INTELLIGENT TRACKING SYSTEM
High Performance Total Solution
Compatible with 600W+ Ultra-High-Power Modules
**Independent Horizontal Single-Axis Tracker**

- 2 in portrait, specifically engineered for ultra-high-power modules up to 670W with multidrive for greater stability
- Up to 120 modules per tracker
- Up to 9% yield gain with Supertrack Algorithm
- Optimized terrain adaptability up to 15% N/S
- 1.02 piles per MW for lower installation cost and system BOS
- Best for challenging sites such as irregular layout, undulated terrain, and high wind regions
- Independent row design for easier accessibility of O&M vehicles

**Dual Row Horizontal Single-Axis Tracker**

- 1 in portrait, specifically engineered for ultra-high-power modules up to 670W and enhanced bifacial yield gain
- Up to 120 modules per tracker, fewest motors/controller/battery per MW (save Capex & Opex)
- Up to 8% yield gain with Supertrack Algorithm
- Optimized terrain adaptability: 20% N/S, 10% E/W
- Tracking Range: ±60°
- Best for less challenging sites
- Unique tracker configuration for easier accessibility of O&M vehicles
Comprehensive and Integrated Design of Modules and Trackers

The compelling large format module evolution was deemed to directly trigger a new generation of trackers. Updated dimensions, weight and electrical characteristics of modules demand trackers with larger table, which leads to amplifying external load and the resultant reinforced structure. Trina has coordinated internally and developed trackers along with its Vertex Module, which ensures Agile and Vanguard to be advantageously compatible with large format modules and economically optimized for system design.
High Reliability
Wind Tunnel Test

Design Validation from Wind Tunnel Test by Global Authoritative Agencies
The complex aeroelastic effects on solar system has imposed extra difficulty on tracker reliability design, one of which is torsional fluttering. It causes unpredictable and escalating amplitude vibration to tracker table and leads to inevitable structure failure in the end. To overcome this obstacle, TrinaTracker collaborated with renowned agencies (RWDI and CPP) to conduct a series of wind tunnel tests for continuous tracker design improvement. The optimized components and reinforced structure guarantee lower failure risk and better system stability.

One of the best wind tunnel test laboratories in the world
To evaluate the accurate wind load distribution over modules on the (Vanguard 2P) tracker

One of the best wind tunnel test laboratories in the world
To evaluate the (Agile 1P) structural reliability from multiple tilt angles under various wind speeds

3D Flutter Stability Analysis
Determine trackers critical wind speed by torsional fluttering analysis regarding structural failure threshold

3D Buffeting Response
Obtain full-scale peak response and enhance structural design correspondingly

Optimize Product Design through Wind Tunnel Test:
- Strengthened external structure
- Increase the natural frequency of trackers
- Multidrive
- Formulation of wind protection strategies for different products
- Strengthen torque tube, pile, and material
- Reinforced design of purlin and torque tube connection
High Reliability - Multidrive

The latest multidrive technology maintain good working conditions under higher external load.

Self-locking function
Multidrive, each drive device has a self-locking function, which can effectively reduce the impact of gust wind.

Effectively Reduce Torsional Load from Fluttering
Multidrive equivalently splits the entire tracker into multiple smaller single drive trackers whose torsion arm is shorter and resulting torsional load is lower.

High Synchronization
Adopting single motor mechanism where output power from primary drive is simultaneously transferred to both secondary drives via transmission bar to achieve higher system synchronization but lower failure rate than multi-motor design.

Strong Flexibility
Special cardan design is adopted between the transmission bars, with strong rectifying ability and easy installation.
High Stability
Equipped with Patented Structural Component

Global Exclusive Patented Spherical Bearing

30%
High stability
Equipped with patented spherical bearings with angle adjustability up to 30%

Polymer material
- UV resistance, corrosion resistance, self-lubricating system
- Reduce operation and maintenance costs

Multiple mounting holes
- Easy to install
- Adjust construction error

The spherical bearing has a self-adjusting function, which can automatically rectify deviations caused by installation, correct errors generated during EPC installation and construction, and alleviate the harm caused by uneven foundation settlement during the life cycle of the tracker.

Patented Module Mounting Component: Trina Clamp

-50%
Innovative Trina Clamp installation
Save 50% installation time
High Reliability
Suitable for Harsh Environments

TrinaTracker products, withstanding high wind and heavy snow confrontation attributed to extreme weather mitigation strategy, survive themselves in harsh environments such as hot and humid places, chilling regions, and corrosive areas. Therefore, TrinaTrackers are applicable in various circumstances such as desert, plain and hilly terrain, as well as solar projects with agricultural features and aquaculture features.

Compatible with mainstream wattage
(400W - 600W+)
modules in the market

High altitude and low temperature climate
3200m / -30°C

High corrosion area
Salt Mine Environment

Qinghai UHV Project, China
Location: Hainan island, Qinghai province
Capacity: 600MW
Environment: High altitude: 3200m!
Low temperature: Down to -30°C

Miraflores Project
Location: Los Angeles, Panama and other places
Capacity: 33MW
Environment: Highly corrosive: 3km away from the salt mine

Clare Project, South Australia
Location: Clare, South Australia
Capacity: 120MW
Environment: Complex soil condition: expansive clay
High wind region, hurricane zone, wind speed is up to 212 km/h (class 17 typhoon)

Cobra Solar Park Project, Spain
Location: Spain
Capacity: 190MW
Environment: High temperature 44°C, large terrain slope: over 12%
Increase Power Generation
SuperTrack Intelligent Tracking Algorithm

**SuperTrack**

**Increase Power Generation**

3~8%

(the following data is derived from Tongchuan project in Shaanxi province.)

TrinaTracker is one of the first vendors that offers optimizing tracking algorithm for “bifacial + tracking” system in the industry, focusing on capturing the combination of direct illumination + rear sunlight reflection + rear scattering irradiance. Based on the patented model of Trina Solar’s bifacial irradiation technique combined with advanced information collection technology and artificial smart algorithms, SuperTrack dynamically optimizes the tracking angle according to the real-time weather conditions and system parameters which will ultimately realize a substantial yield gain in bifacial applications.

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**Case Study**

30MW Tongchuan (China)

**LCOE REDUCED BY**

2.44%

**POWER GENERATION**

+17%  
Compared with fix tilt

+3.08%  
Compared with conventional tracking

**LCOE**

-5.83%  
Compared with fix tilt

-2.44%  
Compared with conventional tracking

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**Project**  
Tongchuan 30MW, China

**Location**  
35.16°N, 109.17°E

**Working temperature**  
-21°C ~ 39.7°C

**Radiation**  
1300kWh/m² ~ 1400 kWh/m²

**Wind speed**  
0.20kN/m² (10 years once)

**Site condition**  
grassland

**AC Capacity**  
30MW

**Terrain**  
The height difference between both ends of the tracker is about 0-30 cm

**Test for 30 days**  
Sunny 24 days, cloudy 6 days

**Module**  
TSM-NEG66MC.20(JL) bifacial 335W module

**Tracker**  
SP160 2P, pitch is about 9 meters

**Inverter**  
Huawei SUN2000-175KTL inverter, 9 trackers per inverter, 2 strings per tracker, 32 modules per string
Low O&M Cost - SCADA System

TrinaTracker SCADA System

TrinaTracker SCADA is a new-generation smart visualized monitoring and control system. This enhanced system can effectively reduce tracker down time under a variety of weather conditions, diagnosis a real-time tracker problems and perform troubleshooting to irregularly operating tracker.
Easier Overall Solution
Integration of Modules and Trackers Channel, Products and Services

Module Sales + Tracker Sales
Unified Business Channel

Unified service and quality assurance channel
- Unified sales and after-sales service channel
- Unified quality assurance subject

Unified plan design channel
- Project design
- Equipment sizing
- Layout optimization
- System integration

Business Globalization

Spain
- Cobra Solar Park
- 190MW
- Mountain and hilly area

China
- Huanghe Hydropower
- 600MW
- Desert

Australia
- Clare
- 120MW
- Maximum wind speed level 17

United States
- Grasshopper
- 103MW
- Uneven terrain

Chile
- Capricornio
- 100MW
- Hot and humid area

6GW+
Global Installation Scale

Offices & Branches
Spain, France, United States, Brazil, Chile, Argentina, UAE, Mexico, Australia, China

Production center
Spain, Brazil, Argentina, China

12 YEARS
Over 12 years of experience

6GW+
Cumulative delivery

40 COUNTRIES
On five continents

8GW+
Global production capacity in 2021