



# Gaia-200/300/400

Multi Mission Ground Stations for LEO and MEO  
Satellite Tracking



## The Natural Choice for Your Next Ground Station

The Gaia-200/300/400 series of products is uniquely equipped to address the most demanding challenges of LEO and MEO satellite tracking. The Gaia family offers a wide range of tracking systems, with antennas ranging from 2.4 to 11 meters. ORBIT's highly accurate tracking systems are proven to guarantee a stable and highly efficient data link throughout the satellite pass, even under heavy winds and in harsh environments. Thousands of satisfied customers worldwide rely on ORBIT for their satellite tracking needs. Our experience and unsurpassed track record across a diverse range of applications make ORBIT the natural choice for your next earth observation ground station. ORBIT's comprehensive support covers consulting, development, deployment, training and various warranty programs tailored to fit your needs.



**Gaia-200**

3.7 to 5.5 meters



**Gaia-300**

6.3 to 7.3 meters

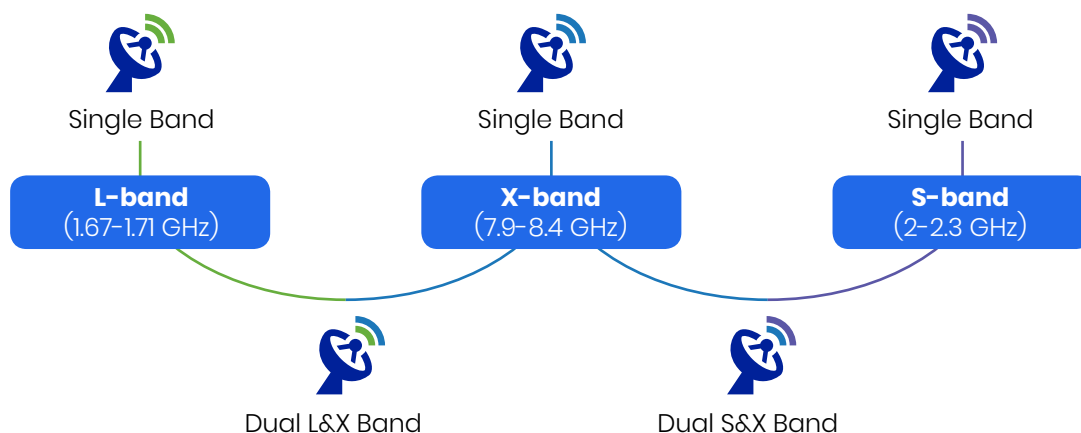


**Gaia-400**

9 to 11 meters

## Pushing Technology to New Edges

The Gaia family is based on advanced elevation over azimuth pedestal technology with tilt correction to assure full hemispherical coverage with no keyhole at zenith. Each system is equipped with a high-efficiency feed to support industry standard bands. The Gaia series of products offers single band and dual band feeds. Moreover, ORBIT's patented auto-tracking concentric cavity feed technology assures superior G/T performance.



### The ORBIT Advantage



**End-to-end solution**  
Including tracking antenna,  
mission controller and data receiver



**Unsurpassed accuracy**  
Featuring ORBIT's Advanced Control  
Loop™ algorithm to meet the rigorous  
accuracy requirements of Ka-band

## Gaia Ka-Ready™ Technology

While future earth observation satellites will use Ka-band as a standard for high bandwidth communication with the ground station, Ka-band also introduces technical challenges, particularly for large aperture antennas. ORBIT's Advanced Control Loop algorithm is embedded in all Gaia products, delivering maximum system accuracy to support the rigorous Ka-Band requirements. Gaia's Ka-ready technology ensures that your ground station is equipped to accommodate the next generation of satellites\*.

## Applications

ORBIT offers a range of solutions for any scale – from highly accurate tracking antennas all the way up to a complete turnkey ground station solution that includes high data rate receivers, mission control software and more.

The Gaia ground stations operate under extreme environmental conditions to meet the needs of a broad range of challenging applications such as:



Weather monitoring



Disaster monitoring and control



Search and rescue missions



Surveillance for military and homeland security



Oil and gas exploration



Land Mapping

### Features

- Elevation over Azimuth technology
- Tilt correction eliminates keyhole at zenith
- Single and dual band feeds designed for max G/T
- Dual polarization RHCP/LHCP
- Indoor/outdoor antenna controller for mission planning
- Self-diagnostic system

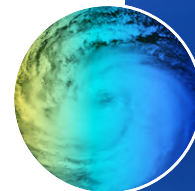
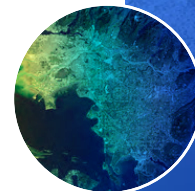
\*Replacing a reflector and feed is required



**Fully commercial product**  
Designed without commercial restrictions



**World-class customer support**  
A multi-national company with global presence, ORBIT delivers fast response and on-site support



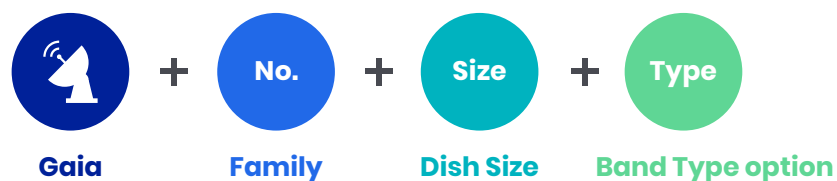
# Gaia-200/300/400 Typical System Specifications

	Gaia 200 – 5.5	Gaia 300 – 7.3	Gaia 400 – 11
Parameters	Specifications		
<b>Antenna</b>			
Diameter	5.5m	7.3m	11m
Frequency Range	L-band Receive: 1.67-1.71 [GHz] S-band Transmit: 2-2.15 [GHz] S-band Receive: 2.2-2.3 [GHz] X-band Receive: 7.9-8.4 [GHz]		
G/T	L-band: 16.2 [dB/°K] S-band: 18.2 [dB/°K] X-band: 30.5 [dB/°K]	L-band: 19.1 [dB/°K] S-band: 21.1 [dB/°K] X-band: 32.4 [dB/°K]	L-band: 22.9 [dB/°K] S-band: 24.6 [dB/°K] X-band: 36.1 [dB/°K]
<b>Environmental conditions</b>			
Operating Temperature Range	-25°C to +55°C [Optional -40°C to +60°C]		
Storage Temperature Range	-40°C to +70°C		
Operating Relative Humidity (including condensation)	100% @ 25°C		
Rain	<150 [mm/Hour]		
Ice (Survival)	up to 13 [mm/radial]		
Wind Speed – Operating	90 km/h	80 km/h	80km/h
Wind Speed Non-Operating – Transport, Survival Both axes stowed, with elevation axis at zenith (90°)	200 [Km/Hour]		
<b>Mechanical Specifications</b>			
Peak Velocity	Elevation: 10[deg/Sec] Azimuth: 15 [deg/Sec]		
Peak Acceleration	Elevation: 10[deg/Sec²] Azimuth: 10 [deg/Sec²]		
Limit-to-Limit Travel Azimuth (when using cable wrap)	±360°		
Limit-to-Limit Travel Elevation	-7 up to +187 [deg]		
Weight	3,500 [kg]	9,000 [kg]	18,000kg
<b>Power Requirements</b>			
Power Consumption**	10 [KVA] max	25 [KVA] max	92 [KVA] max
AC Inpu	3 phases 230/400 V		
<b>System Connections</b>	Power cables, Ethernet UTP CAT-5E, RF cables		

\*All measurements are subject to change without prior notification;

\*\* Assuming simultaneously operation of azimuth and elevation axes.

## How to order:



Example: Gaia - 200- 4.5-X  
diameter 4.5 meter - feed type X-Band

## Dish Size

Gaia 200	Gaia 300	Gaia 400
3.7 m	6.3 m	9.0 m
4.5 m	7.3 m	10.0 m
5.0 m		11.0 m
5.5 m		

## Band type

Single Band	Dual Band
L - band	LS - L&S BandS
S - band	SX - S&X BandS
X - band	LX - L&X BandS