QUICK EA-A00

BGA/CSP Rework Station

INSTRUCTION MANUAL

Thank you for purchasing our BGA/SMD Rework System. The system is exclusively designed for reworking and soldering SMD component. Please carefully read this manual before operating the system. Store this manual in a safe, easily accessible place for future reference.

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1. Safety Instructions

⚠ Caution:

- **For the safety of the system and operator, please read this manual carefully before operating the unit. Please note that the unit is suitable for soldering and de-soldering of electronic components.** *The unit must be grounding when using.*
- **QUICK BGA EA-A00 rework system is a precise device. Don't do any modify at the unit for protect its precision from damage.**
- **Please use original fittings when need maintain.**
- **When not using, it must turn off the power switch and pull out the power socket.**

Caution:

Top and bottom infrared heater and sirocco nozzle will be very hot during working, so explosive and combustible object or gas and solvent is strictly prohibited in working areas, also please don' touch the hot surface parts.

Caution:

The laser alignment device includes a secondary laser device, so don't see the laser bean directly.

Caution:

When the system in trouble and needs maintenance, it should be maintained by an experienced and authorized technician or expert, or contact with service agent and factory. The unit with dangerous voltage! The inexperienced maintenance is dangerous for the operators.

2. Summary

QUICK BGA EA-A00 Rework System adopts micro-processor control and infrared sensor technology to do soldering and de-soldering to surface mount components safely and accurately. And it can also control the whole technological process and record all information by the BGA Software, meeting the higher technological demands of modern electronic industry. It is one of the most valued equipments in electronic field.

QUICK BGA EA-A00 Rework System integrates harmoniously the infrared pre-heater and the sirocco heater of top and bottom together. In order to control the soldering process optimally and get the nondestructive and reproductive PCB temperature, QUICK EA-A00's heating power is 4200W and can be adjustable. The sirocco heater is heating to the BGA and controlled by the temperature curve. The infrared pre-heater is heating to the whole PCB and can control the PCB temperature effectively.

In order to keep evenly heat up and get suitable peak temperature, and realize the reliable lead-free soldering, it can free adjust the PCB's position at the X axis to the infrared pre-heater according the position of BGA at the PCB. The PCB fixture is square and the width can be adjusted and the abnormity knightheads can be fixed at the PCB fixing poles. And the bottom supporting poles connecting with the arm keep the identical placing position of PCB when moving in X-axis and can be suitable for bigger size PCB.

QUICKEA-A00 BGA rework system can automatically run the soldering and de-soldering processes. And the system has the controlling software with wide screen display of LCD to multi-control the processes unaided or by the outer computer. It can fully satisfy the demands of reworking BGA, especially in lead-free soldering.
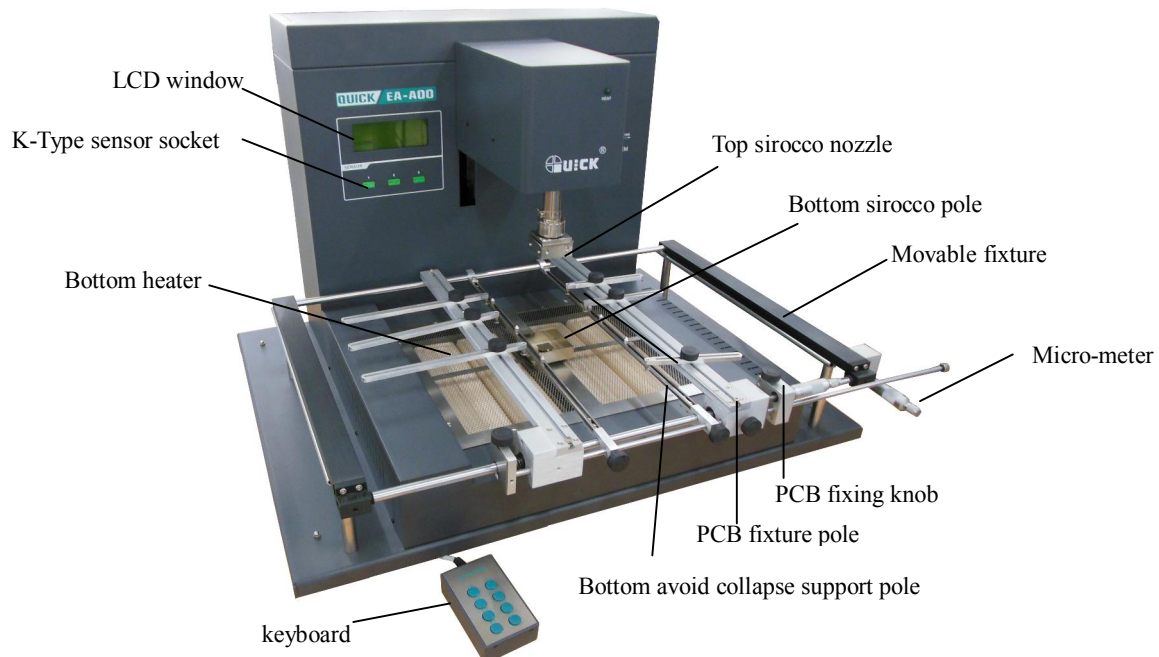

3. Specifications

General power: 4200W(max)

Rated power supply: 110V/220V/230V   50/60 HZ

Power of top heater: 1200W

Power of bottom pre-heater: 400W*4=1600W

Power of bottom heater: 1200W

Temperature range (hot air):   0～500℃

Temperature range (preheating):   0～500℃

Speed of side cooling fan: $3.5m^3/min$

Bottom preheating area: 310mm*260mm

Max PCB area: 420mm*380mm

Outside K-type sensor: 3pcs

Communication: standard RS-232C (Connect with the PC)

Outer dimensions: 65(W) * 75(D) * 51(H) cm

Note: The parts will be packed according to the packing list. If you don't purchase the optional part, it will not be in the package. If any part stated above is missed out, please contact with our company or agents immediately.

4. Parts Connection

Keyboard socket

RS232 Communication Socket connect with the PC

Connect with the K-type sensor   Power supply cord   Fuse tube
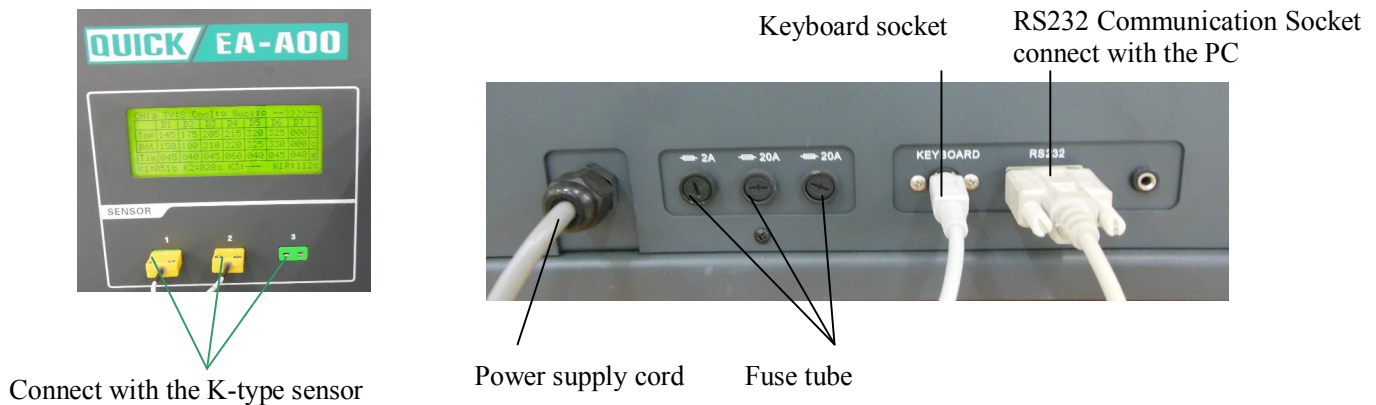
5. Parameters Instruction

CH:	Working mode. There are 0~9 ten working modes.
TY:	working type. There are two work-types: de-soldering (D) and soldering (S).
Cool:	Which means the cool fan is running or closed. "〇": The cool fan is closed and the bottom is in heating. "●": The cool fan is running and bottom heater is not heating.

D1~D7:	There are 7 zones in a flow. D7 is the cooling zone and in the D7 zone, the temperature is "000"℃ and cannot be changed.
Top:	The setting sirocco temperature of the top in the D1~D6 zones. The temperature range is 100℃~500℃.
Bot:	The setting sirocco temperature of the bottom in the D1~D6 zones. The temperature range is 100℃~500℃.
Tim:	The setting time in the D1~D7 zone. The time range is 0~999s.
VT:	The setting airflow of the top hot airflow. The range of the airflow is 10~120.
BT:	The setting airflow of the bottom hot airflow. The range of the airflow is 10~120.
KT1~KT3:	Real time temperature tests by the k-type sensor.
KIR:	The real temperature of the bottom infrared heater.
DownDis:	The downward distance of the moving arm. The range is 0~99.
Tir:	The setting temperature of bottom infrared heater.
T0:	Valve temperature and T0＜Tir. Only when the temperature of bottom infrared heater up to the T0, the top and bottom hot air heater comes to heat.

6. Parts Instruction

6.1 Keyboard Instruction

"SET" key: Click "SET" key into the LCD display menu setting interface which including:

        A.   SETDATA interface (SETDATA)；

        B.   SYSTEM interface (SYSTEM)；

        C.   CURVE interface(CURVE)。

"START" key: Click the "START" key into the soldering process or de-soldering process.

"BACK" key: Click "BACK" key to exit the current process and click "PAGE" key 10S to auto switch the page

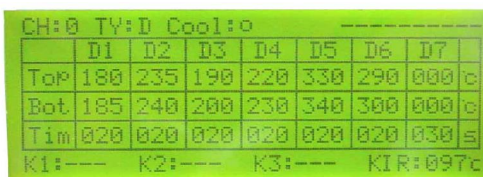between "the setting interface2" and "the setting interface1".

"COOL/STOP" key: "COOL" means run the cooling fan and "STOP" means stop the current process.
In the work state, click "COOL/STOP" key to stop the current process and directly run the cooling zone D7, and then the cool fan run automatically.
In the stop working state, and when the cool fan is not run, click "COOL/STOP" key to run the cool fan run automatically. In the heating state of de-soldering or soldering, the cool fan is closed automatically.

"→ delay" key: In setting interface, press "→"key make cursor move to right, select need to modify item. Have delay function, reset D6 working time.

"← vacuum" key： In setting interface, press "←" key make cursor move to left, select item which need to modify. In system setting interface, press"← vacuum", open vacuum.

"↑ ↓"key: in setting interface, press "↑" or"↓"key make cursor move up or down, select item which need to modify.

6.2 PCB Fixture

1. The movable PCB fixture can fix different size PCB and the supporting poles can protect the PCB from distortion. The locking knobs lock PCB fixing bar for fixing PCB.
2. Unscrew the PCB locking knob and push sliding blocks by hand to open the PCB fixing bars and make the distance between PCB fixing bars accord with PCB size. Fix PCB between them and screw down the PCB locking knobs after adjusting.
3. PCB fixture can move forwards or backwards before locking the sliding pole. After fixing and locking the PCB, move the sliding pole to adjust the PCB to suitable position.
4. Lock "fine adjustment locking-knob of X" and then adjust the micrometer of the X-axis. Achieve the fine adjustment of X.
5. Lock "fine adjustment locking-knob of Y" and then adjust the micrometer of the Y-axis. Achieve the fine adjustment of Y.
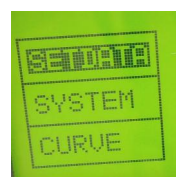
6. 3 LCD Display Window

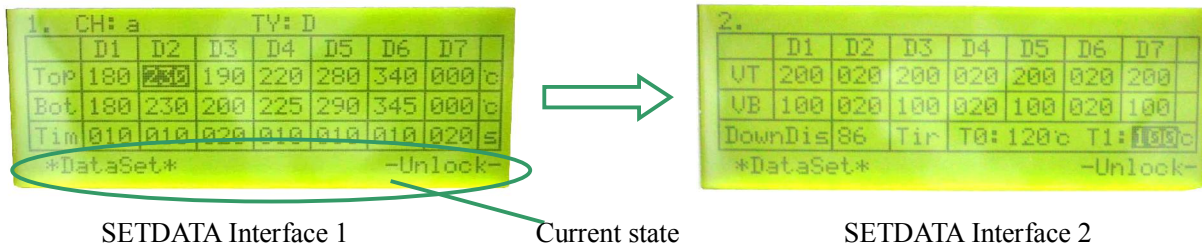press"SET"key, and then the system comes into the "menu-setting interface".

System   display

Menu-setting interface

## 6.3.1 SETDATA Interface（SETDATA）

| SETDATA Interface 1 | Current state | SETDATA Interface 2 |

1. When into the menu-setting interface, click " ↑ " or " ↓ " key to select "SETDATA". The background of the selected item is black.
2. Click "SET" key again, it comes into the "SETDATA" setting interface. The last row of the LCD display window displays the current state "*DataSet* " and in "-Lock-" or "-Unlock-" state.
3. If in the "Lock" state, it can view the parameters and change the channel "CH" and the work type "TY", but cannot change the data.
   a) Click "SET" key again to select the parameter, the set data will twinkle.
   b) Channel mode has ten choice "0~9". Click "←" or "→" key to select between channel (CH) and work type (TY).
   c) Work Type (TY) has two choices "D" and "S", click " ↑ " or " ↓ " key to change the work type.
   d) Click "SET" or "BACK/PAGE" key to exit and the background of set parameter is black.
   e) Click "BACK/PAGE" key again, it will go back the above menu. Click "SET" key again, it will set the current parameter again.

4. If in the "Unlock" state, it can change the channel "CH", the work-type "TY" and all the data of the parameters.
   a) Move the cursor by clicking " ↑ ", " ↓ ", "←" or "→" key to view the data and select the parameter, the background of the selected data is black.
   b) Click "SET" key again to change the data and the hundred-digit of the data twinkle. Click the " ↑ " or " ↓ " key to change the hundred-digit. After that, move the cursor by clicking "→" key to select the ten-digit. The setting methods of the ten-digit and one-digit are same with the hundred-digit. Move the cursor from left to right by clicking and by clicking "→" key and move the cursor from right to left by clicking "←".
   c) Click "SET" or "BACK/PAGE" key to exit and the background of set parameter is black.
   d) Click "BACK/PAGE" key again, it will go back the above menu. Click "SET" key again, it will set the current parameter again.

NOTE: The setting method of the "Unlock" or "Lock" state is in the "password setting" of the menu "SYSTEM".

6.3.2 SYSTEM Setting（SYSTEM）
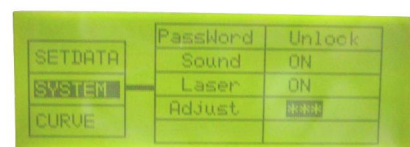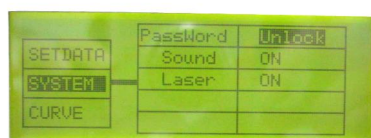
The "SYSTEM" menu includes "**Password**", "**Sound**", "**Laser**" and "**Adjust**".

1. Click "SET" or "BACK/PAGE" key to exit the current parameter setting and move the cursor to select "SYSTEM". After that, click "SET" key again, the sub-menu of SYSTEM appears. In the sub-menu of SYSTEM, click the "" key to the bottom, the sub-menu "Adjust" appears (as the above pictures).

2. Password

（1） Move the cursor to select "PassWord" by clicking the "↑" or "↓" key and then click "SET" key to the password setting.

（2） *Password input:* The cursor is twinkle, and at the time it can input the password. The default password is "000". If the inputting password is right, and the password window displays "Unlock" and if the inputting passwords twice are wrong, the password displays "Lock".

（3） Only input the right password and the password window displays "Unlock", it can set a new password and other items under the menu "SYSTEM".

（4） **Password setting:**

1. Firstly, it must input the right password (including the password is 000) and when the password window displays "Unlock" and the background of it is black, it can come the process of the password setting.

2. At the time, click "START" key to the password setting interface and the window displays "SetPWD".

3. Click "SET" key to the interface of setting a new password and move the cursor to select the digit.

4. If the twice-inputting passwords are same each other and the displaying new password will twinkle three times and sound "di-di" three times (if the parameter of "SOUND" is on), which means the password is successfully set.

5. If the next inputting password is different from the last time, the password cannot be set successfully and the window of the sub-menu password displays "Lock". And then it does change the password after inputting the right password.

（5） **Password view:** if forgetting the password, input "123" in the sub-menu "PassWord", after that, click "SET" key, the sub-menu "PassWord" displays the password. Record it and input it into the "UNLOCK" state.

*Note: * If the default password is "000" or the system is in the initial state "Unlock", at the time, it can set the values of the parameters. If the system is in the "lock" state, it cannot change the password before inputting the right password.*

* The default setting of the digit of the password is 0 and the digit shows the "*" before the cursor moving to the digit.

3. Sound setting

（1） "Sound" menu has two choices "ON" and "OFF". "ON" means it has sound when clicking the keys and will alarm when abnormity happening.

（2） Move the cursor to select "ON" or "OFF" by clicking the "↑" or "↓" key and the background of the selected item is black.

（3） Click "SET" key again and then the selected item will twinkle. Move the cursor to set "ON" or "OFF" by clicking the "↑" or "↓" key.

（4） After that, click "SET" or "BACK/PAGE" key to exit and the background of set parameter is black. Click "BACK/PAGE" key again, it will go back the above menu. Click "SET" key again, it will set the current parameter again.

4. Laser setting

a) There are two choice "ON" and "OFF" under the "Laser" menu. Select "ON" to open the laser and select "OFF" to close the laser.

b) Move the cursor to select "ON" or "OFF" by clicking the "↑" or "↓" key and the background of the selected item is black.

c) Click "SET" key again and then the selected item will twinkle. Move the cursor to set "ON" or "OFF" by clicking the "↑" or "↓" key.

e) After that, click "SET" or "BACK/PAGE" key to exit and the background of set parameter is black. Click "BACK/PAGE" key again, it will go back the above menu. Click "SET" key again, it will set the current parameter again.

5. Adjust setting

（1） Only in the "Unlock" state, click "↓" continually to the bottom and then the sub-menu "Adjust" appears. When the cursor is in the other sub-menus, the sub-menu "Adjust" disappears.

（2） Select the data of "Adjust" and then input the adjust password "159". If the inputted password is correct, it comes into the calibration interface and if the inputted password is error, it exits and comes into the interface.

6.3.3 Curve View（Curve）
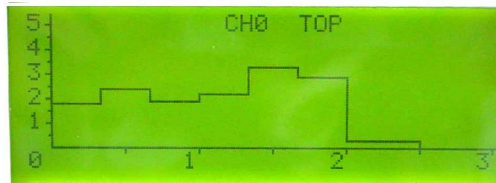
1. Click "↑" or "↓" key to move the cursor. Select the "Curve" and then click "SET" key into the "Curve" interface.

2. Open the power switch and run the flow D1~D7, the curve will be real time record. It can view the temperature curves of TOP, BOT, KT1, KT2 and KT3 by click "↑" or "↓" key.

3. The temperature of the curve cannot be saved and after turn off the power supply, the curve cannot be viewed again when turning on the power supply.

7. Operation Technology Instruction

⚠ **Note: The top and bottom heater will be very hot during working, so please don' touch the hot surface of the parts.**

1．Turn on power switch.

2．Move PCB Fixture bracket with PCB above the Bottom heater and make the soldered component on the PCB between Top heater and Bottom heater (the soldered elements have been placed on the PCB board). The position of the soldered chip must be corresponding with the position of the sirocco nozzles.

3．Select parameters or set the parameters with keyboard.

1. Select the required flow, such as "CH: 1", if need to modify the parameter, input the password before performing relevant operation.

2. Select "solder" working type (TY: S).

3. System starts working after clicking "START" key and running the selected flow (select among 0~9).

4. The heating arm will move downwards and then the bottom pre-heater comes to heat. The parameter "KIR" will change with the real time temperature of the bottom and when the bottom temperature up to the "T0"，the process comes to run the flow D1.

5. When completing the flows D1~D6 and into the flow D7, the heating arm moves upwards some distance. The top and bottom nozzles come to blow cooling wind and the left-side cool fan comes to run and blow the cooling wind too.

6. When completing the flow D7, the heating arm moves upwards to top and the soldering technology completes.

Note:

＊The process of the de-soldering technology is same with the soldering technology and it must selecting "D" when setting the process parameter and save it.

＊During the process, the channel mode displays "CH: a" and when the cool fan is running, the "Cool" displays "●".

8. Equipment Maintenance

8.1 Clean Parts

1. Clean the dust on system with clean towel.
2. Suggest using dry or wet towel to clean the equipment. Solder on the glass of Bottom Radiator can be cleaned out with hard object. Please be careful not to break down the glass.
3. Use the towel with cleaning oil to clean PCB fixture and orbit.

Caution: **After cutting off the power supply, please do clean after the surface of the equipment is still very hot and don't use any dangerous or combustible solvent to clean it.**

9. QUICKSOFT Introduction

9.1 Operation Interface

1、**operation interface**：This interface shows the process status, soldering and desoldering parameters can be modified by this operation interface.

Parameter sheet: Parameters can be modified in this sheet, double-click parameter value or click the type of parameter to make modification.

Temperature curve and process schedule: Facilitate real-time observation and follow-up curve analysis

Process status bar: It shows communication and working condition, on/off status of cooling fan and the position of top heater.

Operational Zone: Set the status of heating arm and fan.

Process edit window: Select working type and the down height of heating arm.

9.2 Curve Analysis

1. Curve analysis interface: this interface can analysis technological process, realize peak temperature, temperature rise, heating process temperature variation and time, judge if fit technological process.
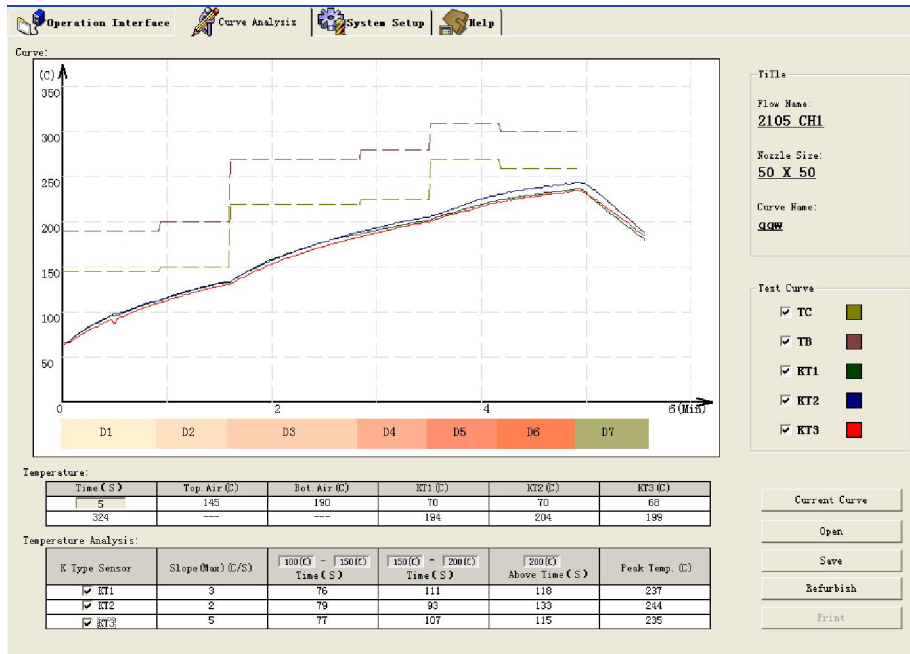
9.3 System Setting

1. System setting interface: Select communication interface, set password, curve colour and on/off of buzzer and laser.
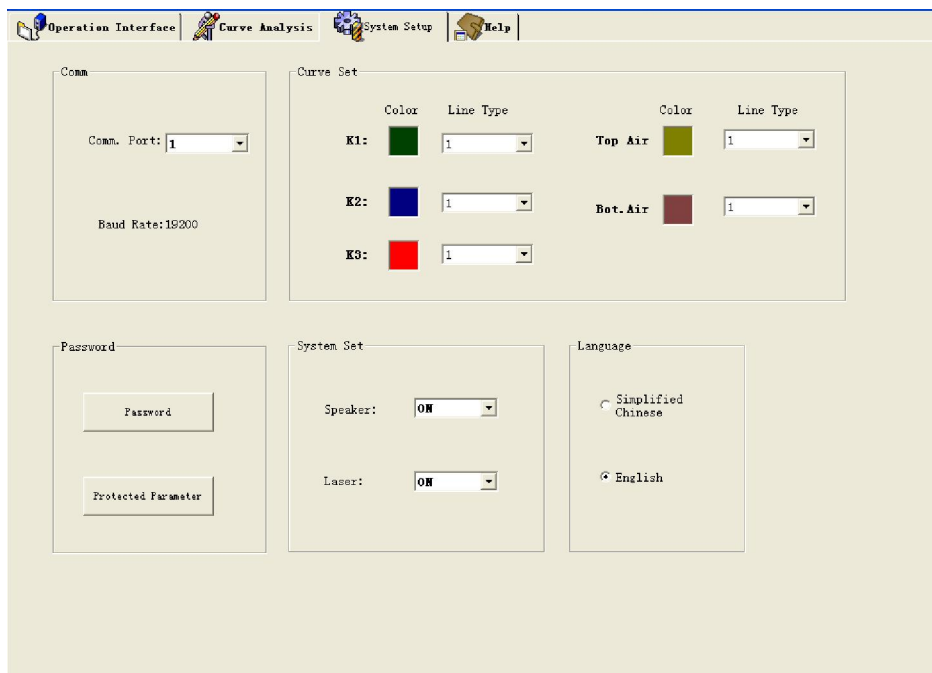
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