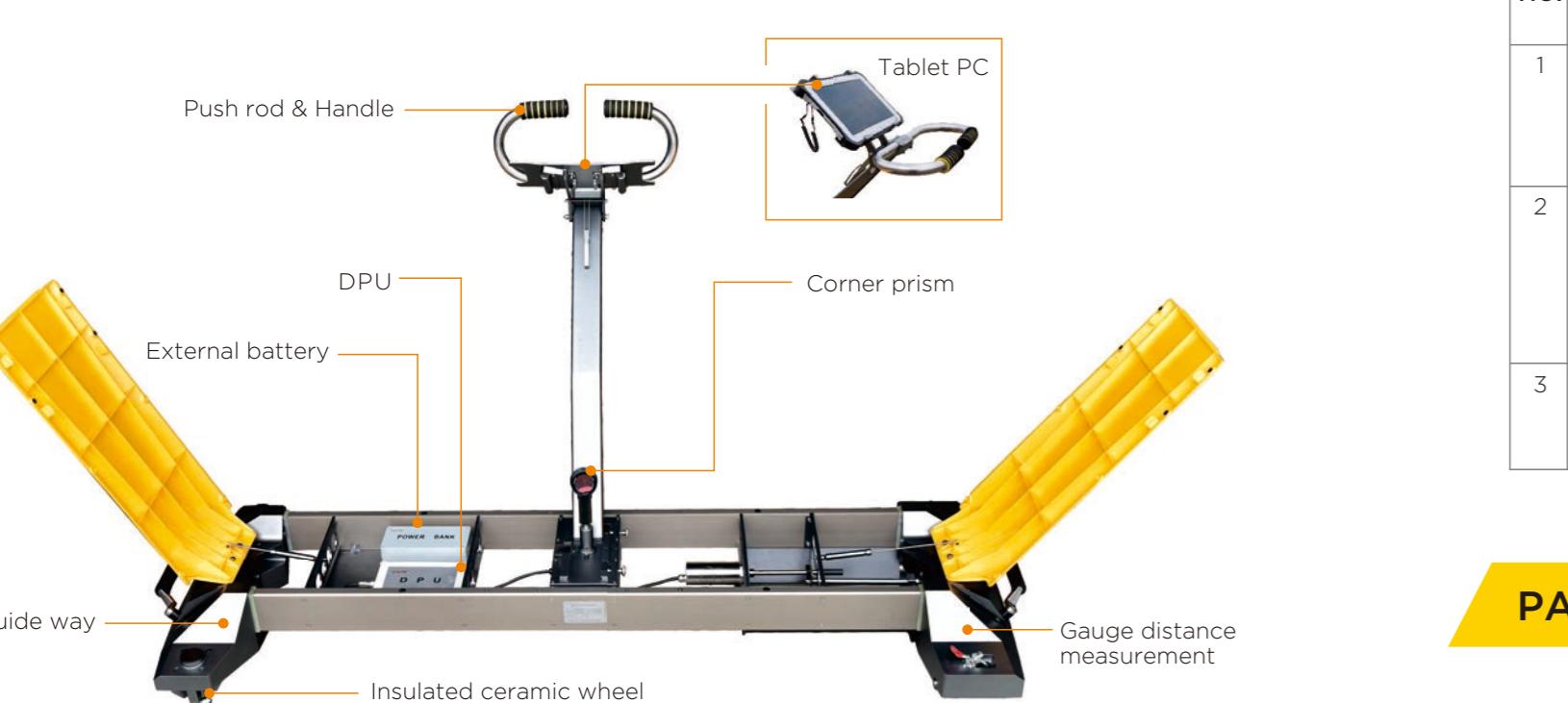


## PRODUCT CONFIGURATION LIST

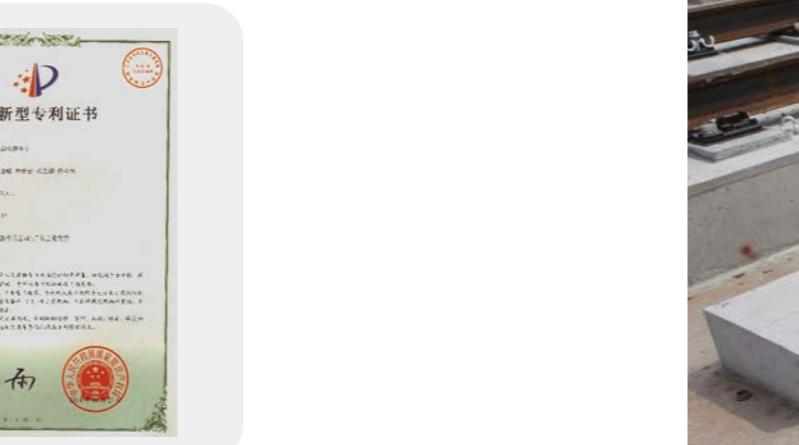


NO.	Items	Type	PCS	Note
1	Track geometry measuring instrument	SGJ-I-JL-1	1	
2	Push beam	XC161	1	With pallet
3	Target prism	SMR-381 corner prism	1	Absolute constant =0mm Leica constant =34.4mm
4	MCU	DPU	1	
5	Tablet PC	FZ-G1	1	Protection leve: US military standard MIL-810G standard, IP65180cm drop; Battery included
6	Radio	RADIO DATALINK	1	Reliable communication distance of more than 200 meters
7	Battery	XC101	2	Battery capacity: 147Wh
8	Battery charger	16.8V/5A	2	
9	Antenna	433M	1	Connect to DPU
10	Transportation case	MEASLLEY	1	
<b>Software</b>				
1	Acquisition software		1	Installed on tablet PC
2	Data analysis software		1	For data analyzing and fastener adjusting
3	Data checking software		1	Recalculating orbit detection data

## ACCURACY

NO.	Items	Measuring Range(mm)	Accuracy(mm)	Note
1	Gauge	1410 ~ 1470	±0.15	With temperature compensation
			±0.30	
			±0.15	The range of three times measuring results
2	Superelevation	±200	±0.15	
			±0.30	
			0.30	
			0.20	The range of three times measuring results
3	lateral deviation of Lines		±3.0	Errors caused by CP3 measurement are not included

## PATENT CERTIFICATE



Authorized Dealer

## TRACK GEOMETRY MEASURING TROLLEY SYSTEM

### MEASLLEY-IV



Track & Field Proven Technologies

## PRODUCT FEATURES

- **Structural Stability**  
I-Type double-beam structure; double T-shape insulated roller; the double-beam triangular top-of-rail structure ensures the uniqueness of top-of-rail and avoids the instability of short T-shape. Integrated body-frame, no geometrical deviation caused by disassembly assembly;
- **Modularization Design**  
Easy to assemble and maintain. Sensor, DPU, wireless radio and external battery uses modular design, can be independently exchanged. The devices are connected by in-line connectors, requires no soldering, which is convenient for on-site fault diagnosis, equipment maintenance and replacement. Data is bidirectional real-time backup, without checking after replacing parts;
- **Industrial Grade Tablet PC**  
Panasonic fully rugged tablet PC FZ-G1 (meets the US military standard MIL-810G standard, waterproof, dustproof level to IP65standard, shock / impact / wide temperature, has passed the 180cm drop test) as the measurement data acquisition terminal, adapting to the harsh working environment in the field, and the screen display is visible under direct sunlight;
- **Long Duration**  
With a large-capacity rechargeable battery that directly supplies powers to it itself and tablet PC. The battery can be used for 30 hours after fully charged;
- **Steady Communication**  
4.0 Bluetooth connection between its own devices, stable and reliable. Communicating with total station via radio station, and the reliable communication distance of more than 200 meters;
- **Lower Loss**  
Insulated ceramic wheel, processed by precision machining, the rim is smooth, steady and wear-resistant when wheel is running, wear rate/ 500km≤0.03mm
- **Safe Reliability**  
The body is insulated in three sections to ensure that the left and right rails do not conduct each other during the operation. Complies with the safe operation regulations for track detection during line construction and maintenance;
- **Fast Measurement**  
Equipped with high-precision sensors such as gauge sensor and horizontal sensor; adapting to the track measurement of trams; with independent guide wheels and measuring wheels, it can be running on the track smoothly and steadily, and complete fast dynamic measurement; Supports track measurement of streetcar.
- **Precision Measurement**  
A target prism mounting mechanism is arranged in the middle of beam. With target prism and high-precision automatic total station, can measure the track statically and adjust the rail finely. A high-precision spherically corner prism is adopted, without the reflection and refraction process of conventional prism glass, the attenuation of the ranging laser energy is minimal.

## SYSTEM FEATURES

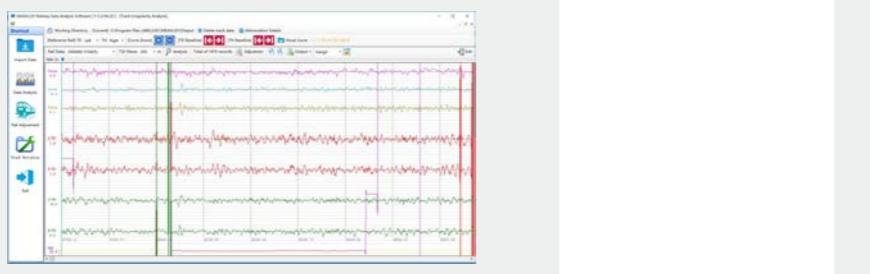
1) Directly input the line design parameters such as plane curve, longitudinal slope and broken chain of mileage, to calculate mileage and center line offset of detection line, design coordinates of left and right rail tops, design superelevation data, etc., and provides auxiliary calculation such as five-pile calculations to verify the correctness of input parameters.

Two mode of plane curve input: intersection input and line element input; with intersection input mode, only needs to input the plane curve data provided by design unit, namely: coordinates and mileage of starting point, intersection plane and end point, and plane curve radius, transition curve length; without the third-party software to convert into five-pile coordinates and input.

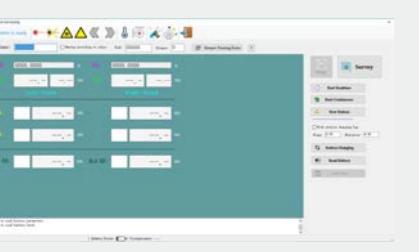


2) Enable to calculate and display track gauge, horizontal, triangle pit, 30m chord left and right orbit, 30m chord left and right height; adopt Track Quality Index (TQI) calculation and evaluation, apply to 50-200 m section, and adjust the poor ride performance of track long-distance section;

With ride performance data waveform display function, can intuitively view the data waveform diagram of the gauge, level, twist, orbit, high and low index of the line, and output data analysis report to evaluate track ride performance; With integral curve display function, can observe the lateral and elevation deviation curves of detection line and the adjusted comparison curve to whole section ride performance adjustment.



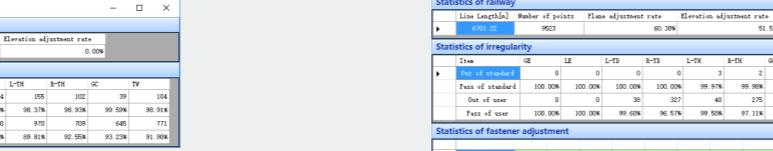
3) Enable to operate double-block orbit finely adjustment, as well as track static detection of CRTS I, CRTS II and CRTS III ballastless track, and track detection in turnout area. It adopts large-font display with over-limit warning and an intuitive arrow direction. It has multiple functions such as automatically generating sleeper according to the increase and decrease of mileage, and processing ride comfort of stations lap joint;



4) Supports line broken chain of mileage input: Mileages in plane curve parameters and longitudinal slope parameters are directly input into the construction mileage (including the mileage broken chain), without converting into continuous mileage before input.



5) With automatic fastener adjustment. Enable to set the minimum fastener adjustment, track adjustment mode and provides automatic or manual line segmentation fitting, effectively improve ride performance to meet the construction specifications, reduce the working intensity of artificial fastener simulation adjustment and improve work efficiency. According to track ride performance index (gauge, level, gauge change rate, triangle pit, short wave ride comfort, long wave ride comfort, etc.), adjusts rail simulation fastener and output data report for on-site operation.



Raw ride performance data of track detection (unadjusted)

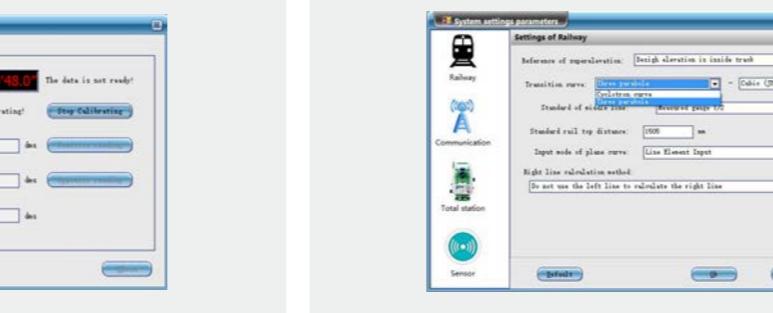
and

Statistical analysis results before adjustment

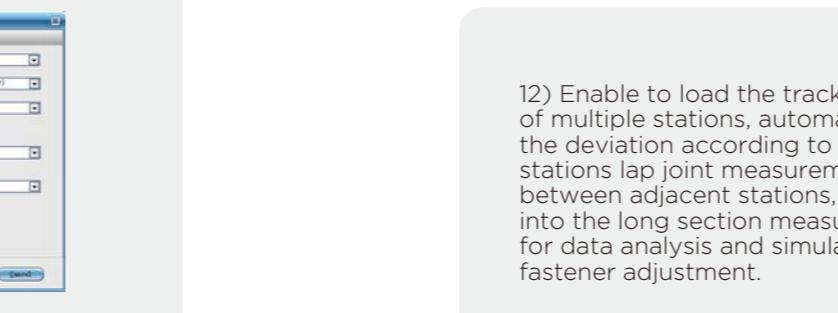


Ride performance data of track detection after automatic fastener adjustment and the adjusted statistical analysis results

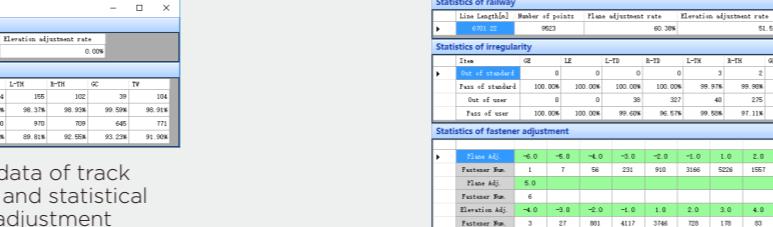
6) Horizontal(superelevation) and displacement sensor real-time calibration;



7) Transition curve mode: Cyclotron curve and the Three parabola.



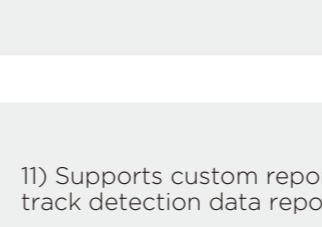
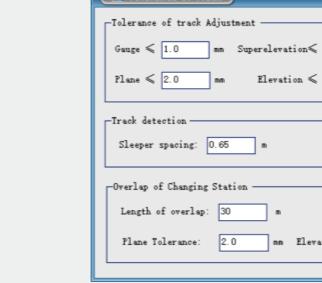
8) Supports multiple track detection modes, and provides finely adjustment and detection of main line, right line and turnout.



By using intersection method to input plane p

arameters, the right lineparameter can be calc

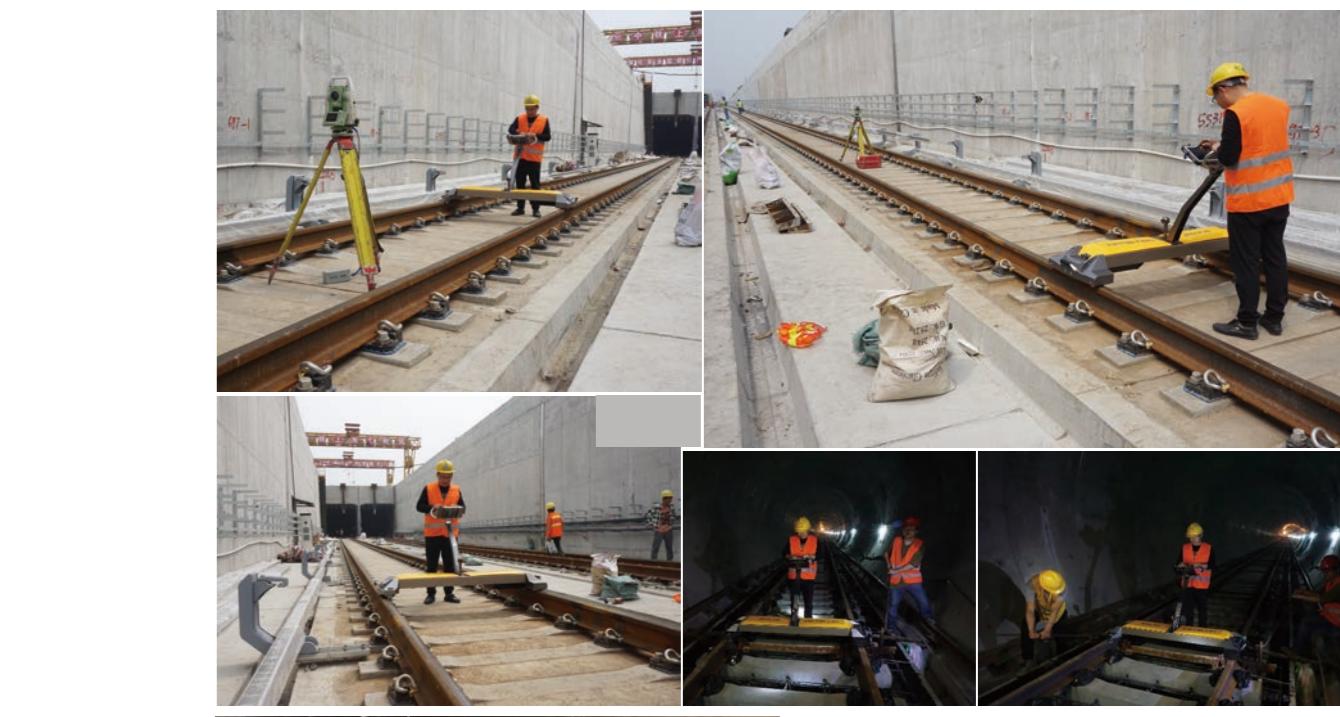
ulatedby the left line parameter.



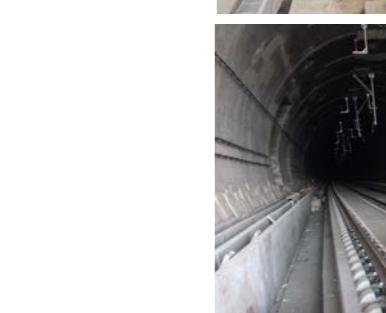
9) Set various tolerances for track detection, with over-limit alarm function in line detection, stations lap joint, and track finely adjustment operation;

## APPLICATION EXAMPLES

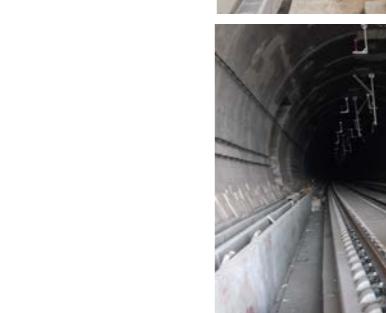
MEASLLEY-IV has been successfully applied in Guangzhou metro line 21 (October, 2017), Chengdu-Guiyang Railway (November, 2017), Wenzhou metro, etc. It has unanimously praised and trusted by users.



10) Plane curve type supports back curve and oval curve



11) Supports custom report format and export track detection data report.



Export Data

Data Report

Data Statistics

Save Curve



Observation station 1 data

Station cap point

Observation station 2 data

Observation station 2 data

Observation station 2 data

Observation station 2 data

12) Enable to load the track detection data of multiple stations, automatically correct the deviation according to the data of the stations lap joint measurement points between adjacent stations, and connect into the long section measurement data for data analysis and simulation rail fastener adjustment.

