angle | 20°-50° | 20°-50° | 19°-50° | 19°-50° | 17°-50° | 20°-41° | 20°-38° | 17°-50° | 17°-50° | 17°-53° |

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