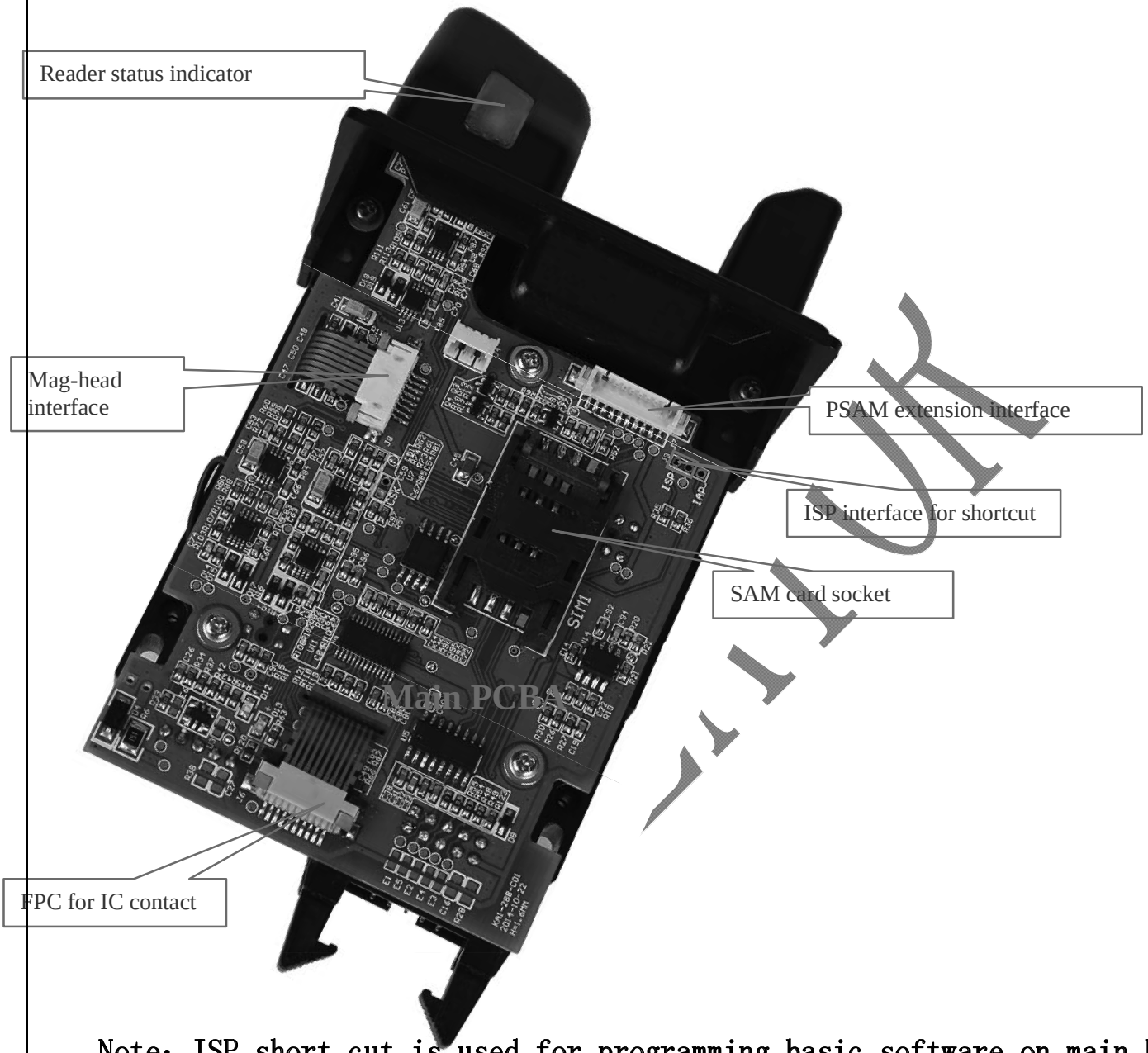
Revision record

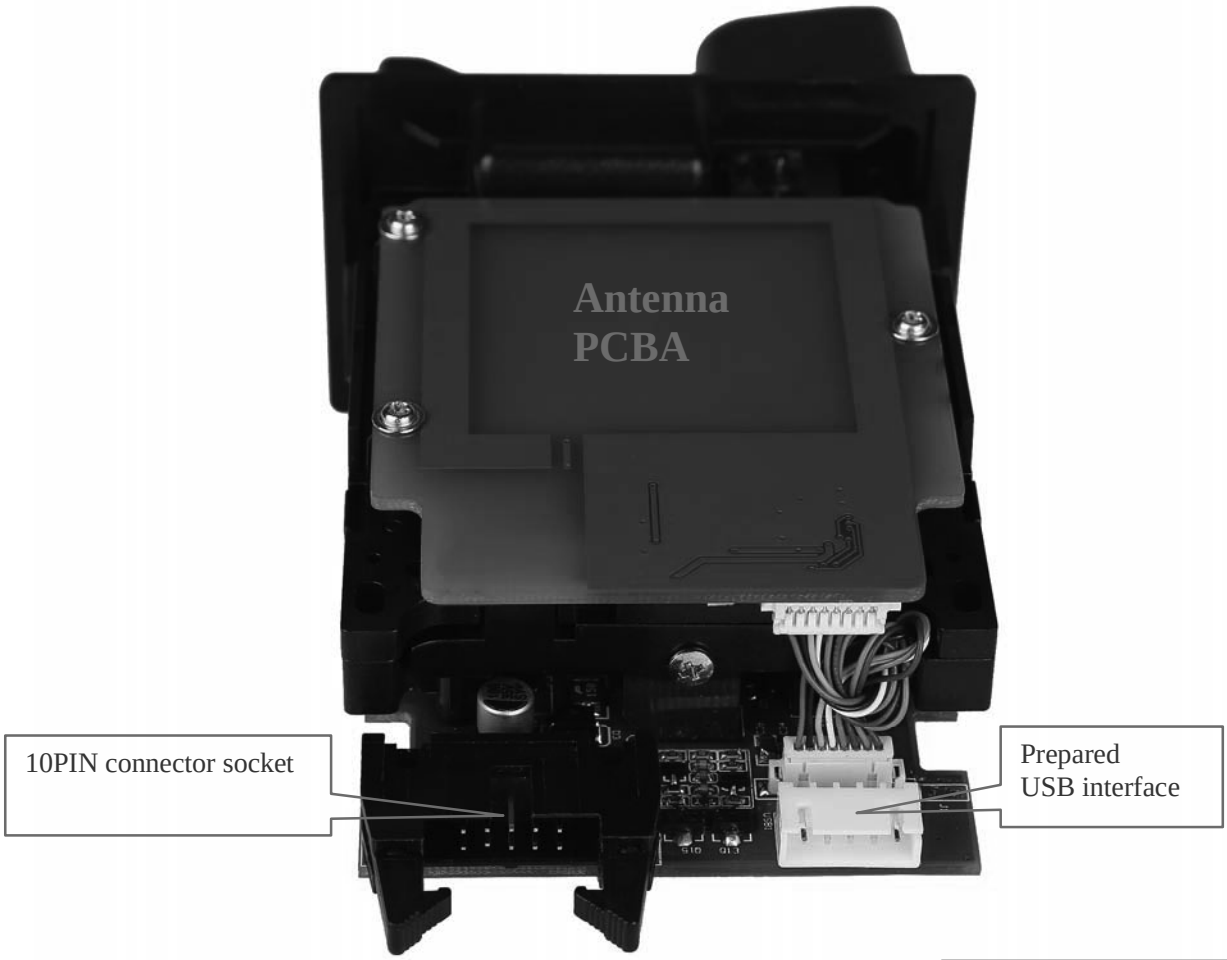
version	date	content
1.0	2015.02.10	First release

CREATOR

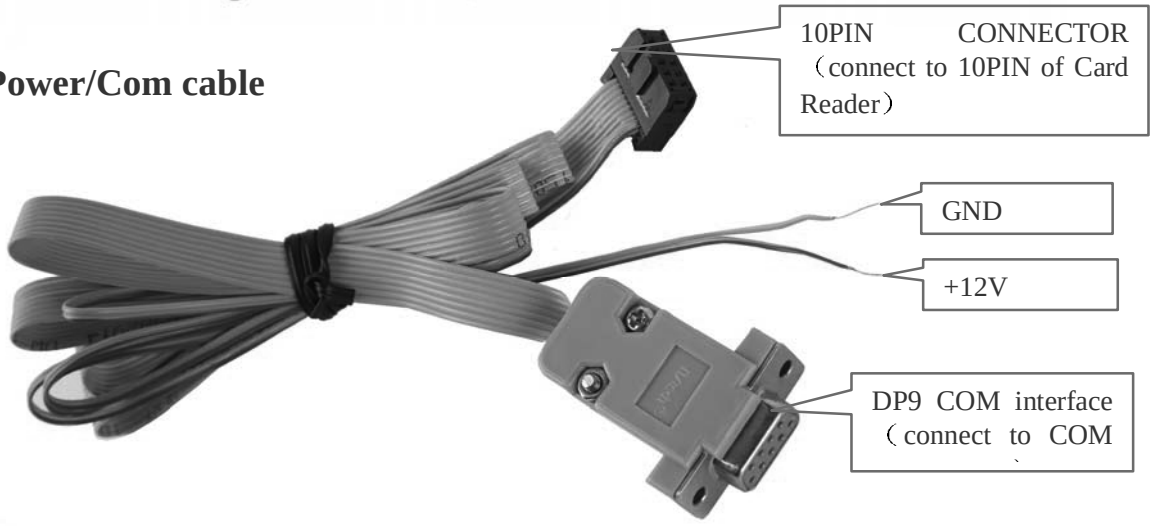
Welcome to use Creator products, please read the manual carefully before you use it !



Note: ISP short cut is used for programming basic software on main PCBA



Power/Com cable



Note: DC higher than 14V is prohibition , it may damage the machine! ! !

Be careful the power terminals, strictly connect them as the manual describing!!!

1、General View

CRT-288-C001 is a manual insertion card reader with controlled card latch and performs the following features:

1）Read ISO standard magnetic stripe cards, RFID cards and IC card

2）with card latch function，automatic unlock suffering power down

（note：fail to latch as following）

①When the card is not pushed in completely, it may not be able to latch.

②If a user is going to pull out a card forcibly during a latch, even if ICRW cancel a latch, a latch may not be able to open. In this case, once a user must push in a card, and then, pull out a card.

3）Agile magnetic stripe reading type: Read when insert/withdraw and uploaded passively /actively

4）bezel design is compliant with ergonomics，stable performance for reading mag-stripe card and easy operate

5）reader shutter with preventing foreign object function，effectively reduce the man-made damage risk.

6）with transparent design of structure，effectively reduce the dust and foreign material influence on the performance of machine reading card；

2、Model Number Specification and Accessories

CRT-288- C 001 - H C B Y

Bezel picture (real object)：

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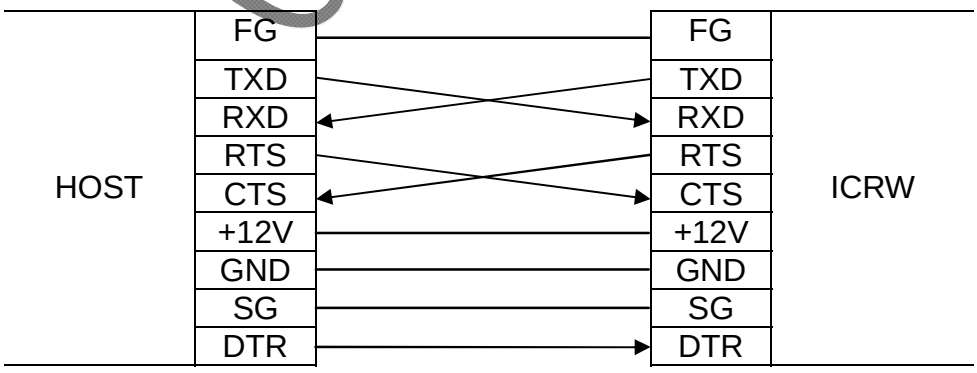
2.2、Com standard parts instruction：

Name	S/N	Q'ty	Remark
288C Power/Com cable	L16-070-203	**1**	10PIN head，DB-9PIN head，length 1.5M

2.2.1 10PIN head connector definition

Pin No.	PIN define	Input/output	Remark
1	+12V	IN	VCC
2	GND	--	GND
3	TXD (SD)	OUT	Data sending end
4	RXD (RD)	IN	Data receiving end
5	RXD (RD)	OUT	Request to send
6	CTS (CS)	IN	Clear sending
7	Reset	IN	reset
8	* S.G.	--	Signal GND
9	N.C.	--	NC
10	F.G.	--	GND

2.2.2 Reader 10PIN socket and Com cable definition



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3、Technical Specification

1) Power DC 12V±10%

2) Working current Less than 250mA

3) Interface RS232 or USB Interface (Automatically detect)

4) Card Specification Width: 53.92～54.18 mm Length: 85.47～85.90 mm
Thickness: 0.76mm ± 0.08 mm

5) Net Weight about 150g（Excluding accessory and package）

6) Dimension Refer to dimension drawing

7) Reliability A. Vibration: No negative effort on all functions under normal condition after exposed15min.each on X, Y and Z directions of 2mm amplitude, from 5 to 50Hz/min vibrate and acceleration is 2m/S²(0.2G).
B. Shock: No negative effort on all functions under normal condition after shock one time on X, Y and Z directions of 294M/S², 11ms peak acceleration shock.

8) Life time Magnetic head 1,000,000 times Min
IC card contact carrier and contact: 300,000 times Min
Latch Mechanism: 1,000,000 times Min

9) Error Rate Magnetic card: ＜1/1,000 （15～25℃，35～60%RH, perfect and standard card）
IC card: ＜1/1,000，（15～25℃，35～60%RH, perfect and standard card）
RFID card: ＜1/10,000，（15～25℃，35～60%RH, perfect standard card）

10) Warp card Height of warp card: less than 2mm

11) MTBF ＞1 X10^5 hrs (Electronic components only)
Note：250 times/day，25 days/month，300 hrs/month

12) Environment Operation: -25℃～50℃， 0～90% RH （no condensing）
storage: -25℃～80℃， 0～95% RH(no condensing，dried before usage)
normal environment：15～25℃，35～60%RH

13) IC card standard
ISO7816 standard certified, EMV2000 Level1, PBOC3.0 (WITH CERTIFICATE) e.g.（AT24C01, 24C02, 24C256, SLE4447, SLE4428, CPU T=0/T=1）

14) Magnetic card standard
Physical characteristics: ISO7810 and 7811 standard compliant
Card dimensions: ISO7810ID-1- type card compliant

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Embossing: ISO7811-1, ISO7811-3 compliant

Recording format: ISO7811-2, ISO7811-4, ISO7811-5, ISO7811-6 complaints

15) RF card standard

ISO14443-3 compliant (TYPE A：e.g. S50,S70,UL etc)

ISO14443-4 compliant（TYPE A CPU, TYPE B CPU e.g. Mifare plus, Mifare DesFire etc）

4、Maintenance

After long time usage, transportation mechanism would wear and tear, dust on sensor, magnetic head, IC card contact will influence the performance of module, so it should be maintained on a constant basis.

Detail instruction is as following:

- Use a cleaning card with alcohol to clean magnetic head by pulling and inserting in card reader for several times.
- Insert a cleaning card with alcohol and execute auto test IC card several times to clean IC card contact.
- Periodic maintenance: Maintaining the module (Magnetic head, IC contact, Mechanism) every 20,000 cycle is recommended.

（ One cycle: card in and card out ）

Different components' maintenance is as following:

1) IC card contact maintenance: Insert an IC card with alcohol; execute auto test IC card

2) Magnetic head maintenance: Insert/pulling a cleaning card with repetition.

5、Causion

- Make sure power is disconnected before maintenance to prevent the device from damage.
- Oil will dramatically influence card reader's performance, please keep the device from oil absorbent adhesive.
- Active/passive data upload method for magnetic stripe card reading has been designed
- Setting magnetic stripe card reading method: Read when insertion or pulling, set reading mode in DEMO.
- Keep anything away from magnetic head and its cable.
- IC card insertions direction: when cards is inserted from the front, IC chip faces up, the end with

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IC chip

- Magnetic card insertion direction: Magnetic stripe face down and keep it to the right

6、Other Document

1) DLL：CRT_288_K001.DLL

2) DLL specification: DLL source code and instruction

3) Communication protocol：CRT_288_K001_protocol.PDF

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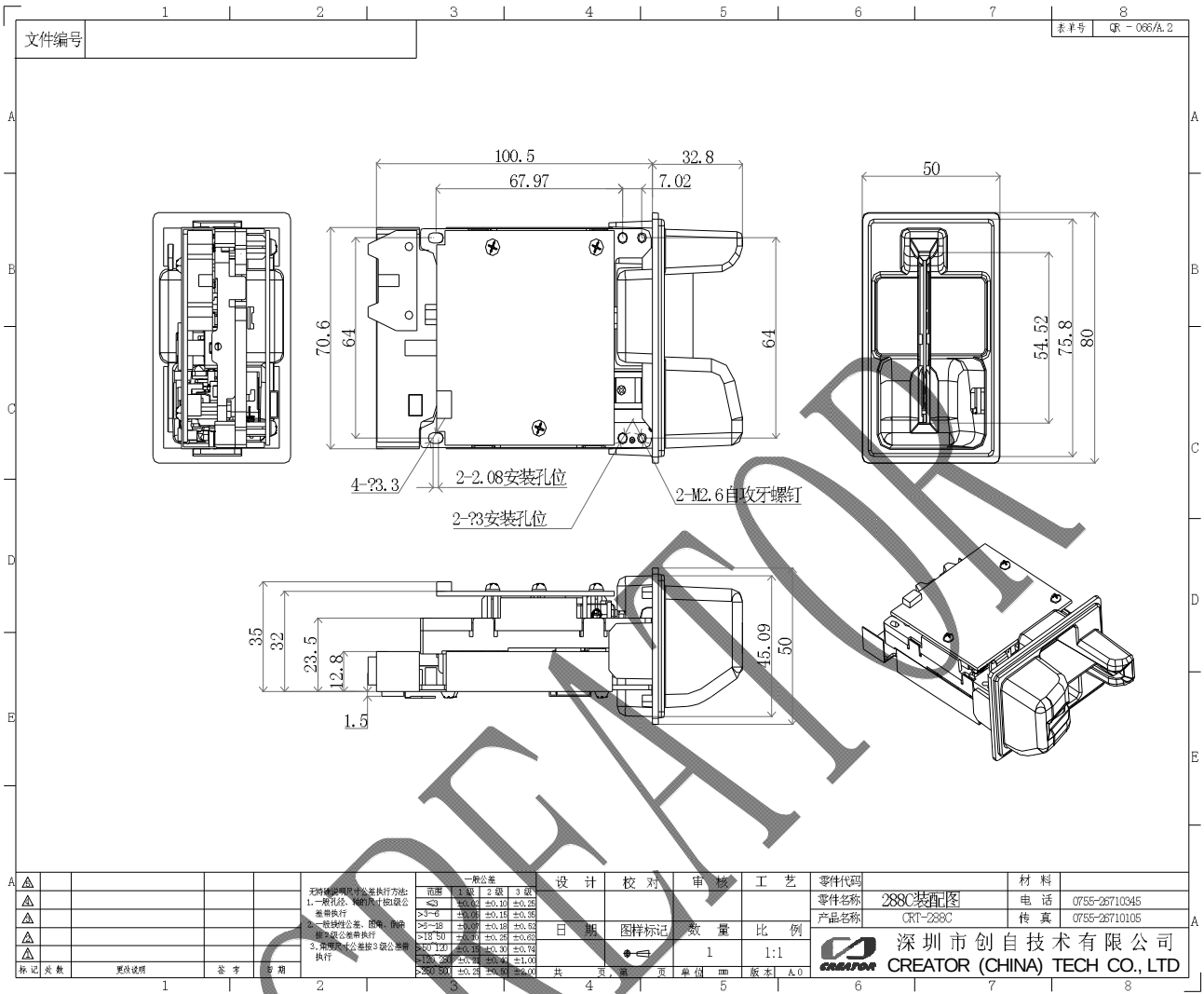
7、Structure Drawing



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