



Gaia™ 100

LEO/MEO satellite tracking ground stations
for business- and mission-critical applications

**Maximum performance.
Minimum footprint.**



Make your data count - every time

Today, more than ever, Earth Observation (EO) has become an essential part of our daily activity. The earth is constantly monitored, analyzed and measured by governmental agencies, defense forces and the private sector. From weather forecasting to disaster control and oil and gas exploration, earth observation data is vital to a host of applications that profoundly affect our lives.

Low Earth Orbit (LEO) and Medium Earth Orbit (MEO) satellites are constantly encircling our globe, providing visible imaging, radar screening and spectral analysis of our planet. To benefit from the data captured by these satellites, a fast and reliable communications link must be established between the moving satellites and the earth. Communication can only be established when there is a line of sight between the satellite and the ground station. For LEO satellites, this communications "time window" typically lasts only a few minutes, so the goal is to get the most out of it.

Important decisions depend on the reliability of such communications links and there are no second chances. Orbit's LEO/MEO ground station solution for business- and mission-critical applications was designed specifically to make sure you never lose crucial data.

Gaia™ 100 family

Supporting today's and tomorrow's needs

With more than 30 years of experience and an extensive global installed base, Orbit has developed the ultimate ground station to address the EO needs of its customers. The company's Gaia 100 family is comprised of cost-effective, high performance ground station systems capable of capturing data from LEO and MEO satellites.

The Gaia 100 family supports three antenna sizes:



Gaia 100 2.4m



Gaia 100 3.7m



Gaia 100 4.5m

Key features

- No "key hole", for continuous tracking
- Real 3-axis system – EL, Tilt and AZ for higher availability and reliability
- Built in Advanced Control Loop™, Step track based for supreme performance
- Innovative GaiaLink™ software, for maximum flexibility
- Radome covered, for anytime/anywhere operation
- Short lead time
- Multiple configurations (from L to K-band) in a single platform
- Mature product with multiple installations around the globe

The Orbit advantage



End-to-end solution

Including tracking antenna, mission controller and data receiver

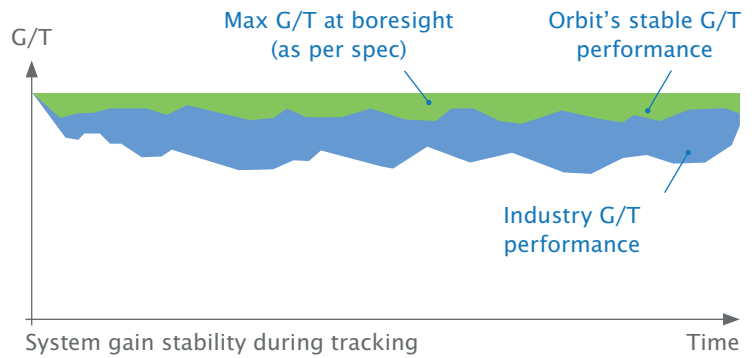


Unsurpassed accuracy

Featuring Orbit's Advanced Control Loop™ algorithm for RF Tracking

Tracking superiority

The combination of Orbit's Advanced Control Loop™ algorithm and integrated RF tracking meets the demanding accuracy requirements of the Ka-band frequency range, ensuring that your ground station is ready for next-generation satellites. Gaia's boresight pointing capability (the ability to pinpoint the center of a moving target) ensures maximum (G/T) reception performance while tracking the satellite.

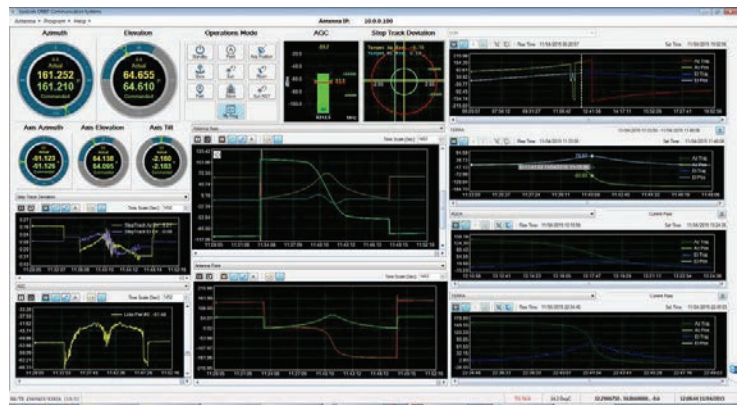


Gaia 100 features a dual S/X feed that supports simultaneous or switchable RHCP and LHCP polarization. It typically uses X-band for downloading data from the satellite and S-band for the control and monitor management channel in both receive and transmit modes. A single band feed is also available (S- or X-band). All antennas are designed to ensure continuous operation even when the LEO tracking path is at its zenith.

All Gaia ground stations come equipped with a ruggedized radome that enables them to withstand even the harshest environmental conditions.

GaiaLink™ software key features

- Ability to monitor and control one or many ground stations at once
- Advanced graphical user interface
- Secured SCP for host antenna file transfer (TLE, routing, scheduling, SW upgrades)
- Scheduler option for automatic "send & forget" antenna action plan
- Colored indicators for AGC signal levels
- SDK for easy user program interface
- Easy and intuitive configurable desktop
- User-defined multiple views
- Advanced high accuracy antenna log limited only by disk space



Applications

Orbit's globally installed tracking systems operate under extreme environmental conditions to meet the needs of a broad range of challenging applications, including:



Weather forecasting



Disaster monitoring and control



Search and rescue missions



Surveillance for military and homeland security



Oil and gas exploration



Land mapping



Fully commercial product

Designed without commercial restrictions



World-class customer support

A multi-national company with global presence, Orbit provides fast response and on-site support

Gaia 100 system specifications

	Gaia 100 2.4m	Gaia 100 3.7m	Gaia 100 4.5m
Parameters	Specifications		
Antenna			
Diameter	2.4 m (7.9 ft)	3.7 m (12.1 ft)	4.5 m (14.7 ft)
Frequency Range	S-Band Transmit: 2020-2120 MHz S-Band Receive: 2200-2300 MHz X-Band Receive: 7900-8400 MHz Optional X-Band (7700 – 8500 MHz) Optional S-Band (2400-2500 MHz)		
G/T (including radome loss)	S-Band: 9[dB/°K]; X-Band: 21.5[dB/°K]	S-Band: 12.8[dB/°K]; X-Band: 25.4[dB/°K]	S-Band: 14.5[dB/°K]; X-Band: 27.1[dB/°K]
Environmental Conditions			
Wind Operational/Survival	Up to 185 Km/hour (115 miles/hour)		
Temperature Range	Operational: -25°C to +55°C (-13°F to +130°F), (-40°C/-40°F optional) Storage: -40°C to +70°C (-40°F to +158°F)		
Altitude	Operational: 6,300 meter (20,000 ft) Transportation: 12,600 meter (40,000 ft)		
Rain	IP rating X6 (radome enclosed)		
Mechanical Specifications			
Max Velocity	20°/sec	10°/sec	5°/sec
Max Acceleration	10°/sec ²	5°/sec ²	5°/sec ²
Weight (Including Radome)	800 Kg (1764 lb)	1100 Kg (2400 lb)	1500 Kg (3300 lb)
3 Axis	Az -> Continuous rotation Elevation -> 0-90° Tilt -> ±30°		
Radome Size	Base Diameter: 2.1 m; Height: 3.0 m	Base Diameter: 3.0 m; Height: 4.3 m	Base Diameter: 4.3 m; Height: 5.0 m
Power Input	90-130VAC or 200-250VAC 50/60Hz		
Safety	EN 60204-1, ISO 12100-2, EN 614-1, IEC 60945:2002		

HOW TO ORDER:


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Gaia 100 **Dish Size** **Band Type**

Band types (partial configuration table)

S&X Full Simultaneous	X-Band Manual
S&X Full Switchable	X-Band Switchable
X RHCP/LHCP S Switchable	Ka-band RHCP or LHCP
L & S Switchable	S-Band Switchable
S&X Manual	X RHCP Only
Ka-band Switchable	X LHCP Only

* Additional configurations are available. For more information, visit www.orbit-cs.com.

