PRODUCT SPECIFICATION

CRT-711

Card Issuing/Collecting Machine

With RFID Card and Barcode Read/Write

VER 1.0

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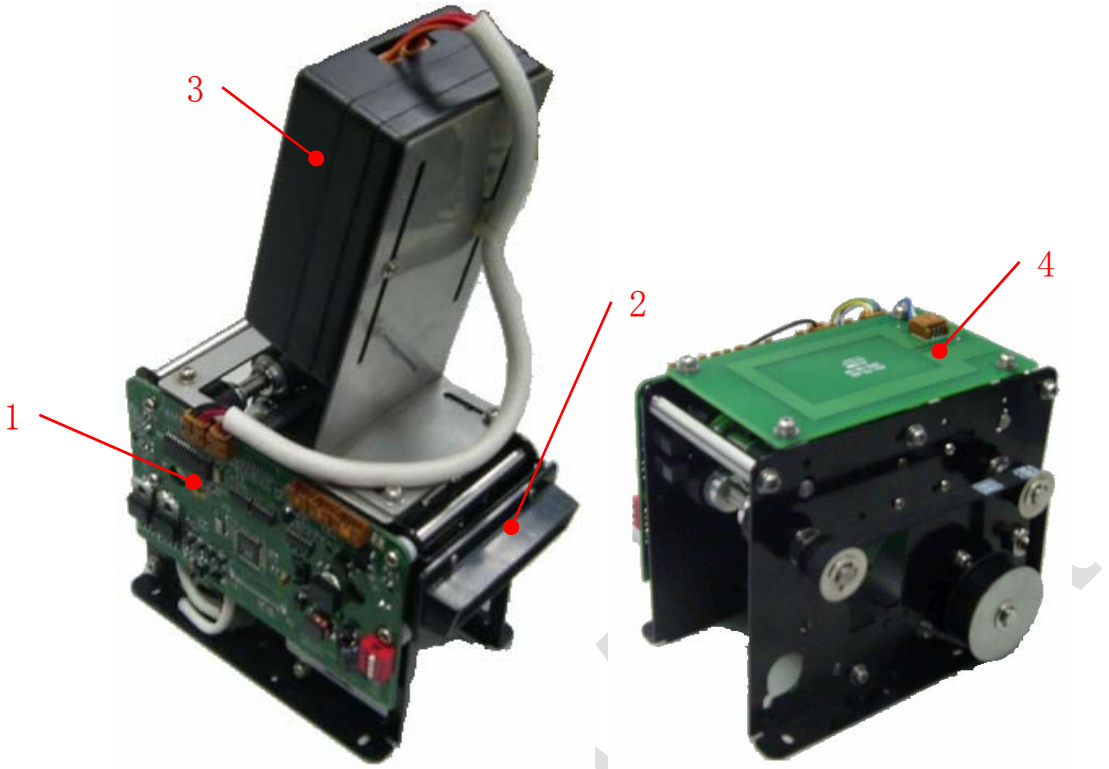
Revision Log

Ver.	Date	Contents
1.0	2010.07.20	First Release

Main Structure of CRT-711



1---- Collecting machine

2---- Bezel component (Optional)

3---- Scanner component

4---- RFID card component

Warning：The machine can not access to power supply which is higher than 30V DC, otherwise the machine will be broken.

Contents

1. Overview

CRT-711 is multifunctional card issuing/collecting machine with barcode scanner or RFID card read/write functions. The machine could have barcode scanning or RFID card (Including Type A & B) read/write function. The machine adopts high-intensity and anti-corrosion material. And provide customized service such as SIM Card board for RFID read/write option, preserve control interface for error card bin sensor, multi-unit communication option. CRT-711 could be widely used in Card Park, theatre, and other entertainment places in which use member cards.

2. Functions

1) Collect cards from front and card could be sent out and be retracted.

2) Support RFID card read/write (Type A, B), RFID card should be complied with ISO standard. For more information, please refer to according RFID card standards.

3) Support infrared scanning for one-dimension barcode read. (E.g. 39 code, EAN code, UPC code, 128 code and 93 code)

4) SIM card board could be equipped to CRT-711 for RFID module option.

5) Preserve sensor control interface for error card bin

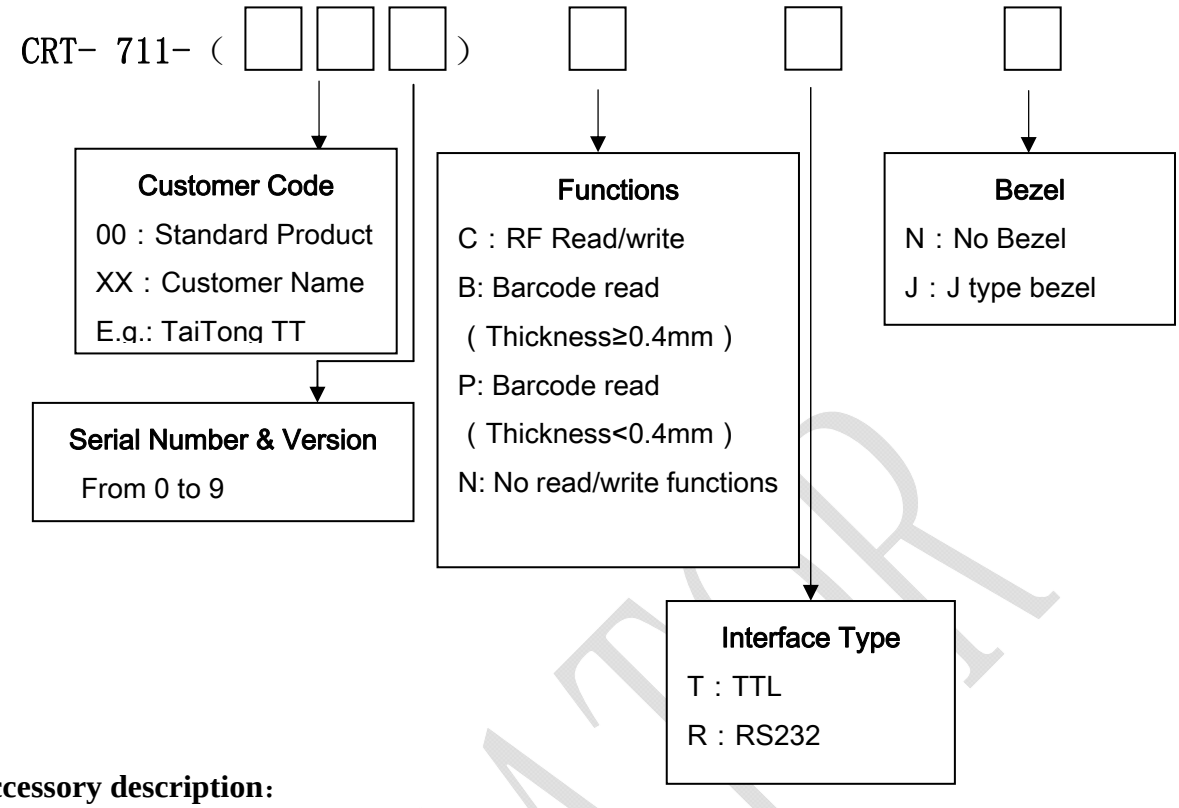
6) Support multi-unit communication, the maximum support number for multi-unit is 16

7) TTL interface is available

3. Technical Specification

- **Power**
  DC 24 V ± 5%
- **Current consumption**
  Static current 40mA
  Peak current 800mA
- **Transportation Speed**
  22cm/s
- **Interface**
  RS232
- **Card specification**
  Length：85～86mm Width：50～55mm Thickness：0.2～2mm
- **Net Weight**
  Approx. 0.7Kg（Excludes accessory and package for 001 version）
- **Installation Drawing**
  Refer to Structure and Dimension Drawing
- **Life time**
  Transportation： 500,000 times Min （20+/-5℃，35～60%RH）
  （Movement of backward and forward count as one time）
- **Error Rate**
  RFID card ：Read /write 1,000 time，Error rate is lower than 1 time
  Notes：The test card is in the line of standard
  Bar code：Scan 10,000 time，error rate is less than 1 time
- **MTBF**
  At least 100,000 hours（Only for electric component）
  Notes：Condition: 250 times/day ,25days/month，300hours/month
- **Environment**
  Operation: 0℃～50℃, 0～90 % RH （non-condensing）
  Storage: -10℃～75℃, 0～95 % RH （non-condensing）
- **Support IAP on line download**
- **Comply with RoHS standard**
- **RFID card**
  Comply with ISO14443-3 (TYPE A：E.g. S50, S70, UL and so on）
  Comply with ISO14443-4（TYPE A CPU：E.g., Mifare plus, Mifare defire, TYPE B CPU and so on）

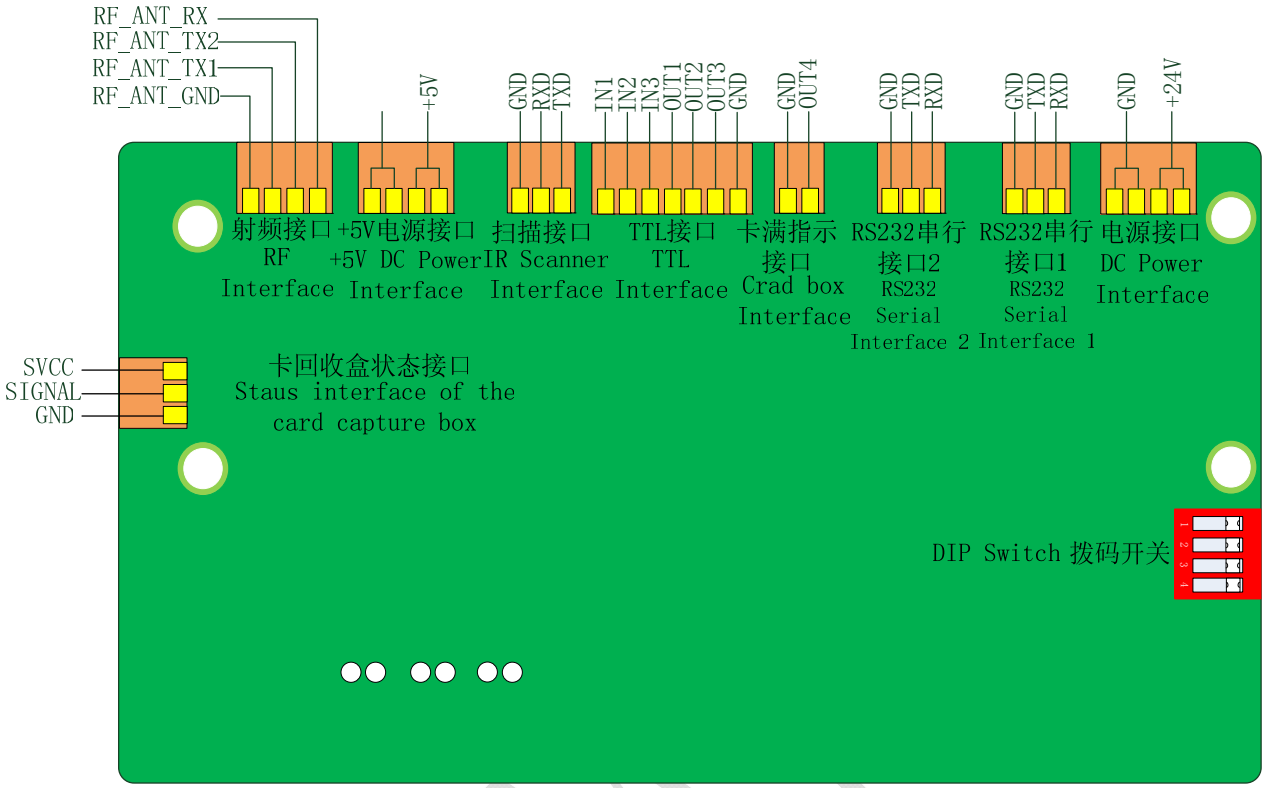
4. Product Model Number Specification



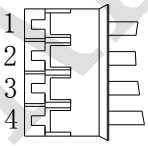
- **Accessory description:**

Name	Model number	Qty	Notes
386 Power Cable	L14-332-153	1	4 PIN connector with 4 cables, 1 in red , 1 in yellow and 2 in black, the length of cable is 1.5m
3PIN communication cable	L14-323-153	1	3 PIN connector with 3 cables, 1 in brown, 1 in red and 1 in orange, the length of cable is 1.5m

5. Interface Specification

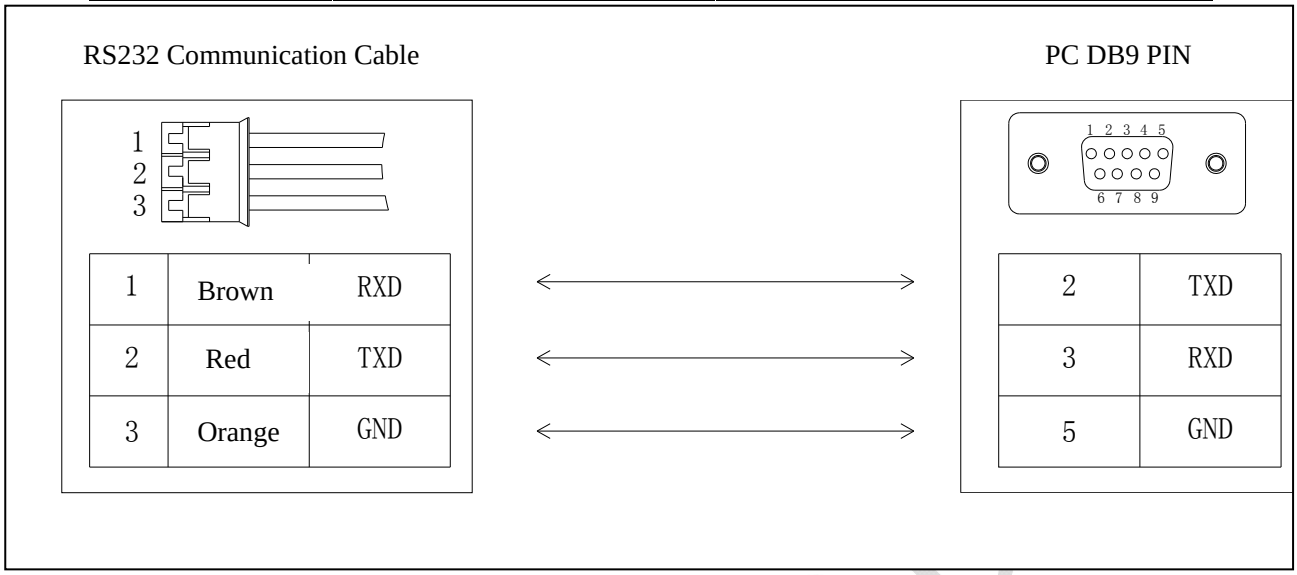


Picture1 CRT-711 interface



1	Red	+24V
2	Yellow	+24V
3	Black	GND
4	Black	GND

Picture2 4 PIN Power cable



Picture3 3PIN Communication cable and PC DB9 PIN

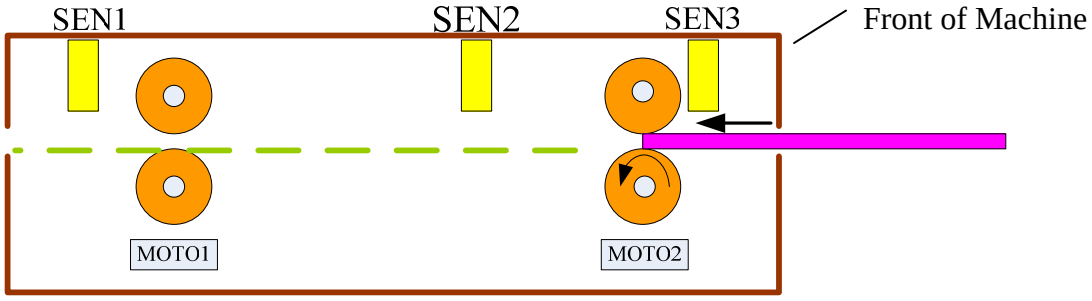
Pin No.	Signal	IN / OUT	Status	Valid Status
IN1	Eject Card	IN	High level "5V"	Low level impulse (Impulse width is more than 100ms)
IN2	Retract card	IN	High level "5V"	Low level impulse (Impulse width is more than 100ms)
IN3	Collect Card Enable	IN	High level "5V"	Low level"0V"(Enable)
OUT1	Status of machine	OUT	Low level "0V" (No card)	High level"5V" (Have card)
OUT2	Operation Successful	OUT	Low level "0V"	High level"5V" (Success)
OUT3	Operation failure	OUT	Low level "0V"	High level"5V" (Error)
GND	Ground	GND		Common Ground

Form1 TTL interface

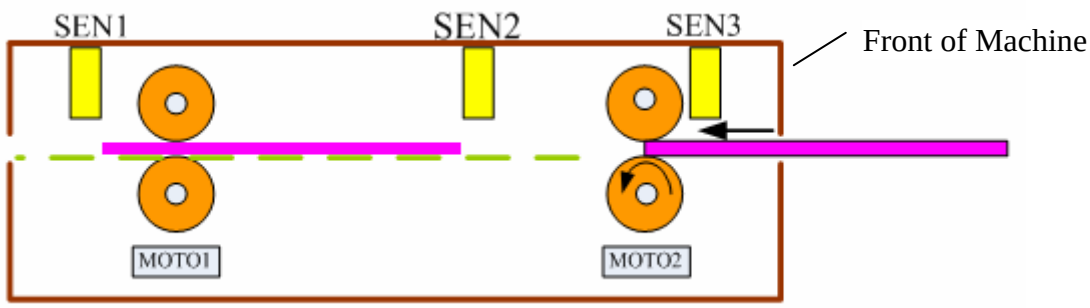
Pin No	Signal	IN / OUT	Status	Valid Status
OUT4	Error card bin status	OUT	Low level "0V" (Error card bin is not full)	High Level"5V" (Error card bin is full)
GND	Ground	GND		Common Ground

Form2 Interface for error card bin status specification

6. Photoelectric Sensor Specification



7. Card Stop Position



8. DIP Setting for Each Unit (Multi-machine communication)

Setting address of each machine though 4 digit DIP switch (Please See form 3)

DIP switch	1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
	2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
	3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
	4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Address		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15

Form3. Dip Switch Setting

9. DEMO Operation Specification

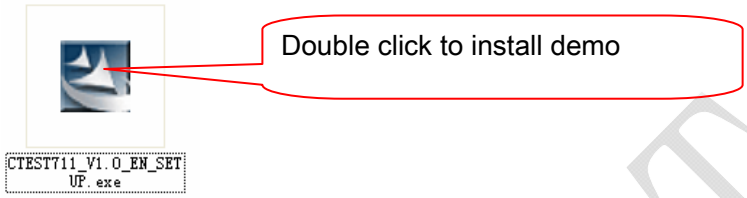
1）Connection Correctly

Firstly plug 3pin communication cable on PCB board, and then plug 4pin power cable. Pay attention to the input voltage (24V).

2）Demo Installation

Demo's installation documents are as the behind.

Double click on CTEST711_V1.0_EN_SETUP.EXE. The installation will create a shortcut icon on your desk and program column.



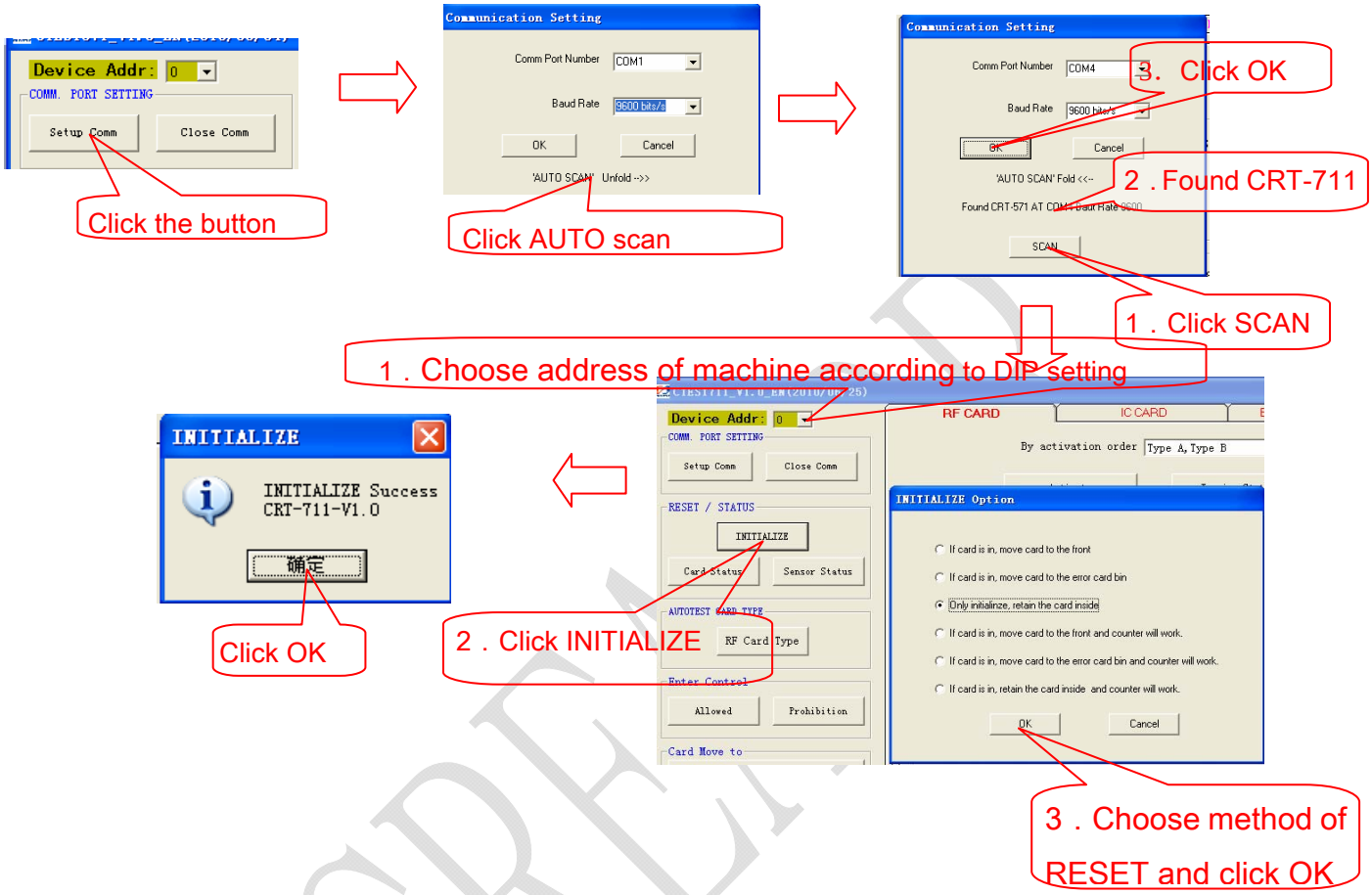
3）Use Demo to Test The Reader

① Double click on the shortcut of DEMO program to test the machine.

②After demo is launched，click 'Enter' to enter operation interface (Depicted above)

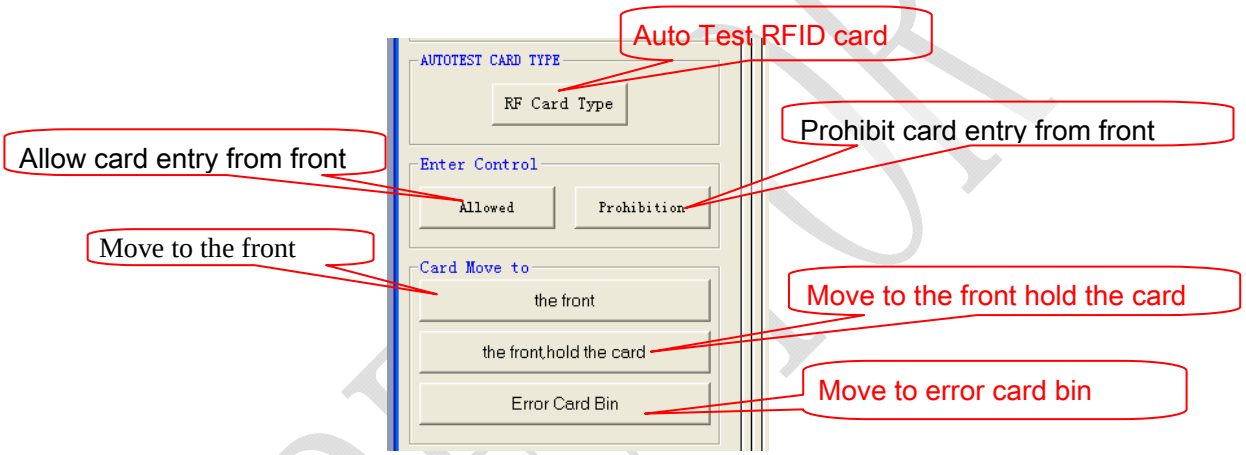
③Com port setting and Initialization：The machine needs to be initialized before usage.

Please follow these steps as below：

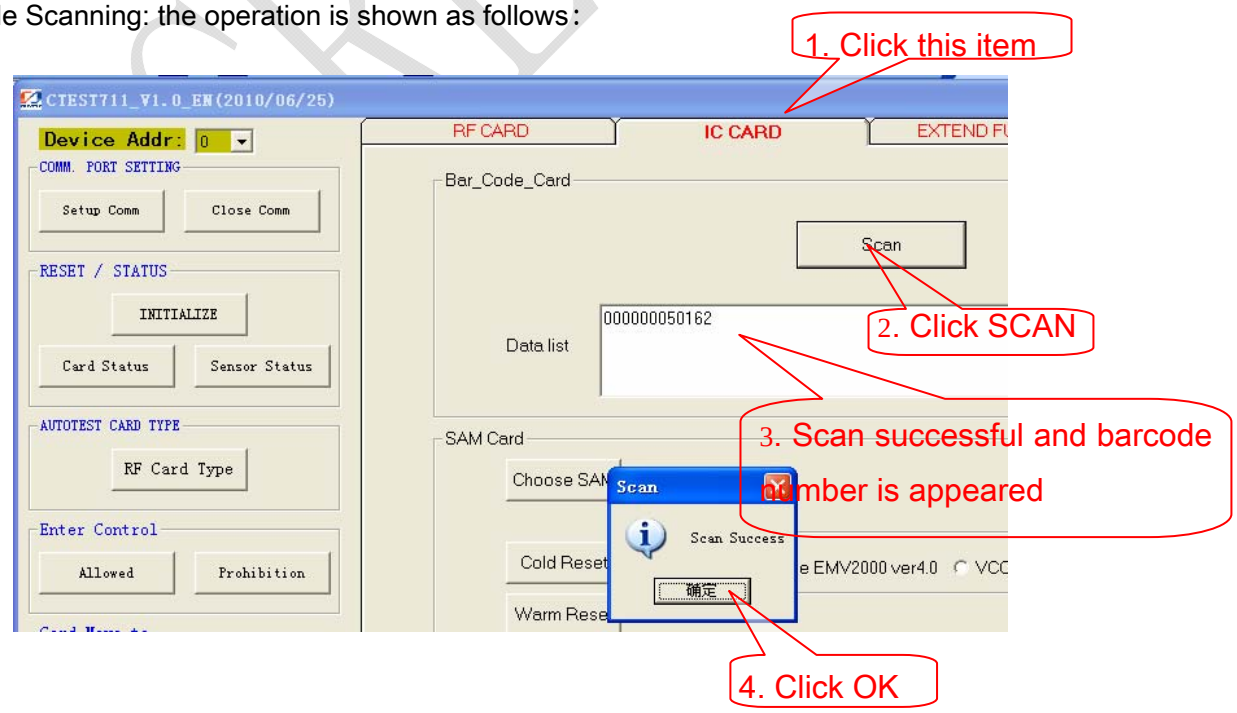


④Card Movement Operation and IC card Read/Write

Firstly, setting card front entry control before usage. Click “allow” for enabling front card in, so that card could be insert from the front. And move the card to the front hold the card position, the front and error card bin according to relevant requirement. If the machine have RFID card read/write functions, click “RF card Type” (See the picture in following)



⑤ Barcode Scanning: the operation is shown as follows:



10. Maintenance

After a long time usage, factors such as the machine's transportation mechanism wear and tear, dust on sensor, magnetic head and IC card contact will influence the performance of the machine, hence the machine should be maintain on a constant basis.

Detail maintenance instruction is as following:

1) Use a cleaning card or a cloth with alcohol to clean machine's two groups of driving rolls when they are stained.

2) Use a cloth with alcohol to clean the 3 U shape sensors to make them clean.

3) Periodic maintenance – You are recommended to maintain the sensor, rubber wheel of the machine after every 3,000 cycle operation. (Move forward and backward count as 1 time)

① Sensor maintenance：Use the sensor status inquiry command to examine sensors' status. When the reader is running under good condition, all its 3 U shape sensor groups' status are 'OFF'; If any sensor group's status is 'ON', it is possible to be covered by dust; You can try to clean the sensor.

② Rubber wheel maintenance：Periodic maintenance is needed and uses alcohol to clean the dust on the rubber wheel.

③ Scanning head maintenance：Use clean dry close to wipe the scanning head to make it cleans.

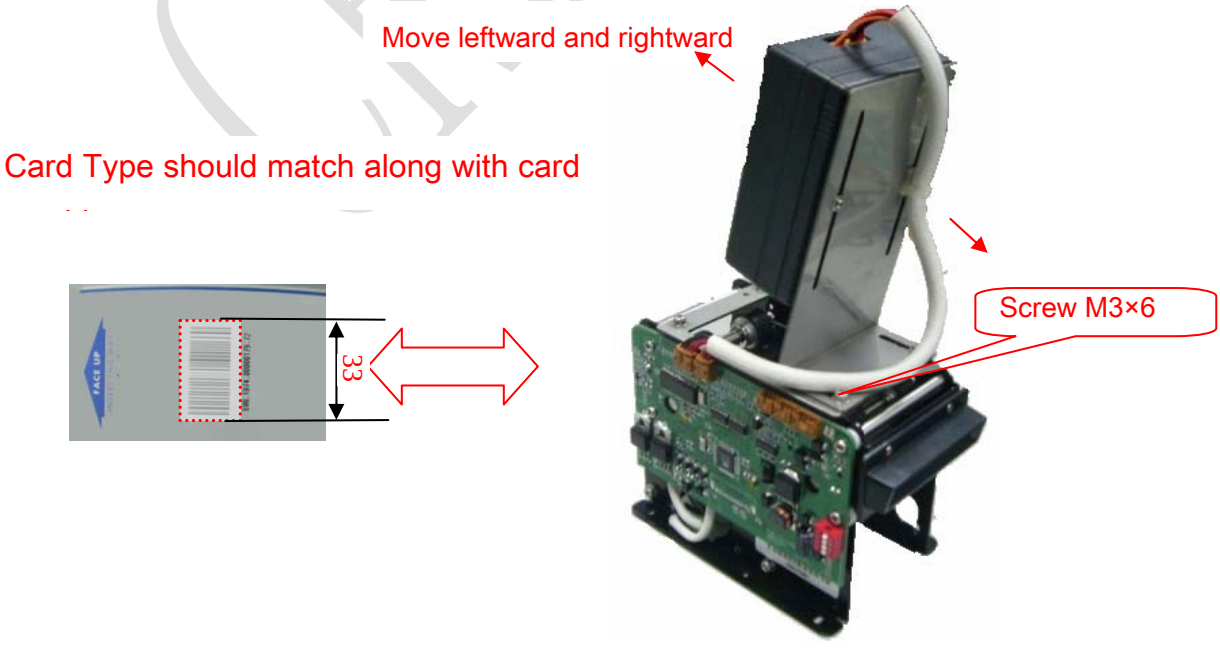
11. Cautions

1) Before maintenances, make sure the power connection is cut off in order to avoid machine damage.
2) Pay attention to DIP specification, wrong DIP number will bring about no work and unknown status.
3) Prohibit warm plug in and out of connector. Warm plug will cause circuit damage.
4) Keep machine non-greasy, oily cohesive will deadly influence the performance of machine.
5) Pay attention to the power off sequence, cut off power first and then cut off communication cable.
6) Pay attention to insert direction, the card should be inserted from front.
7) The adjustment of scanning head:

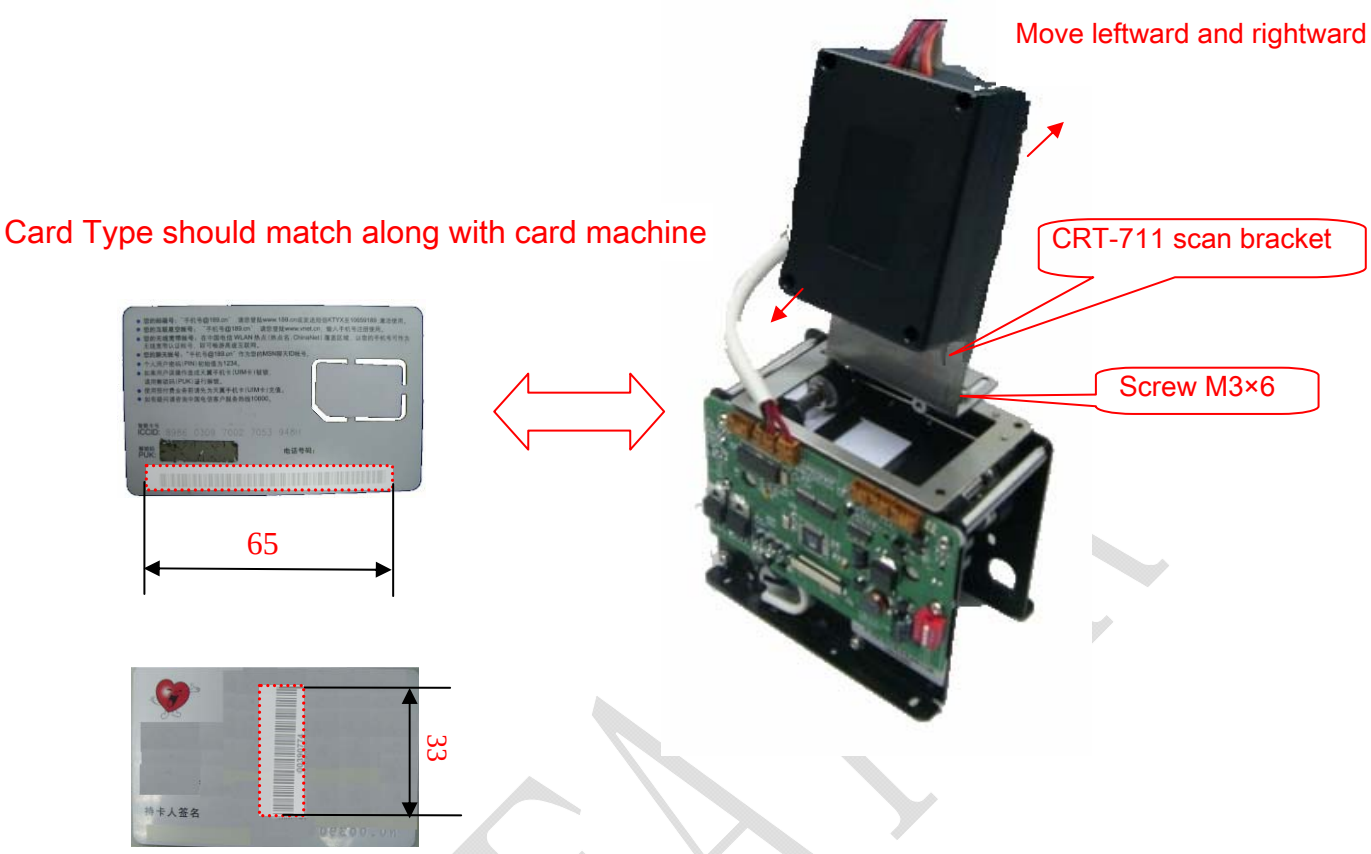
   Notes: There are coordination of barcode and the machine, CRT-711-(001) PRX is fitting for barcode in the middle. CRT-711-(001) BRX is fitting for barcode on the long edge.

   According to different type of card, the barcode position will have some shift, the scanning head of CRT-711 could be adjusted to fit to the card, the process of adjust is followed:

   1. Unscrew the M3x6, and move the bracket leftward or rightward.
   2. Stable the bracket if move to the best reading position.



CRT-711-(001) PRX



CRT-711-(001) BRX

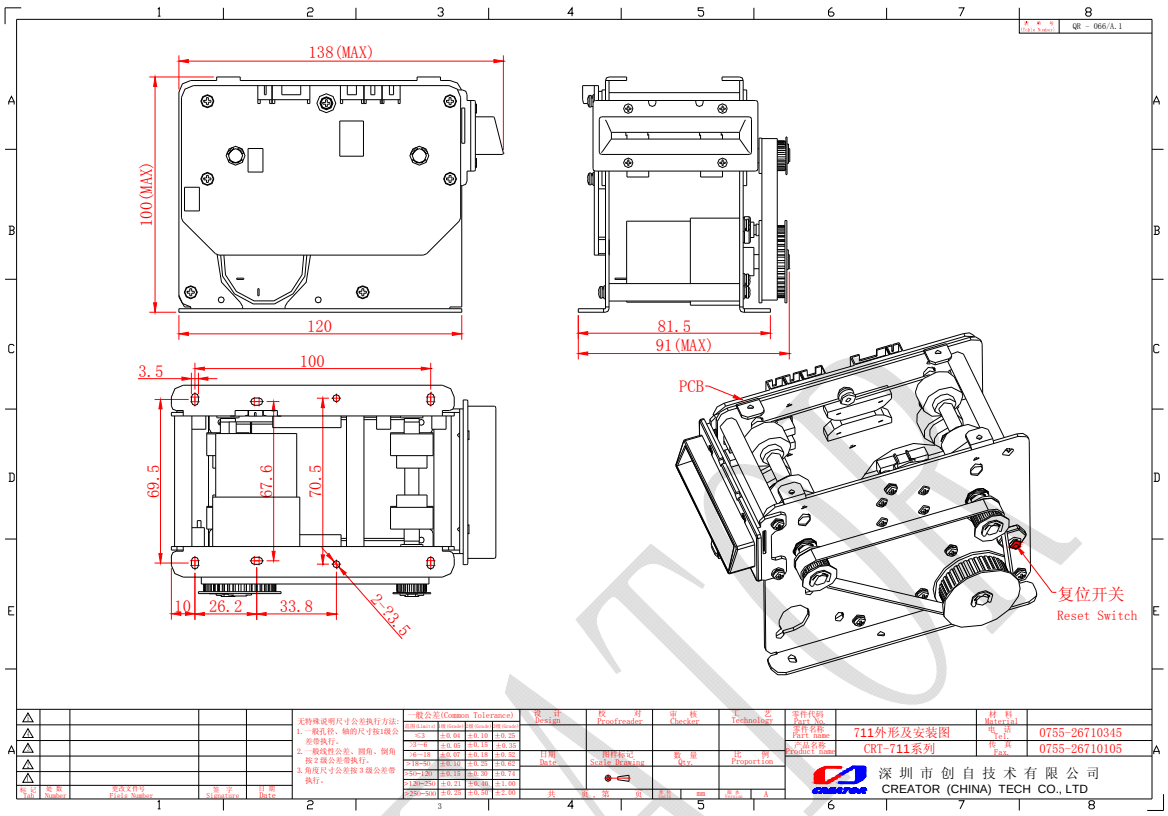
12. Reference document

1) DLL: CRT-711-DLL

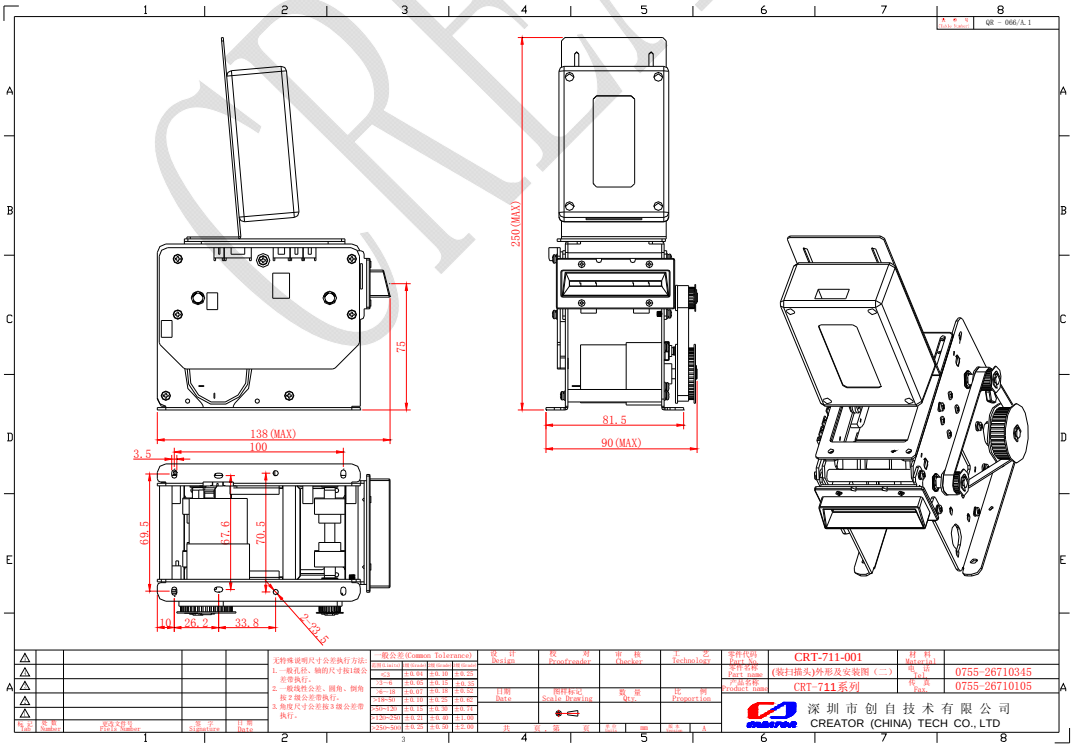
2) DLL Specification: DLL example code and instruction

3) Communication protocol：CRT-711-V10 communication protocol. PDF

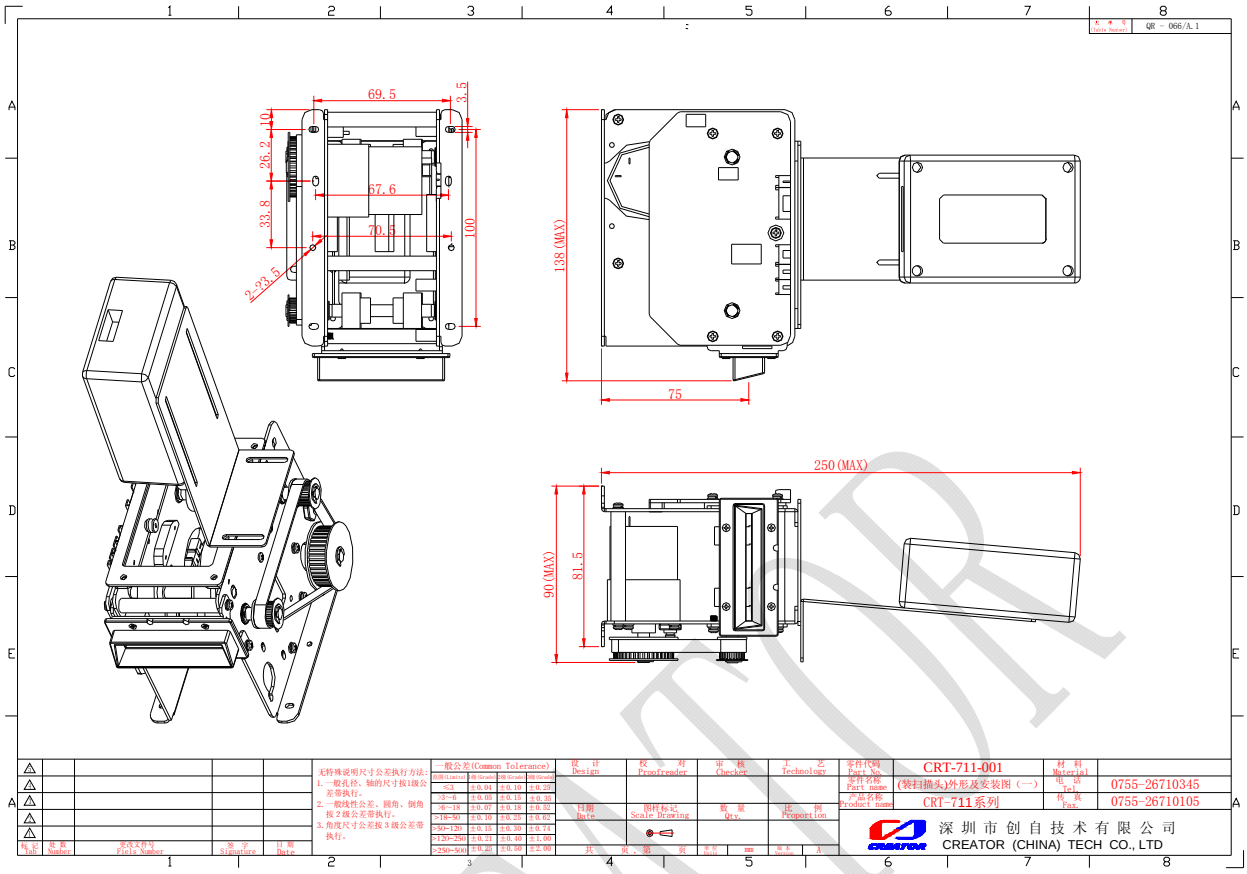
13. Structure and Dimension Drawing



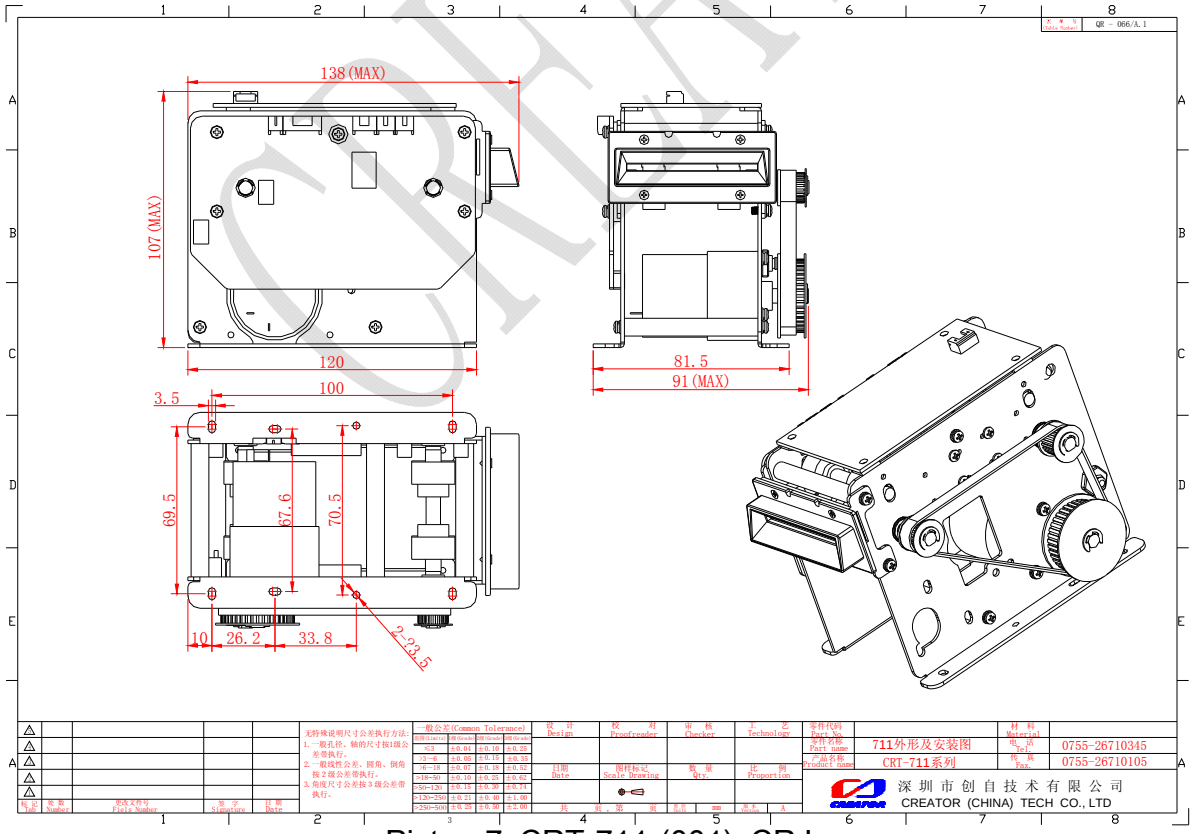
Picture4 CRT-711-(001) NRJ



Picture5 CRT-711-(001) PRJ



Picture6 CRT-711-(001) BRJ



Picture7 CRT-711-(001) CRJ