

SMART  
SOLUTION



# ROOFTOP PHOTOVOLTAIC POWER GENERATION SOLUTIONS OF THE INDUSTRIAL PARKS

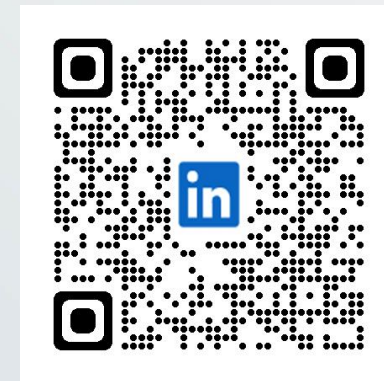
# POWERNICE

  
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## Company Profile

- Ningbo Powernice Intelligent Technology Co., Ltd. is a photovoltaic technology enterprise established in Ningbo Fenghua Binhai New Area Development Zone. The company was founded in 2018. In 2021, the company headquarters moved to Ningbo, Ningbo Powernice Intelligent Technology Co., Ltd. was established, and the A round of financing was completed in May. Jinpu Pengyuan (Zhejiang Industrial Fund) led the investment, Ningbo Angel Investment Fund and Ningbo Venture capital funds followed the investment; completed the B round of financing in December, Zhejiang Aluminum Junrong (China Aluminum Group) led the investment, and Norden Ventures followed the investment.
- Powernice now has a total of 27,000 square meters of production, R&D, and office areas. There are production bases and branches in the United States, Vietnam, Shenzhen, Dongguan, and other places, with a variety of advanced research and development, experimental, testing and production facilities. The main products are industrial-grade high-precision intelligent electric actuators and supporting systems, which are widely used in the automatic tracking system of large-scale ground photovoltaic power plants at home and abroad to help photovoltaic power plants increase the effective power generation time and effective power generation (10-25%).



# Company Profile



- In the context of global carbon neutrality, the company is developing rapidly. Full-year sales this year are expected to increase by more than 314% over the last year, and products have been sold to project locations in more than 20 countries on five continents.
- Powernice has a high-end talent team in various fields of photovoltaics to provide customers with "one-stop" new energy power generation supply solutions. Meanwhile, not only to provide customers with project consulting, design, and installation construction but also to provide customers with photovoltaic power generation project grid connection application services, the customer only needs to confirm the information to complete the grid-connected power generation and enjoy the green energy benefits brought by the photovoltaic grid-connected power generation system in the ceramic industry.



## Rooftop PV Generation Solutions - Automatic Tracking

Powernice has been committed to promoting the upgrade of photovoltaic tracking technology to achieve more efficient green energy. At present, the application of automatic tracking technology on rooftop photovoltaic power generation is still in the early stage in the world. The automatic tracking roof photovoltaic power generation system is the next field to be developed, with huge potential.

The intelligent linear tracker used by the automatic tracking technology can be used in the solar panel/reflector tracking system, and cooperate with the controller to push the bracket mechanism to keep the panel/reflector always perpendicular to the sunlight. Compared with the traditional fixed photovoltaic system, it can bring a 15%~20% increase in power generation for photovoltaic power plants, and in some low-latitude areas with abundant light resources, it can bring a 20% or even more than 30% increase in power generation.



# Rooftop PV Generation Solutions - Automatic Tracking

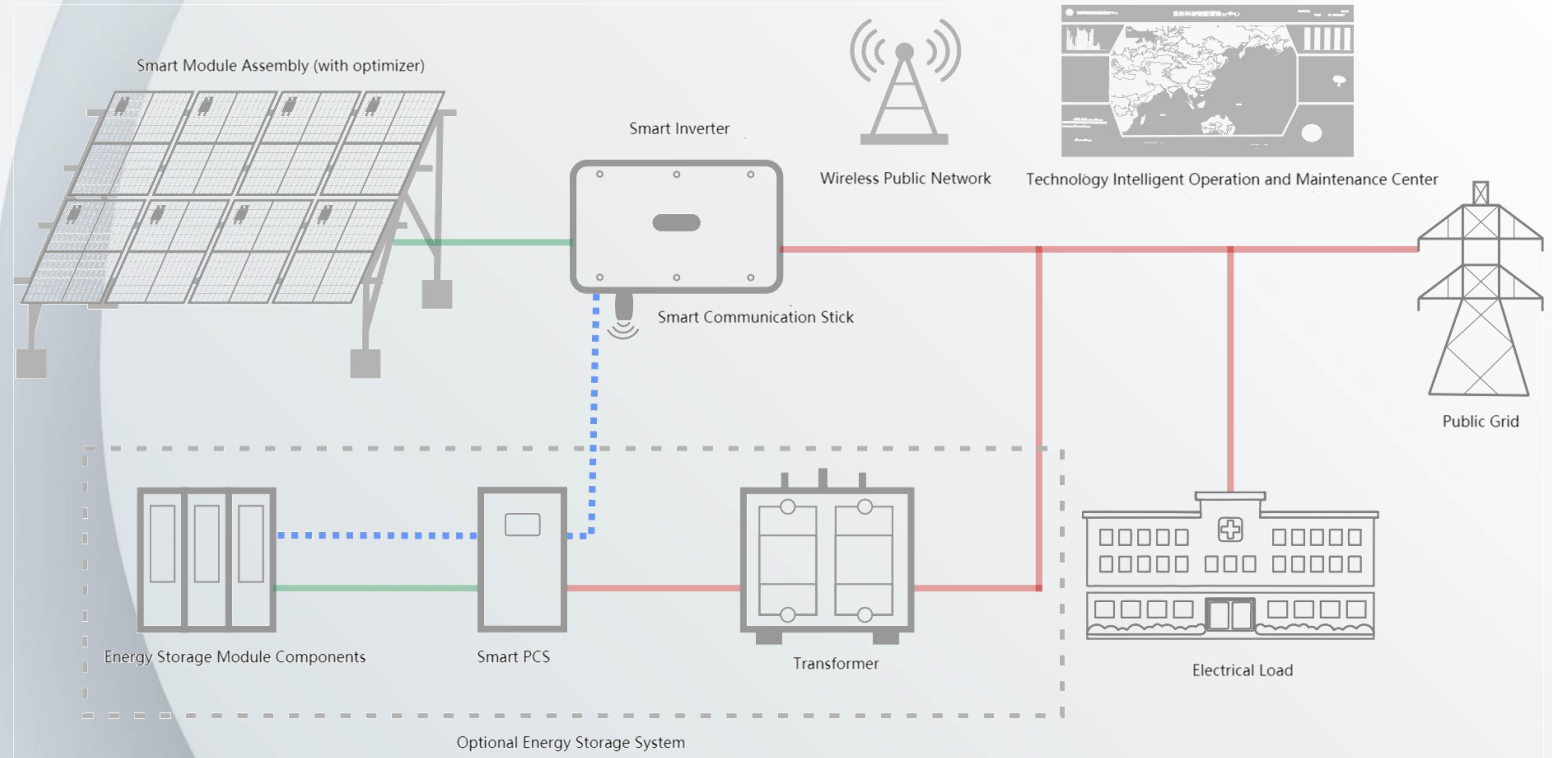
Roof photovoltaic power generation mainly refers to the installation of solar power generation systems on the roof of factories.

Features:

Component-level monitoring to ensure optimal power generation performance

Mobile APP + cloud center platform, accurate positioning at the first time when a fault occurs

Upgradable energy storage modules, shaving peaks and filling valleys, reducing electricity bills

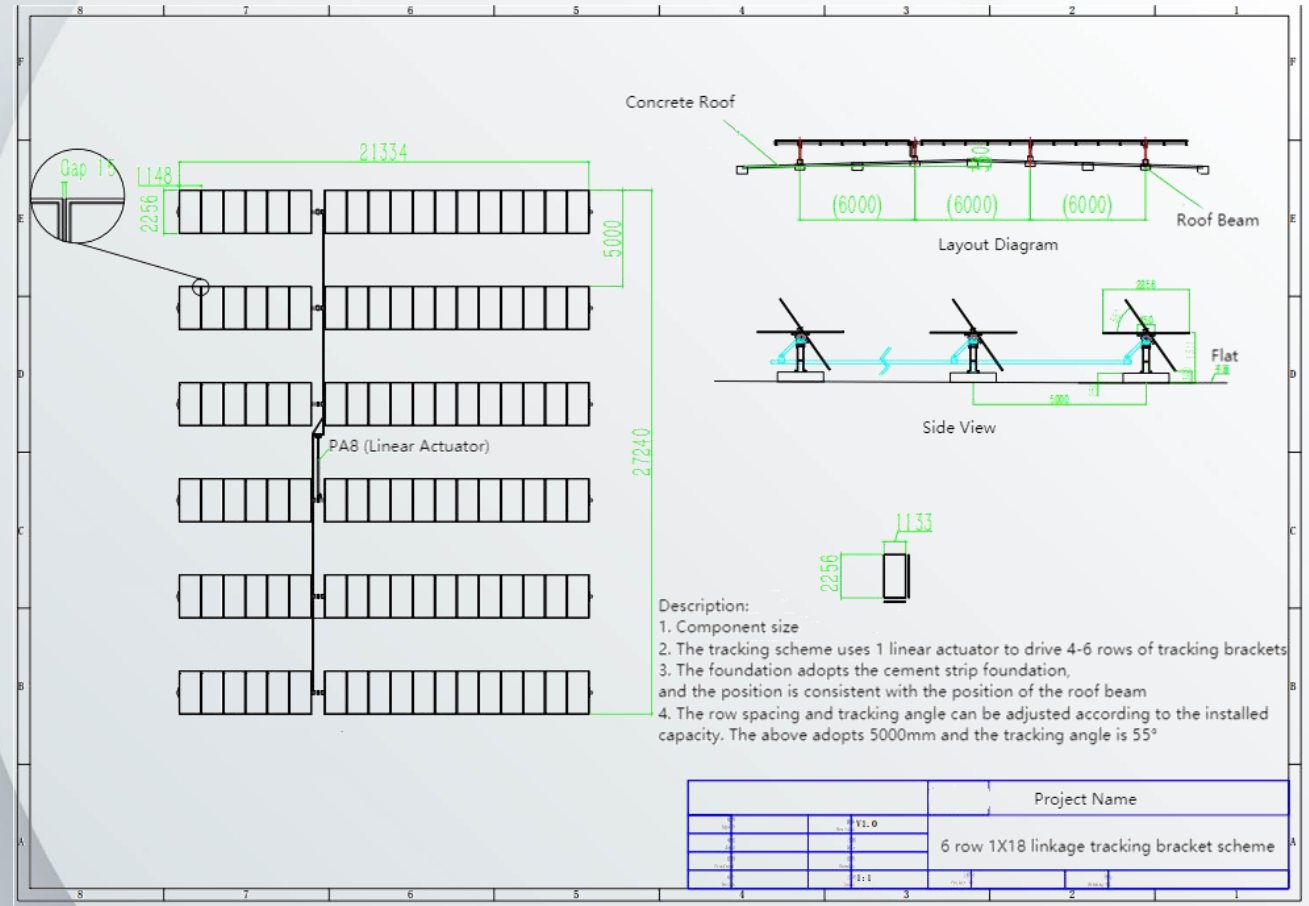


Rooftop photovoltaic power generation scheme technical diagram



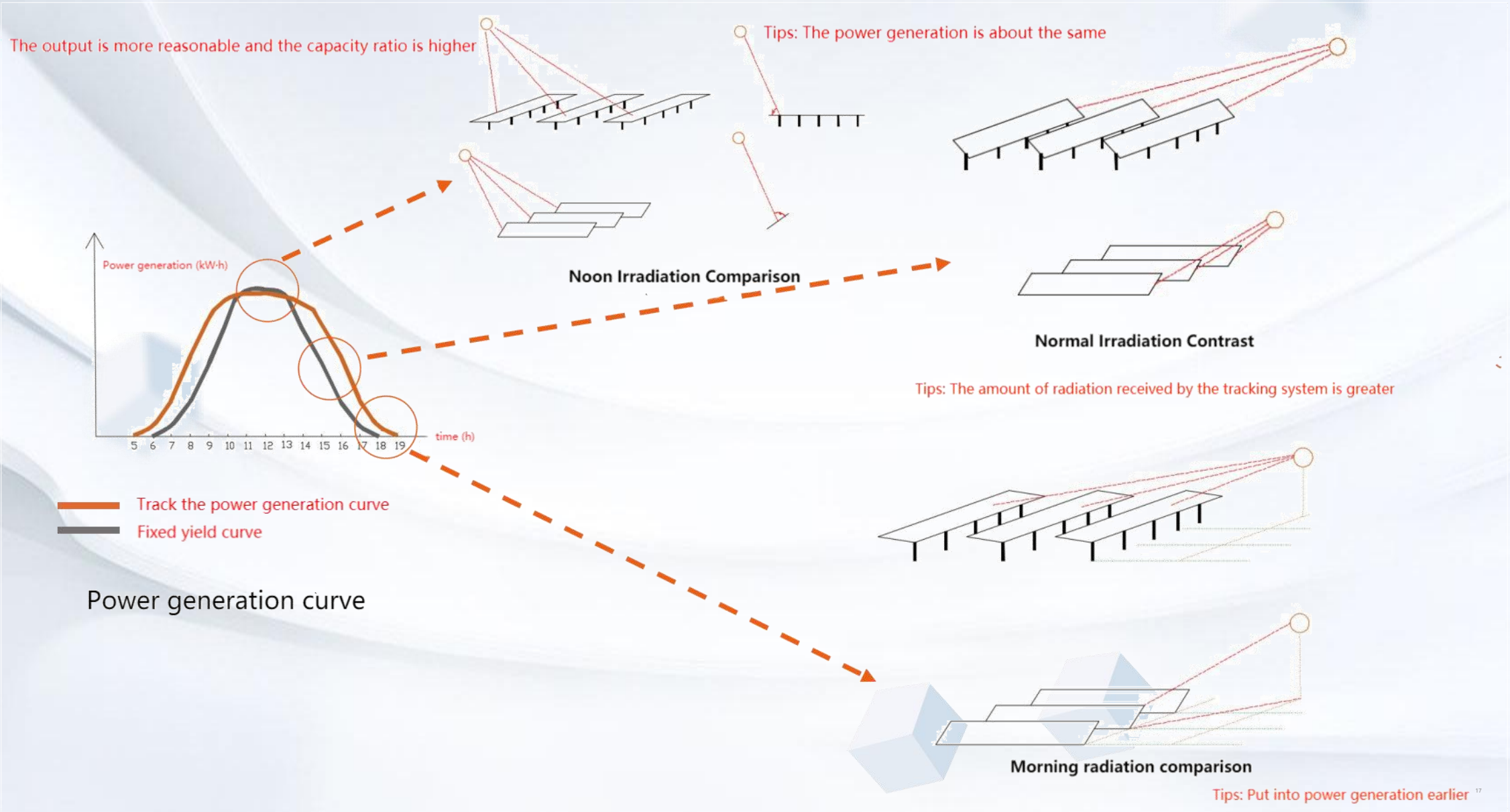
# Rooftop PV Generation Solutions - Automatic Tracking

On account of the extensive product development experience in large-scale ground PV power plants around the world, Powernice is in hope of becoming the first or the pioneer in the world that can develop large-scale commercial rooftop photovoltaic power generation automation. Supplier of tracking systems.

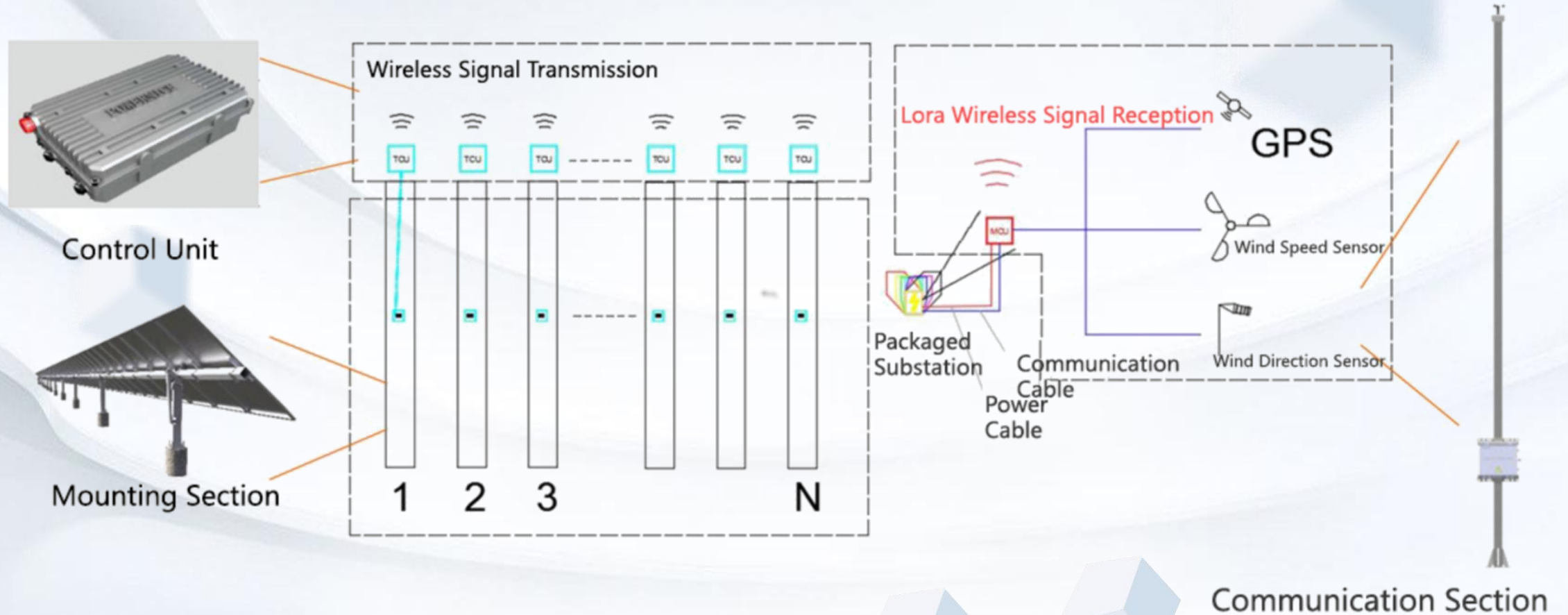


Rooftop photovoltaic power generation scheme technical diagram

# Rooftop PV Generation Solutions - Automatic Tracking



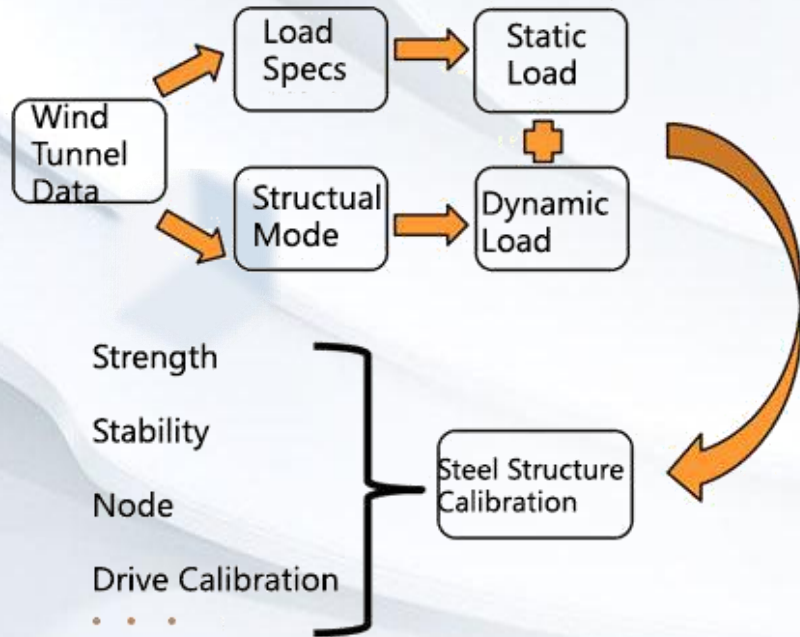
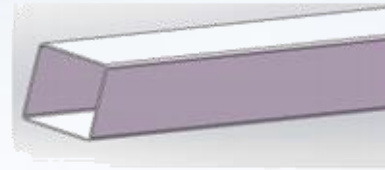
# Rooftop PV Generation Solutions - Automatic Tracking





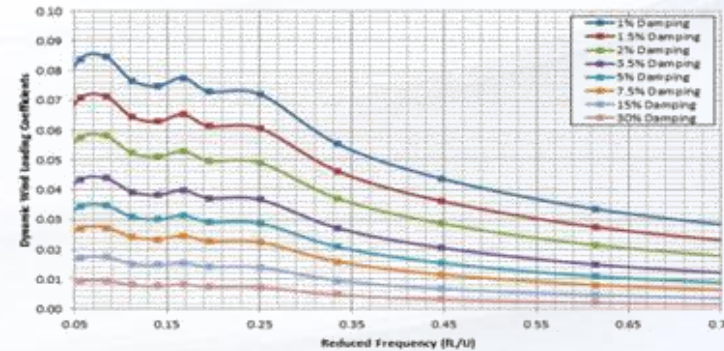
# Rooftop PV Generation Solutions - Automatic Tracking

Scientific Method of Calculation+  
Larger Cross-Section And Higher Strength Materials



Scientific Method of Calculation

- Larger Cross-Section Main Beam
- Higher Strength Materials



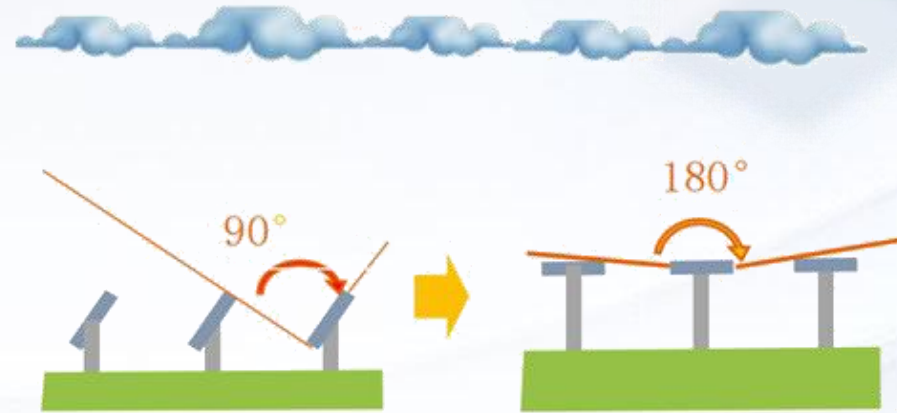
- The System Structure is More Rigid
- Scientific Fit System Damping Ratio

## Rooftop PV Generation Solutions - Automatic Tracking

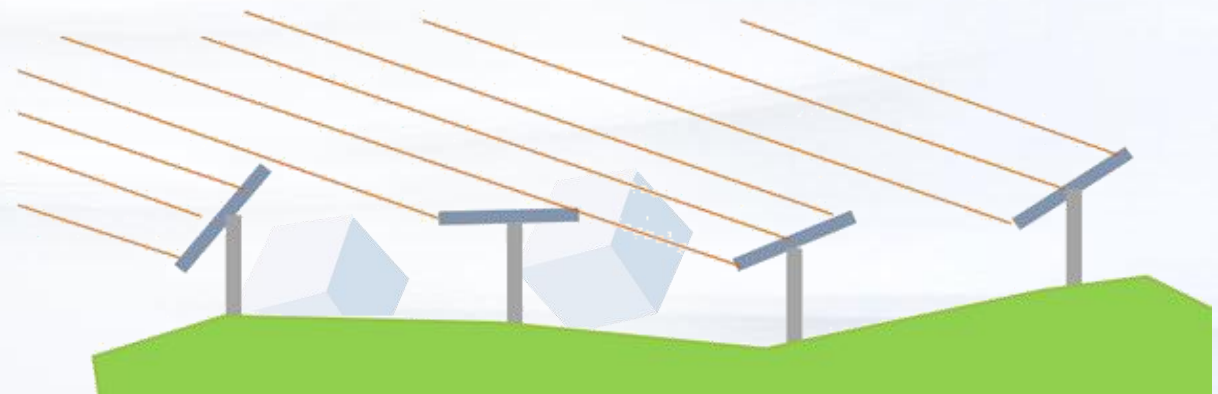
### Advanced Control System

- ✓ High Reliability
- ✓ High Cost-Effective
- ✓ Overall Quick Debugging
- ✓ Firmware One-Click Upgrade
- ✓ Meteorological Control
- ✓ Upgrade The Backtracking Algorithm
- ✓ Converge Intelligence AI

### Meteorological Control



### Upgrade The Backtracking Algorithm



## Upgrade of Rooftop PV Solutions for Industrial Parks - Automatic Tracking Cases

### Fenghua Binhai Development Zone- Income Analysis Table of Power Generation Projects in Micro and Small Industrial Park

Installed Power Generation Capacity (KW)	770
Power Generation Capacity Without Automatic Tracking (KW·h)	924,000
Power Generation Capacity With Automatic Tracking (KW·h)	1,053,360
20-Year Power Generation Capacity Revenue Without Automatic Tracking (KW·h)	18,480,000
20-Year Power Generation Capacity Revenue With Automatic Tracking (KW·h)	21806400



Remarks: Affected by the geographical location, Ningbo has more rainy weather and annual sunshine time of 1200h, which is one of the places with the lowest power generation efficiency in China. Even here, 18% of the power generation can be increased. Assuming that in areas with less rainy weather such as Qinghai and Tibet, the power generation will increase even more.



## Rooftop PV Generation Solutions - **Overseas Automatic Tracking**





## Rooftop PV Generation Solutions - **Overseas Automatic Tracking**





# Rooftop PV Generation Solutions - Ningbo Automatic Tracking



**Ningbo Fenghua Small and Micro Park**

## **Building 1/2:**

400KW tracking type

Features:

1. Fully automatic tracking
2. Automatic leveling and wind resistance
3. Double-sided module
4. Power generation increased by 20%

## **Building 3/4:**

400KW Fixed



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