Mikrosize®

iSurfa-300

Roughness Waviness Tester

Video

Contact us

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Mikrosize®

Product Features and Application

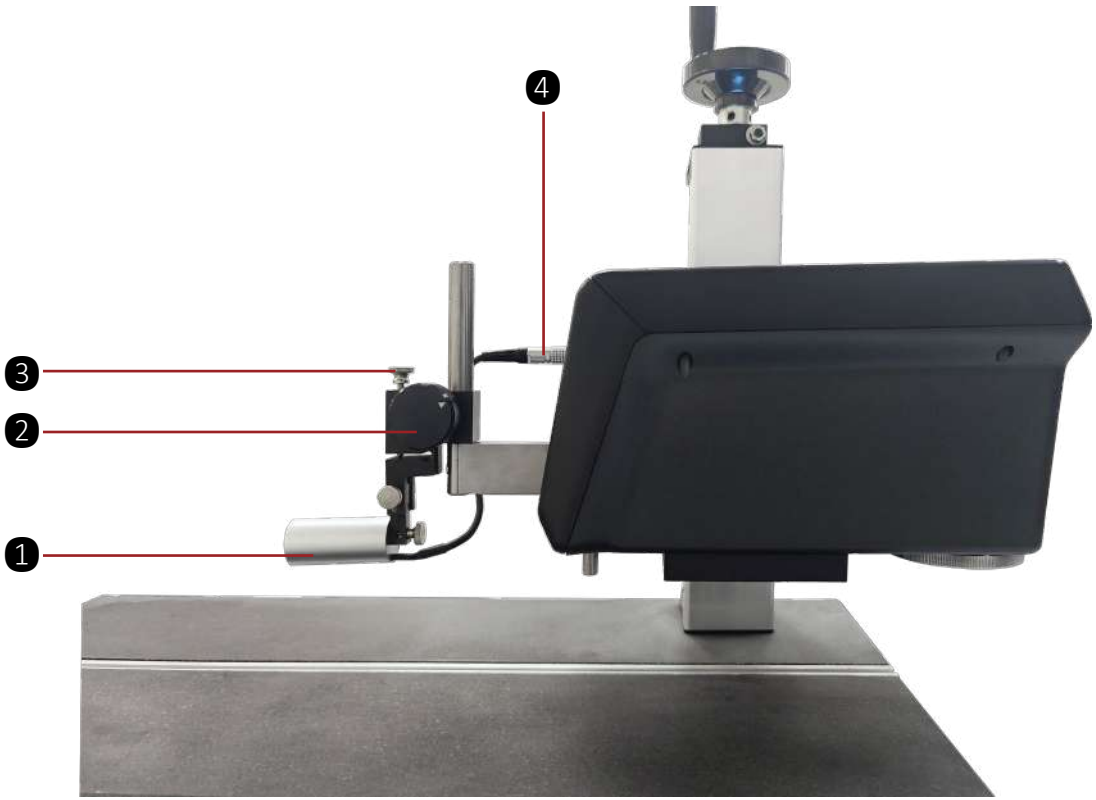
Product Features

- High precision large stroke guide rail, with a length of up to 30mm
- Sensor range ± 500 μ m
- The all-in-one machine is easy to carry and comfortable to operate
- Complete parameters, including 5 measurement types and multiple national standards
- No guide head measurement provides more accurate feedback on the morphology of the machined surface
- The measuring probe can be directly replaced, making the replacement operation convenient and enabling measurement in different scenarios
- The sensor can be switched vertically in the same direction as the guide rail, and the depth measurement groove can be made from the side without being limited by the depth of the measuring probe and groove
- English language and other customized languages
- Convenient data storage, can be directly stored in the built-in memory of the machine
- Analysis and calculation including multiple filtering methods can be freely combined to meet requirements
- Support automatic multiple calibration of standard blocks, greatly reducing errors in calibration

Application

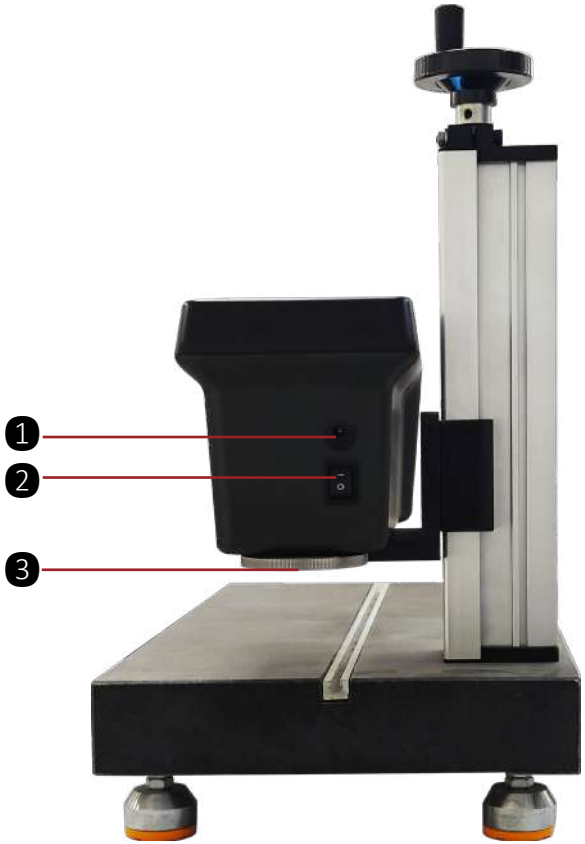
- Mechanical processing industry, used to detect the surface roughness and waviness of metal parts after processing, such as shafts, gears, molds, etc., to ensure that the surface quality of the parts meets the design requirements
- In materials science research, it is used to analyze the micro geometric shape of material surfaces, study the relationship between material surface characteristics and properties, and provide data support for the development of new materials
- The surface roughness of printed circuit boards (PCB) can affect the soldering quality and electrical performance of electronic components. This device can be used to detect the surface of PCB, ensuring the stability and reliability of circuits

Instrument Appearance



1.Inductance sensor
2.Sensor position adjusting handwheel
3.Fine adjusting of sensor position
4.Sensor interface

Instrument Appearance



1.Charging Interface **2.Power Switch** **3.Horizontal Adjustment Wheel**

Instrument Appearance

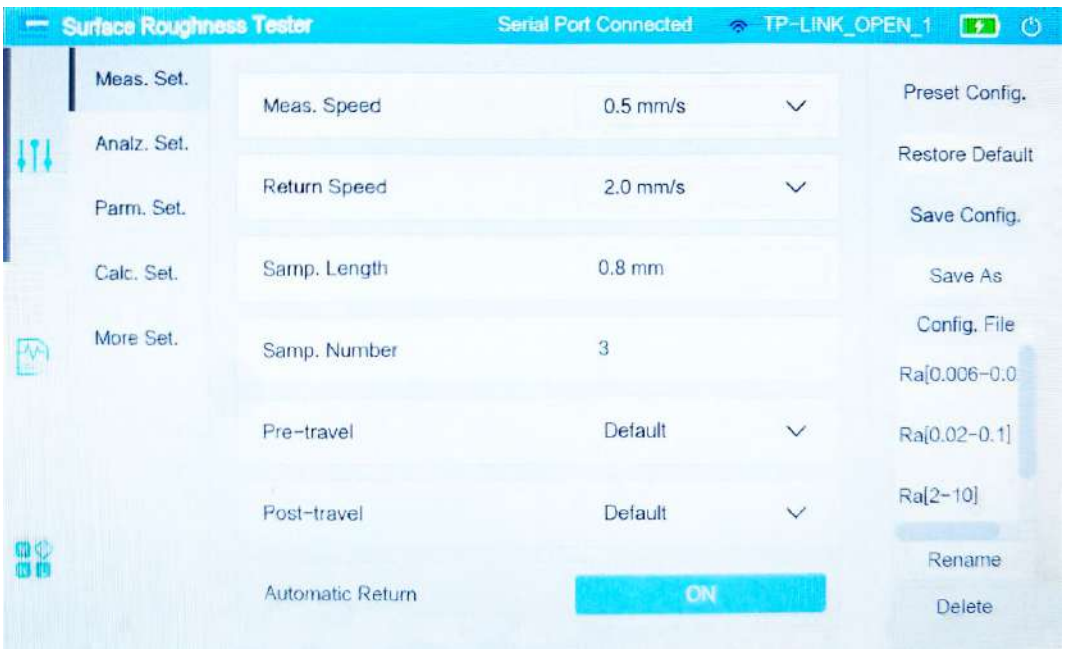
1.Power On/Off **2.Left Key** **3.Right Key** **4.Start Key** **5.Stop Key**
6.Display Screen

Instrument Details

When installing the sensor, align the probe with the sensor rod and push it in, so that the spring plate on the probe is clamped in the corresponding position. Then install the sensor into the lifting and adjusting mechanical part and tighten it with the matching screws

When the device is in use, the actuator and the measured surface should be kept relatively parallel to ensure that the sensor does not exceed the range during the measurement process, in order to ensure the accuracy of the measured value and the safety of the sensor.
Users can control the tilt angle of the guide rail through the horizontal adjustment wheel under the actuator to ensure that the measured value does not exceed the measurement range throughout the entire measurement process

Function



Measuring Set

●Selection of measurement speed and return speed

Option：0.05mm/s | 0.10mm/s | 0.50mm/s | 1.00mm/s | 2.00mm/s

●Select the sampling length sampling numbers.

Sampling Length：0.08mm、0.25mm、0.8mm、2.5mm、8mm等

If the sampling numbers does not exceed the total measurement range, any positive integer can be set, usually 5

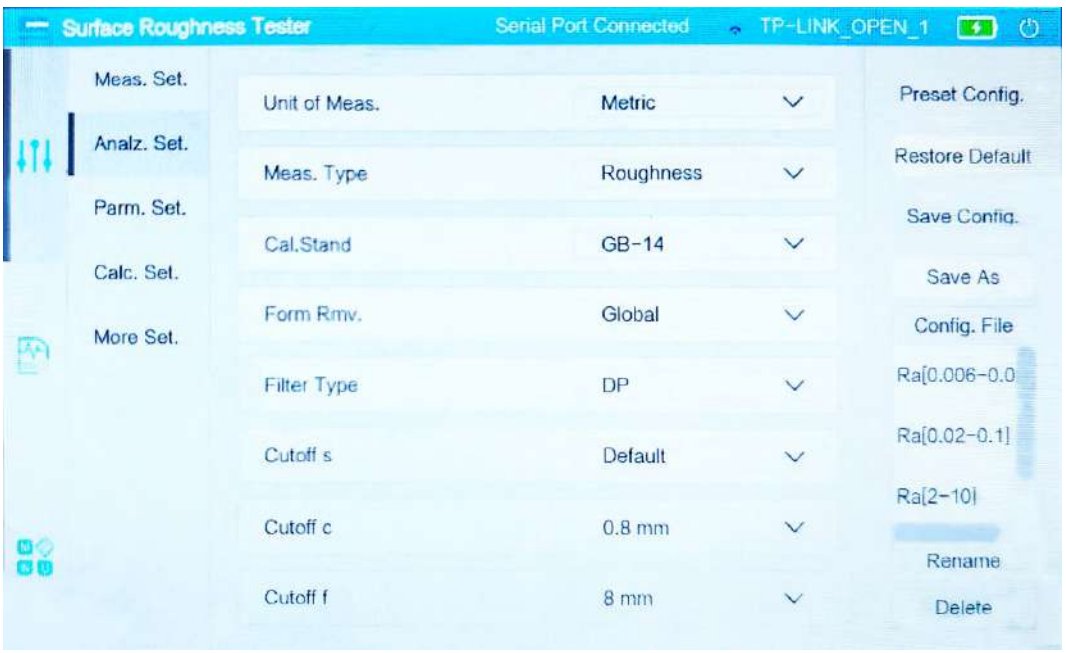
●Set the front and rear spare lengths

Options: Default | 1 Sampling Length | 1/2 Sampling Length | 1/3 Sampling Length | 0

Suggest users to directly select 'default'

●Turn on and off the automatic return function

For ease of use, it is recommended to always enable this feature



Analysis Setting

●Selection of measurement units: Metric and Imperial

●5 measurement types to choose from

Options: Roughness profile | Waviness profile | Primary profile | Bearing-area curve | Graphical plot

●Multiple calculation standards to choose from

JIS-82 | JIS-87 | JIS-94 | JIS-01 | JIS-13 | ISO-84 | ISO-97 | DIN-90 |ASME-95 | GB-14

●6 shapes removed

Options: Global | Front Half | Rear Half | Center | 2-point | Curve

●5 types of filters

Options: Gaussian | FFT | PC | DP | 2RC

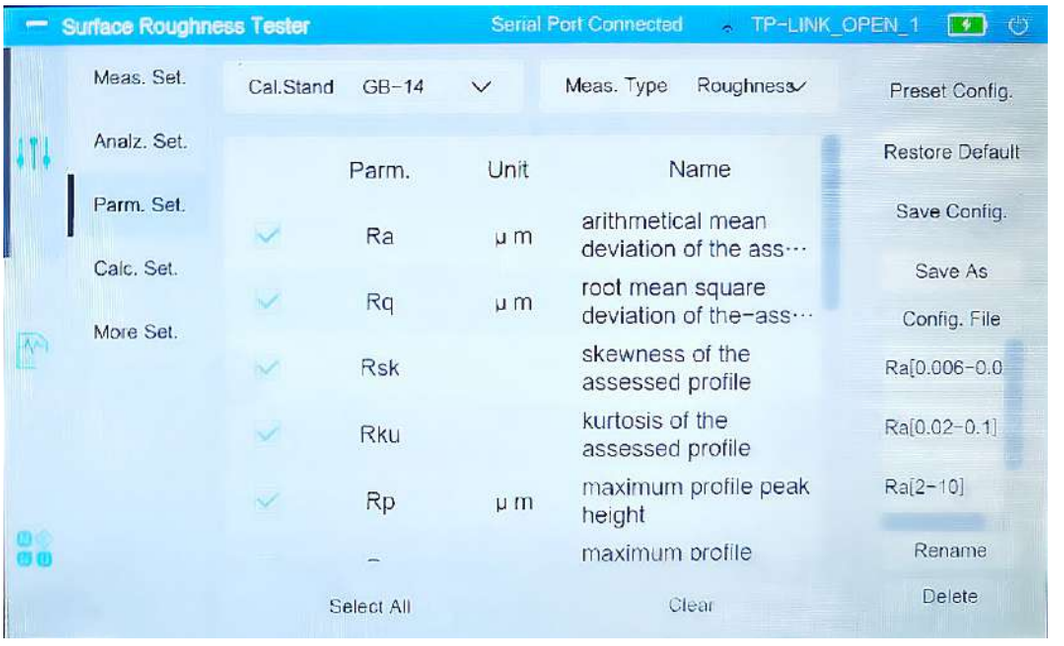
●Cut-off wavelength selection – the wavelength used as the basis for the digital filtering algorithm

λs options: Default | 0 μm | 2.5 μm | 8 μm | 25 μm

λc options: 0.08 mm | 0.25 mm | 0.8 mm | 2.5 mm | 8 mm

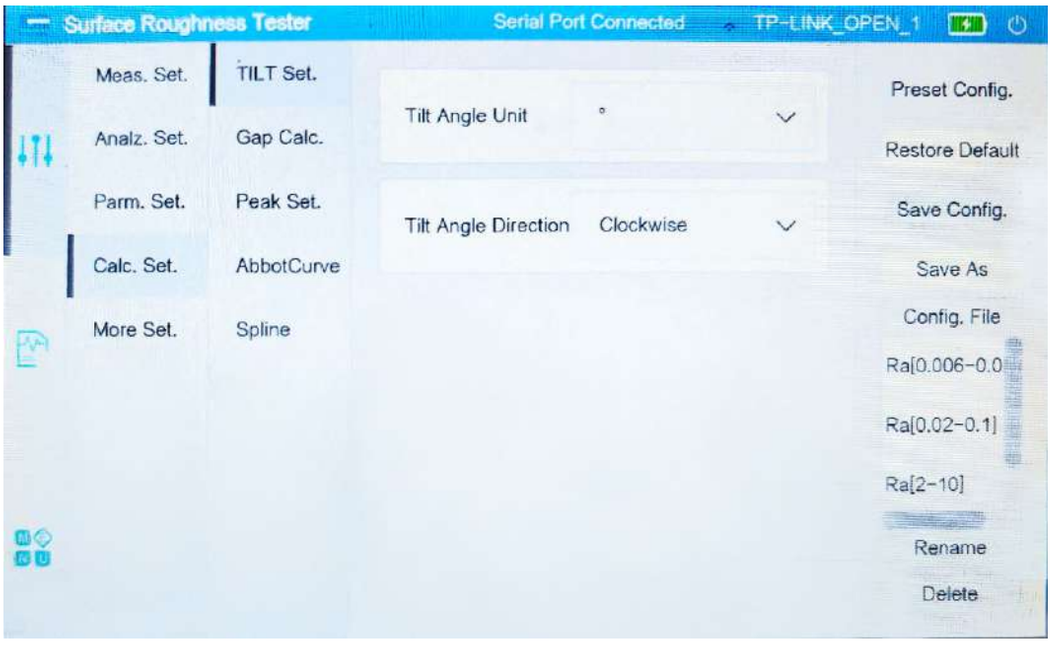
λf options: 0.8 mm | 2.5 mm | 8 mm | 25 mm

Function



Parameters Setting

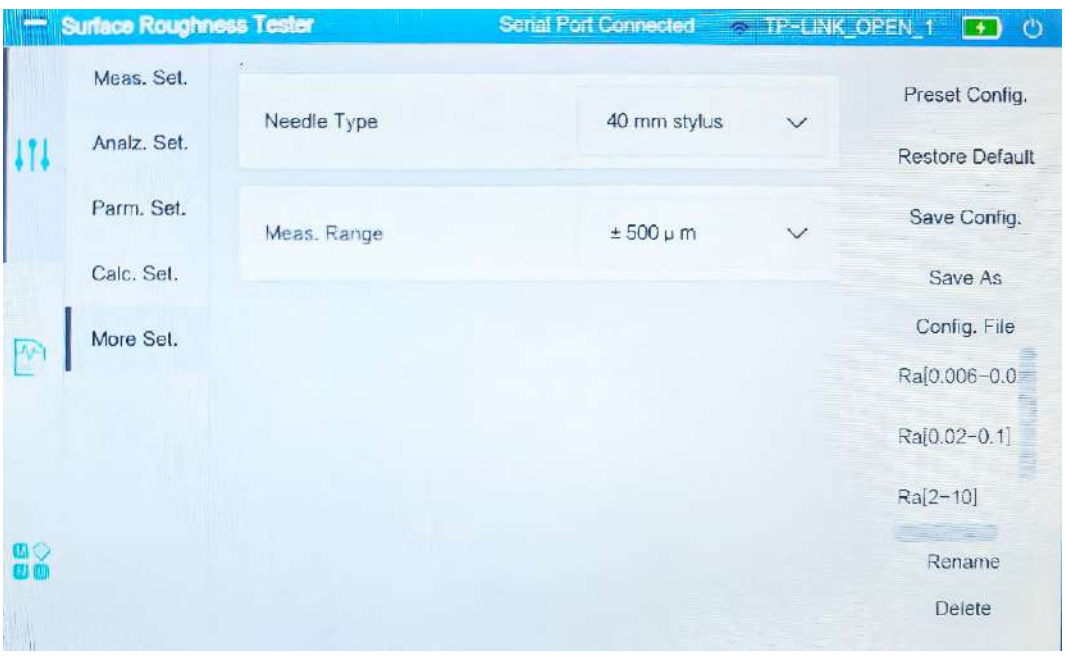
Users can select appropriate calculation standards and required measurement types on this inter-face,select the parameters to be displayed, and note that some measurement types may not exist under certain national standards



Calculation settings

This interface allows users to set and modify 5 calculation parameters (tilt angle, notch, peak number, support rate curve, spline curve)

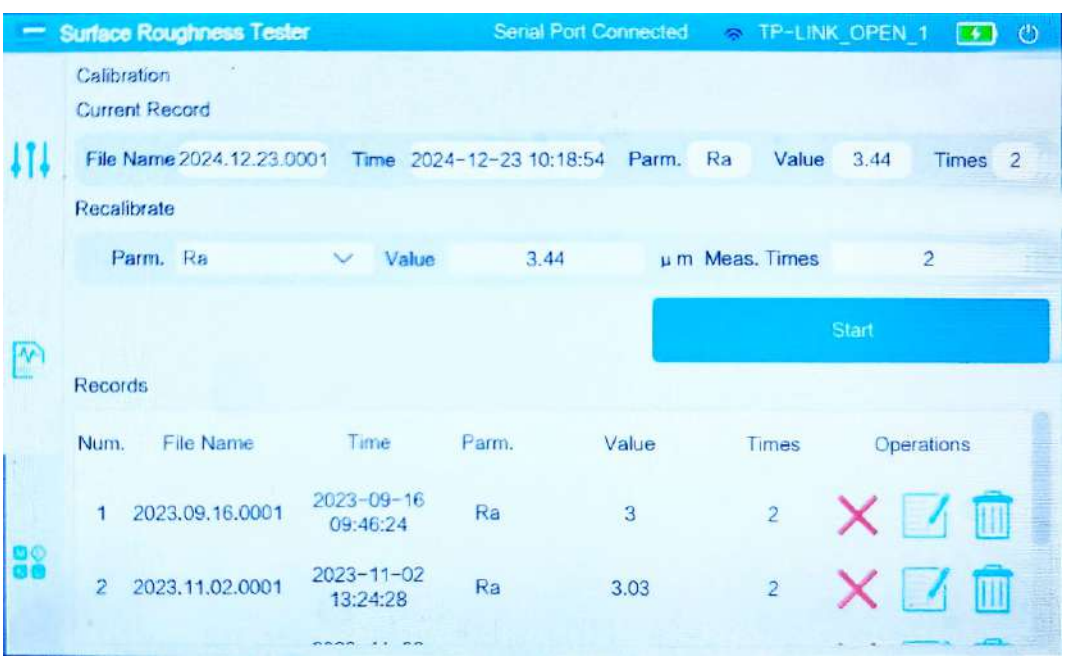
More Setup



- Choose between two types of measuring probes: 40mm and 80mm
- Select measurement range, options: ± 500 μ m | ± 25 μ m

Preset Configuration

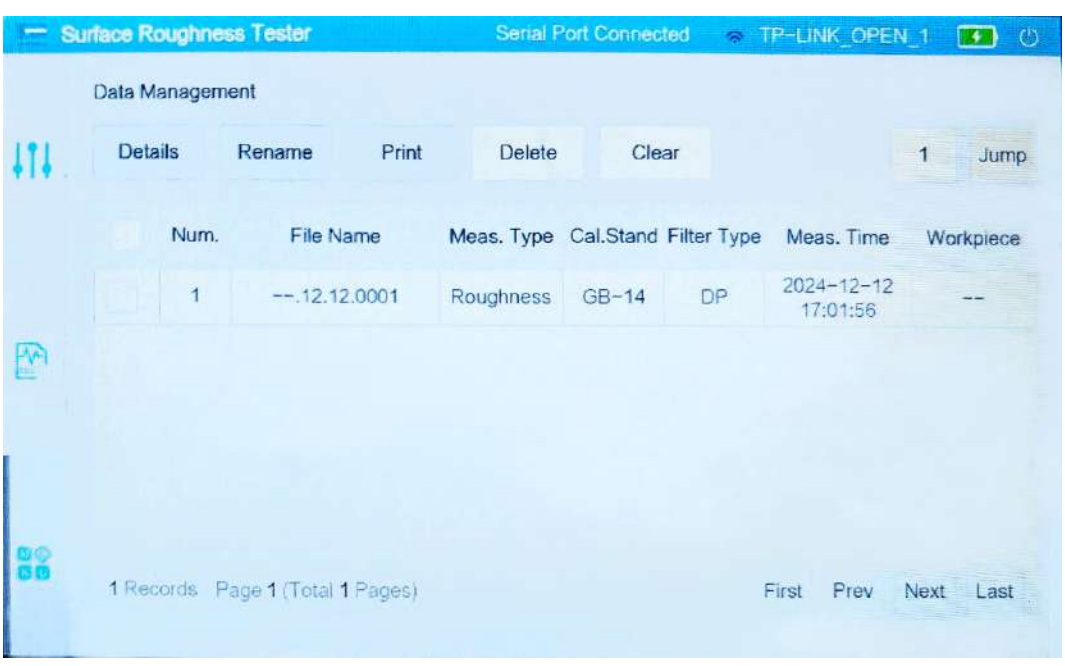
- For the convenience of users, there is a one click restore default parameter function on the right side of the screen, which can restore the above parameters to their default values
- For parameter configurations that need to be used multiple times, the configuration file can be saved and named, and can be called directly the next time it is used without the need for repeated settings



Calibration

Calibration Process:

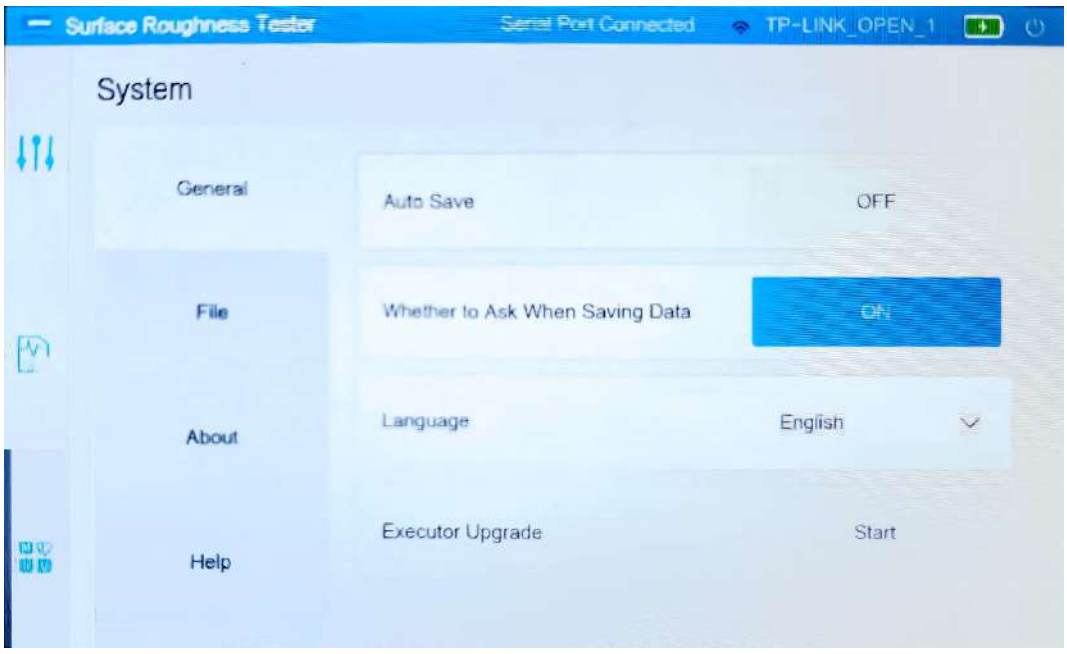
1. In the parameter settings, set the measurement type to "Roughness profile".
2. Select "Ra" for the calibration standard block.
3. Enter the certified Ra value of the calibration block.
4. Set the number of measurement passes (1–5).
5. Click "Start Calibration".
6. After the measurement is complete, save the calibration data and designate this record as the active calibration.



Data Saving

- **This interface allows you to view saved data, including measurement types and time, calculation standards, and filtering types**
- **After selecting the data, you can view detailed information, rename or delete the data, and print the selected data if the device is connected to a printer**
- **Clicking the clear button will clear all stored data**

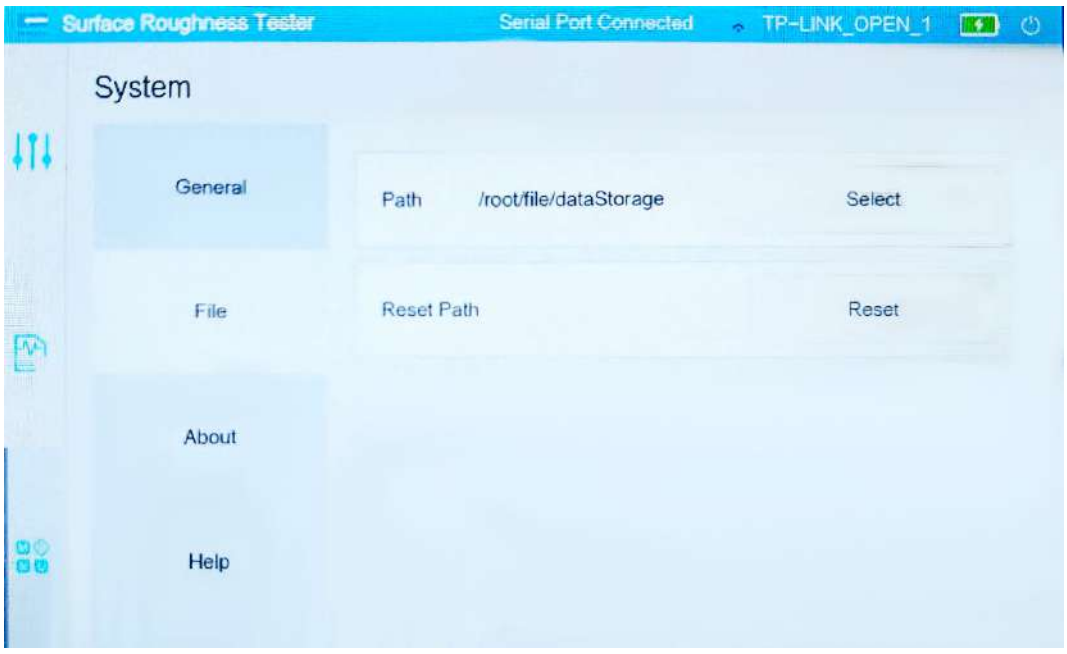
More Setup



General Setup

●Auto save: automatically save data after measurement.
●Do you ask when saving data: every time you click save data, you will be asked for save information
●Language switching: Switch between English and other languages

●Execution machine upgrade: To upgrade the firmware of the execution machine, under normal circumstances, do not operate the "Execution machine upgrade" function.



Files Management

This interface allows you to change the path of data storage and reset the default path of data storage

WIFI Connecting

This device has WIFI connection function, which facilitates data management and output printing

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Technical Specification

Model		iSurfa-300
Range		X Direction:300mm/Z Direction:±500μm
Resolution		X Direction:0.0016μm/±50μm-0.016μm/±500μm
Straightness		1μm/30mm
Parameters	**Roughness Profile**	Ra75,Rq,Rp,Rv,Rc,Rt,S,R3z,PPI,Ra,Rsk,Rku,Ry,Sm,RΔa,RΔq,Rz,Pc,Rλa,Rλq,lr,RSm,Rz94,RPc,RS,Rz.I,Rpm,HSC
	Waviness Profile	WCA, WCC-q, WCC-p, WCC-v, WCC-m, WCC2Sm, WCA, WC-q, WC2p, WC-v, WCM, WC2Sm, WC-t, Wa, Wq, Wsk, Wku, Wp, Wv, Wz, Wc, Wt, WSm, WΔq, WPc
	Primary Profile	Rsk, Rku, Rmax, Sm, Δa, Δq, Rz, λa, λq, lr, TILT A, AVH, Hmax, Hmin, AREA, Rz.J, Pa, Pq, Psk, Pku, Pp, Pv, Pc.I, Pt, PSm, PΔq, PPc, Pc
	Abbott Curve	Rk,Rpk,Rvk,Mr1,Mr2,V0,K,A1,A2
	Motif	NCRX,AR,R,Rx,NR,CPM,SR,SAR,AW,W,Wx,Wte,NW,SW,-SAW,Rke,Rpke,Rvke,Mr1,Mr2,V0,K
Evaluation Curve		Roughness profile,Waviness profile,Primary profile,Abbott curve,Motif
Characteristic Curve		Abbott curve (Rmr(c),Rmr2(c),Rδc(c),tp(c),tp2(c),Htp(c)),Amplitude frequency analysis curve,amplitude distribution curve
Form Remove		Global, first half, second half, center, 2 points, curve
Filter Type		Gaussian,FFT,PC,DP,2RC
Filter Wave length	**λs**	0, 2.5, 8, 25μm
	λc	0.08, 0.25, 0.8, 2.5, 8mm
	λf	0.8, 2.5, 8, 25mm
Evaluation Length		Sampling length × number of samples (sampling length has standard mode and custom mode)
Measurement and Return Speed		0.05mm/s, 0.10mm/s, 0.50mm/s, 1.00mm/s, 2.00mm/s
Sensor	**Model**	Standard Universal Type
	Sensing Method	Differential Inductance
	Range	±500μm
	Stylus	5μmR diamond 90°
	Contact Force	0.4~0.75mN (Adjustable)
Display Part		10-inch color IPS touch screen
Data Output		PDF/WIFI printing
Power Supply		AC220V±10% Built-in rechargeable battery (AC adapter charging) 3 hours charging time
Power Consumption		30VA
Weight		Net:3Kg Gross:10Kg
Dimension		Main Unit 350(L)×116(W)×146(H)

Standard Delivery

Item	Qty	
Main Unit	1unit	
Sensor	1pc	
Charger	1pc	
Standard probe	1pc	
Standard Block	1pc	
Waterproof Main-Unit Case	1pc	
Hex key (2.5 mm)	1pc	
Documents	1set	

Optional

Items	
X-Y Cross Slide Stage	
Flat Fixture	
Marble V-block	
Probe