## **USER MANUAL**

MORE CHOICE FOR YOUR GROWING BUSINESS



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#### **FOREWORD**

Thank you for purchasing our 1+1 Pocket Banknote Sorting Machine.

For proper use and maintenance,we advise to read this user manual carefully.

# Abbreviations and acronyms Used (in the machine)

UV	Ultraviolet	SLMG(MT)	Security line magnetic
IR	Infrared	TW	Transparent Window
MG	Magnetic	HOLLOW	Hollowed - hole
CIS	Contact Image Sensor	WMF	Watermark feature
IRR	Infrared reflection	THK	Thickness
IRT	Infrared transmission	SLOC	Security line optical characteristic
WHR	White light reflection	SA	Spectral absorption
WHT	White light transmission	POVD	Optically variable ink printing
VER	Version	EF	Electrical feature
ABN	Abnormal	DENO	Denomination
REJ	Reject	ERR	Error
BL	Blacklist	C.V	Current value
ADJ	Adjust	Prt	Printing function
МС	Master control		

## 1. Packing List



1+1 Pocket Banknote Sorting Machine



1 Power Cord (According to customer needs in different countries and regions)



1 Maintenance Kit (Brush,Soft cleaning cloth,Calibration strip, Calibration paper, Screw driver)



1 User Manual



External Display (Optional)

## 2. Machine Overview

#### 1) Front view



#### 2) Back view



No.	Part Name	No.	Part Name
1	Hopper Guide	10	Dust Cover
2	Hopper	11	Back Cover Open Wrench
3	Keyboard	12	LAN Interface
4	Bottom Base Opening Lever	13	Power Socket
5	Reject Pocket	14	Power Switch
6	4.3" HD Full-color Display	15	RS232 Interface
7	Banknote Receiving Impeller	16	RS232 Interface
8	Stacker	17	USB Interface
9	Counting Digital Display	18	External Display Interface

### 3. Safety Precautions

- Do not place the machine in dusty or dirty environments.
- Do not place the machine in direct sunlight or near heat sources or air conditioners.
- Always disconnect the power cord before performing maintenance on the machine.
- Always connect the machine to an earthed socket outlet.
- Use only the supplied power cord.
- · Do not use the machine outdoors.
- Do not expose the machine to liquids.
- This machine contains rotating parts. Never touch the moving parts when the machine is switched on.
- Please ensure that no foreign objects (coins, paper clips, staples) fall into the machine, these may block the mechanical parts and the sensors of the machine and damage or break them and will void your warranty.
- Keep jewellery, long hair, ties and other protruding parts away from machine while operating it.
- Never disassemble the machine.
- To prevent shock hazard, do not touch the power cable with wet hands.
- To prevent fire or short circuit, unplug the unit if you want to move it to another position.
- Hold the plug when disconnecting the unit from the power outlet, never pull the cord.

## 4. Preparation Before Start Counting



1.Place the machine in a level and stable workplace.



2.Use the power cord to connect the machine to the power socket.



3. Turn on the machine by pressing the power switch.



4. Select the currency.



5. Choose the counting / sorting mode by pressing the **"MODE"** key or touch Mode options on the screen.



6. The banknotes should be placed neatly into the hopper, and adjust the hopper guide to fit the size of banknotes.

## **5. Control Panel - Function Keys**



M./A.)	Auto and Manual operation key. Auto:automatically counting as long as there are banknotes on the hopper. Manual: manually counting by pressing the "START/STOP" key.
BACK /ESC	Press to return the previous interface or cancel the selection.
CUR	Press the "CUR" key to enter the currency selection interface, or touch the currency flag logo on the display to choose.
BAT▶	Batch function, to preset the batch quantity.
<b></b> ■ADD	Press to enable the accumulation function.
PRINT	Press to print the current counted banknotes information.
MODE	MIX-SORT-COUNT, 3 different counting & sorting modes for cycle selection.
REP ▼	"REP" key: Press to query the counting details, including the quantity, denomination, serial number, and total value.

BAT MODE  ADD REP	Direction keys, can be used to select items and change the settings in the Menu interface.	
MENU	Press to enter the menu interface.	
"START / STOP" key: Press to start counting or to start other operations.		

### 6. Operational Instructions

#### 6.1. Currency Settings





- **6.1.1. AUTO Mode (Automatic Recognition Mode)**: In this mode, the machine will automatically recognize the currency available on the machine. Using the first banknote counted as reference, and different currencies will be sorted into the reject pocket.
- **6.1.2. MULTI Mode (Multi-currency Mixed Counting Mode)**: In this mode, multiple currencies can be mixed to count, and the machine will record the current counting details, which can be viewed by pressing the "REP" key.
- MULT LIST Interface: Here can view the details of the current mixed count, including currency, number of pieces, amount and the total quantity of all counted banknotes.
- 2 Mult\_CUR\_Total List Interface: Press "REP" key again to view the details of each currency.
- **3** Code List Interface: View detailed serial number information.





		CodeList	1/5(37)
NO.	CUR	SN	DENO
1	RUB	PG7638567	50
2	RUB	IN6961411	50
3	RUB	AA0388304	50
4	RUB	LQ4460318	50
5	RUB	PX7652601	50
6	RUB	IN6688332	50
7	RUB	KO2912854	50
8	RUB	LL8426018	50
BA	ск	PREV	NEXT

			3/5(37)
NO.	CUR	SN	DENO
17	RUB	QJ8385979	10
18	GBP	AL32229333	5
19	GBP	AK37564812	5
20	GBP	AA50244919	5
21	GBP	AK32652929	5
22	GBP	AD26063493	5
23	GBP	BA58314514	5
24	GBP	AC07969514	5
BA	CK	PREV	NEXT

#### 6.2. Counting / Sorting Mode Choose



**6.3. BATCH Function** – Select the batch number and the machine will automatically stop counting when the counted pieces arrived the batch quantity







## **6.4. ADD Function** – This function is used to add the counting results of multiple counts to the total



#### 6.5. Detailed Description of Mode Settings

#### 6.5.1. MIX Mode

Press the **"MODE"** key, or touch the mode option on the screen to select the mode (cycle selection). In **"MIX"** mode, the machine will count the mixed denomination banknotes of the selected currency.



In the "MIX" and "SORT" mode, after counting is completed, press the "REP" key to view the current counting details.

**TOTAL LIST:** including denomination,number of counted notes,amount, and total value. Then touch **"CODELIST"** on the screen to check the serial number for each banknote.

MIX(AUT	0)	TOTAL LIST		1/1 (2)
DENO		PCS	AMOUN	VT.
10		3	30	
50		14	700	
Total	·	17	730	
iotai		17	750	
BACK	PRINT	GRANDLIST	CODELIST	NEXT

			1/3(17)
NO.	CUR	SN	DENO
1	RUB	PU7018983	50
2	RUB	IU9607376	50
3	RUB	FK9095433	10
4	RUB	VM5185852	10
5	RUB	QF8385979	10
6	RUB	LQ4460318	50
7	RUB	OA0388304	50
8	RUB	IN6961411	50
BA	СК	PREV	NEXT

#### 6.5.2. SORT Mode

Press the **"MODE"** key, or touch the mode option on the screen to select the mode (cycle selection). In **"SORT"** Mode, the machine will count the same denomination of the selected currency,and the banknotes with different denominations & currencies than the first counted banknotes will go into the reject pocket.



There are five sorting options available - VALUE (DENO) / FACE / ORIENT / ATM / FIT. Sorting mode options can be selected according to different sorting needs.







					1/1(2)
	DENO				LAIN
1	5	AC02621581	24	Image Face	
		AD13071856	24	Image Face	













In the "MIX" and "SORT" mode, when suspicious banknotes are detected or false alarms occurring, the machine will sort them out into the reject pocket, and you can touch "REJ" on the screen to check the detailed information of each reject banknote. Both modes include all counterfeit detection features. And Add function and Batch function are also available.



#### 6.5.3. COUNT Mode

Press the **"MODE"** key, or touch the mode option on the screen to select the mode (cycle selection). In **"COUNT"** Mode, the machine will only count the number of banknotes, and has no other counterfeit detection features.



#### 6.6. Power-on Self-check prompts & Handling methods

When powering on, the machine will enter the initialization status and perform a self-test. It will check the condition of the machine. After a successful self-test, the machine is ready to start working. If the back cover and bottom base are opening, the machine will alert the error to the user on the display. Please close them and press "START/STOP" key. If the dust cover is abnormal, please check and adjust it.





Tips: "Pocket 1 Full" and "Reject Pkts Full", please remove the banknotes.

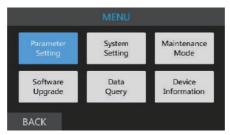
If the banknote channels are blocked, please open the back cover or the bottom base to remove the jammed banknotes.





### 7. Menu Setting

Press the **"MENU"** key or touch **"MENU"** on the screen to enter the menu setting interface. Use the direction keys to select or touch the screen to enter the sub-menu to change settings and parameters.



#### 7.1. Parameter Settings

Users can set the Device Parameter / Identify Setting / Identify Level Select / Sorting Fitness to adjust device parameters and detection fitness.



Here have a special function in Device Parameter settings - Grand Total (This function can record the historical summary list)

There are three switch options: OFF / AUTO / MANUAL







When select the "AUTO" record, the machine will automatically record the result of each counting. Press "REP" key to check the current counting information, then touch the "GRAND TOTAL" on the screen to check Grand Total List Details. And you can choose to PRINT or CLEAR all data.





When select the "MANUAL" record, you need to long press the "ADD" key to manually record.



When "OFF", the function is disabled by default.

#### 7.2. System Settings

Users can adjust Time Settings / Network Settings / Print Settings / Language Selection, and reset the parameters to factory settings.



**7.2.1. Time Set -** Use the direction keys to adjust the time settings, press the "LEFT" or "RIGHT" direction key to select an option, and then press the "UP" or "DOWN" direction key to change the value.



**7.2.2. Network Set -** Users can set the Local IP / Net Mask / Gateway / Mac ID / Local Listen Port here.



**7.2.3. Print Set -** This function is used to set the built-in printer / external printer.

Here users can set the print mode - Manual or Automatic printing, remember to set the Baud Rate to let the printer and the machine are at the same rate.

If the print space is too narrow on the paper, users can change the **"Extra Free Lines"** to add more space on the paper. **"Auto Cut"**: When this function is enabled, the printed paper can be cut automatically.





The printer should be Thermal Printer, and the connection port of the printer is RS232 PORT-DP9. And in order to print successfully, the machine should keep the same baud rate with the external printer, users can modify it through settings.

#### **Two Out Formats:**

#### **1** Total List

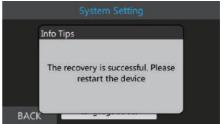
	SD	1-09 16:10:	51
Deno	Po	S	Amount
1	X	6 =	6
Total		6 =	6
END	EE 11050	-10000000000000000000000000000000000000	
USD	1	B1647146	7H
USD	1.	F8784231	6L
USD	1	E6885125	OF
USD	1	B6579250	4H
USD	1	H1394781	5C
USD	1	J3671648	20

#### 2 SN with total list

Time CUR Mode	: 202 : USD : MIX	4-08-0	16	:10:47
Deno	1 x	Pcs	3 =	Amount 6
Total		(	3 =	6
END	****		-445	

#### **7.2.4. Factory Reset -** Reset the machine to factory settings.





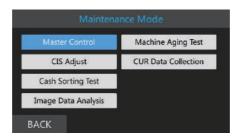
#### **7.2.5. Language Select -** Users can change system language here.



#### 7.3. Maintenance Mode

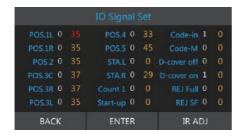
Here users can adjust the Master Control / CIS Adjust / Cash Sorting Test / Image Data Analysis / Machine Aging Test / CUR Data Collection.

In this mode, please follow the engineer's guidance and do not debug the machine at will, so as to avoid some errors in the whole system.



#### 7.3.1. Master Control

IO Signal Set / Motor Set / MC Reset







#### 7.3.2. CIS Adjust

**CIS Calibration** includes "Static Calibration" and "Dynamic Calibration", which needs to be done after placing the calibration strip / paper in the specified position.

Please follow the engineer's guidance and do not debug the machine at will.





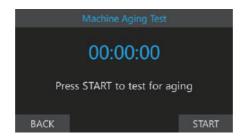
#### 7.3.3. Cash Sorting Test

Enter the "Cash Sorting Test" interface, put in the banknote to be tested, and the display will show parameter values such as banknote stains (the maximum reference value is "255", the higher the value, the more complete and newer the banknote is).



#### 7.3.4. Machine Aging Test

Testing the aging of motors, please do not operate at will.



#### 7.3.5. Image Data Analysis

This function can analyze the characteristics of banknotes under different light sources and counterfeit detection functions.

Enter the "Image Data Analysis" interface, put in the banknote to be analyzed, then users can check RGB / IR / UV / IRT / WHT / MG feature images of the banknote. Press the "START/STOP" key to view the front or back side of the banknote.





#### 7.3.6. CUR Data Collection

This function helps users to collect the currency image data for New Currency Development and False Alarm Improvement. Use a U-Disk to storage and transfer the data from machine to PC. Then, send the data to engineers. After improvements, users will get the updated software and files.





#### 7.4. Software Upgrade

Image Update / MC (Master Control) Update / UI Update / FPGA Update / Export Data / Import Set / Exec Script / DATA Clear.

(Please follow the engineers' guidance)

Download the software file to a U-disk, connect the U-disk to the machine, turn on the machine and select the update mode, follow the steps, and restart the machine after the update is completed.

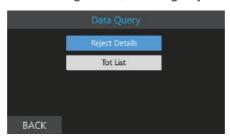


Notice: In the Export Data, users can use a U-disk to export the historical counting data, select to export 1 day, 7 days, 30 days or all the data.



#### 7.5. Data Query

Here users can view the counting details, including Reject details / Tot List.



## **7.5.1. Reject Details -** Check the rejection information and reason explains for each rejected banknote.



#### **7.5.2. Tot List -** Details of the latest counting.





#### 7.6. Device Information

Users can view all the information about the device here.



### 8. Machine Cleaning

#### 8.1. Regular cleaning

For optimal performance, regular cleaning of the device's internal parts and sensors is required. Dust and dirt will affect the function of the sensor, can also damage bearings and electronic parts and cause abnormal problems with the machine.

This section provides guidance for your regular cleaning. The specifics will depend on your usage.

If you process a large number of banknotes everyday, or if the banknotes counted are very dirty or greasy, you may need to clean the machine more often. When cleaning shafts, rollers, wheels or other rotating parts, turn each part by hand to clean its entire surface. And clean the sensor components, especially the glass of the image sensor unit.

#### Cleaning tools:

- Soft-bristled brush
- · Lint-free, non-abrasive cloths

#### Note:

When cleaning, be careful not to damage the machine. The touch screen surface and the sensors inside the machine should be handled with particular care.

#### 8.2. Clean the banknote channels

- ▲ Disconnect the machine from the power supply
- ▲ Open the back cover or base bottom switch cover and check if there is any jammed banknote in the channel, please remove it.
- ▲ Use the lint-free, non-abrasive cloths to wipe away any dust from the top and bottom surfaces, sensors, and rotating wheels.
- ▲ If the stain remains, dampen a soft, lint-free cloth with water or a non-contaminant 50/50 mixture of isopropyl alcohol and water. Wring out as much liquid as possible. Do not let any liquid drop into the device.

## 9. Technical Parameters & Specifications

Counterfeit Detection	Dual CIS, IR, MG, MT,UV
Counting Speed	900 / 1000 / 1200 notes/min
Hopper Capacity	500 - 1000 notes
Stacker Capacity	200 notes
Reject Pocket Capacity	100 notes
Banknote Size	Length & Width: 60 x 85 mm-100 x 190 mm Thickness: 0.08 mm-0.12 mm
Dimensions	285(W)*285(D)*335(H) MM
Packaging Size	380(W)*375(D)*410(H) MM
Weight	N.W.: 12 KGS, G.W.: 14 KGS
Interface	RS232*2 / USB / LAN / External Display
Power Supply	100 ~ 240 V AC, 50 / 60Hz
Power Consumption	<60W

## 10. Troubleshooting List

After the power-on self-test, if the display shows "0", the machine is ready to work. If an error or abnormality occurs, the machine will prompt the error message and abnormal position on the display.

Please follow the table as below to solve the problems.

Error code	Reason	Solution
0x01	Purple light anomalous	Move machine away from light source, adjust the fitness for the light detecting.
0x02	Code disk anomalous	Check the motor circuit and driving parts. If damaged, please change new encoder.
0x03	B2 Left counting tube anomalous	Clean up dust with a brush. Readjust it. If damaged, please change it.
0x04	A2 Right counting tube anomalous	Clean up dust with a brush. Readjust it. If damaged, please change it.
0x05	Cash inlet tube anomalous	Move machine away from light source, clean dust. Change the optocoupler if necessary.
0x06	Cash receive tube anomalous	Clean dust. Re-tighten it. Change the optocoupler if necessary.
0x0B	B1 IR anomalous	Clean dust. Re-tighten it. Change it if necessary.
0x0C	A1 IR anomalous	Clean dust. Re-tighten it. Change it if necessary.
0x80	Big MG probe error	Clean dust. Re-tighten it. Change the MG probe if necessary.
0x81	A1 left edge MG anomalous	Clean dust. Adjust distance. Change the MG probe if necessary.
0x82	A2 left edge MG anomalous	Clean dust. Adjust distance. Change the MG probe if necessary.
0x83	A3 left edge MG anomalous	Clean dust. Adjust distance. Change the MG probe if necessary.
0x84	A4 left edge MG anomalous	Clean dust. Adjust distance. Change the MG probe if necessary.
0x85	A5 left edge MG anomalous	Clean dust. Adjust distance. Change the MG probe if necessary.
0x86	B1 right edge MG anomalous	Clean dust. Adjust distance. Change the MG probe if necessary.
0x87	B2 right edge MG anomalous	Clean dust. Adjust distance. Change the MG probe if necessary.

0x88	B3 right edge MG anomalous	Clean dust. Adjust distance. Change the MG probe if necessary.
0x89	B4 right edge MG anomalous	Clean dust. Adjust distance. Change the MG probe if necessary.
0x8A	B5 right edge MG anomalous	Clean up dust with a brush. Readjust it. If damaged, please change it.
0x90	CIS upper R light source anomalous	Clean dust and foreign matters.
0x91	CIS upper G light source anomalous	Clean dust and foreign matters.
0x92	CIS upper B light source anomalous	Clean dust and foreign matters.
0x93	CIS upper UV light source anomalous	Clean dust and foreign matters.
0x94	CIS upper IR light source anomalous	Clean dust and foreign matters.
0x95	CIS bottom R light source anomalous	Clean dust and foreign matters.
0x96	CIS bottom G light source anomalous	Clean dust and foreign matters.
0x97	CIS bottom B light source anomalous	Clean dust and foreign matters.
0x98	CIS bottom UV light source anomalous	Clean dust and foreign matters.
0x99	CIS bottom IR light source anomalous	Clean dust and foreign matters.
0x9A	CIS anomalous, something cover it	Clean dust and foreign matters.
0x9B	CIS static parameter uninitialized	Clean dust and foreign matters. Readjust it.
0x9C	CIS RTK parameter uninitialized	Clean dust and foreign matters. Readjust it.
	CIS IRT light source anomalous	Clean dust and foreign matters.
	CIS RGB light source anomalous	Clean dust and foreign matters.

