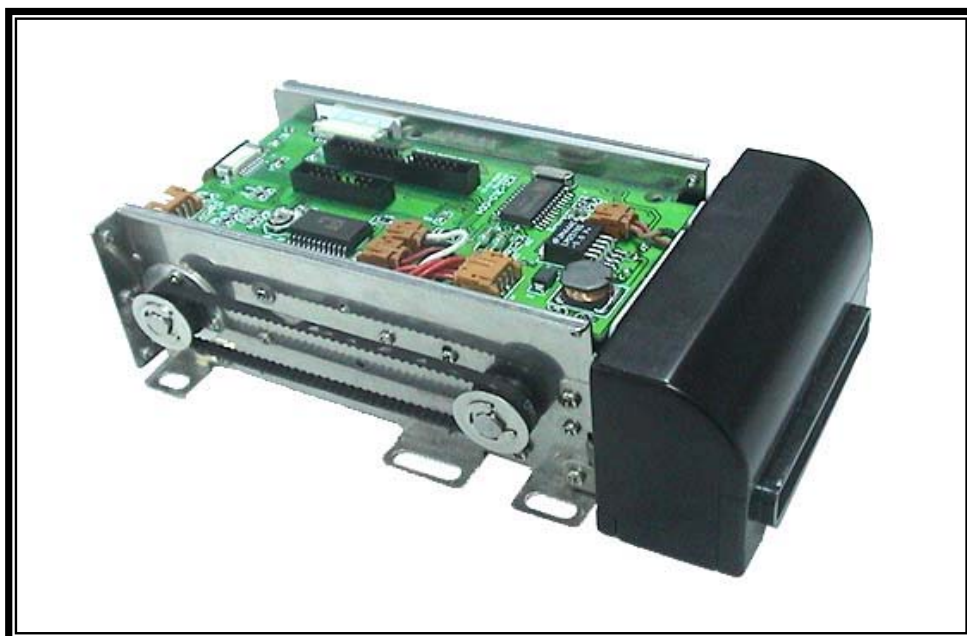


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PRODUCT SPECIFICATION

CRT-310 TTL SPECIFICATION MOTOR CARD READER



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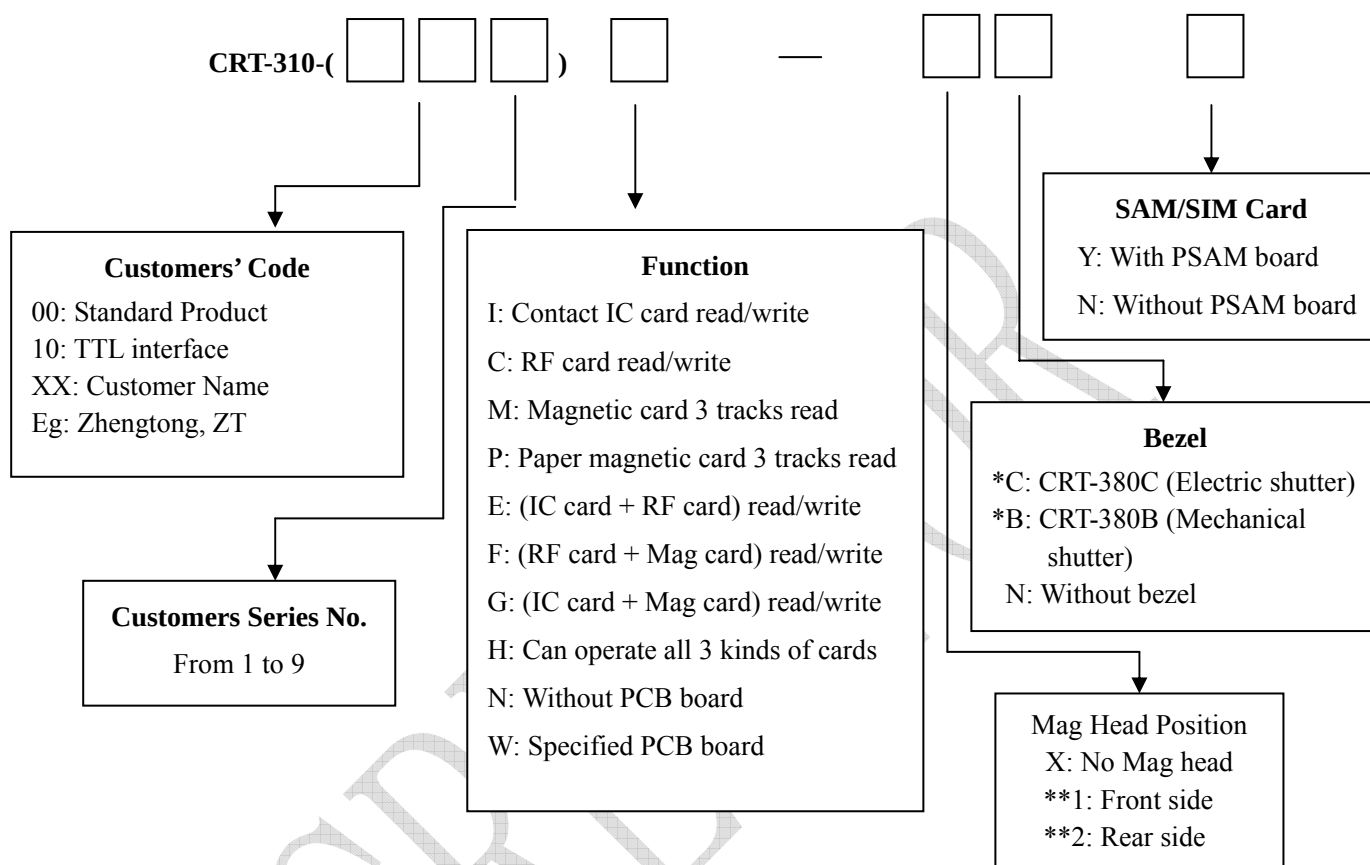
Fax: +86-755-26710105

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A. Model Specification



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B. CRT-310 I/O Specifications:

1. Power Supply J3: (4 Pins Power supply interface instruction)

Pin No.	Signal Symbol	I/O	Description	Remark
1	+12V	-	Power 12V DC Input	DC 12V I _{max} =2A
2	+12V	-	Power 12V DC Input	
3	GND	-	Ground	
4	GND	-	Ground	

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2. Interface for Input / Output J6: (30 Pins connector interface instruction)

Pin No.	Signal Symbol	I/O	Description
1	+5V	O	+5V Power output
2	+5V	O	+5V Power output
3	SCD-SW	O	Shutter Card Detected for Switch
4	/PSS1	O	Position Sensor Signal #1
5	/PSS2	O	Position Sensor Signal #2
6	/PSS3	O	Position Sensor Signal #3
7	/PSS4	O	Position Sensor Signal #4
8	/PSS5	O	Position Sensor Signal #5
9	/PSS6	O	Position Sensor Signal #6
10	/SOEIC	I	IC Card Contact Press Shutter Enable
11	/RDP1	O	Read Data Pulse Track 1
12	/RCP1	O	Read Clock Pulse Track 1
13	-	-	(System Reserved)
14	-	-	(System Reserved)
15	/RDP2	O	Read Data Pulse Track 2
16	/RCP2	O	Read Clock Pulse Track 2
17	-	-	(System Reserved)
18	-	-	(System Reserved)
19	/RDP3	O	Read Data Pulse Track 3
20	/RCP3	O	Read Clock Pulse Track 3
21	-	-	(System Reserved)
22	-	-	(System Reserved)
23	/SCD-M	O	Shutter Card Detected for magcard
24	/SOE1	I	Shutter Open Enable 1
25	/SOA	O	Shutter Open ACK
26	/SOE2	I	Shutter Open Enable 2
27	MDDR	I	Motor Drive Direction Reverse
28	/MDSE	I	Motor Drive Start Enable
29	GND	-	Ground
30	GND	-	Ground

[NOTE] “/” in table means Negative Logic.

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3. Interface for Input / Output J4: (16 Pins connector interface instruction)

Pin No.	Signal Symbol	I/O	Description
1	+5V	O	+5V Power output
2	C1	*	IC card VCC
3	C2	*	IC card RESET
4	C3	*	IC card CLOCK
5	C4	*	IC card RESERVE
6	C5	*	IC card GND
7	C6	*	IC card PROGRAM VPP
8	C7	*	IC card IN/OUT
9	C8	*	IC card RESERVE
10	MIFCS	I	Mifre Card read Contact CS
11	MIFRST	I	Mifre Card read Contact RESET
12	SCK	I	Mifre Card read Contact CLOCK
13	MOSI	O	Mifre Card read Contact DO
14	MISO	I	Mifre Card read Contact DI
15	-	-	(System Reserved)
16	GND	-	Ground

[Note] * Direct IC Contact

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4. Contents of Input / Output Signal

4.1 Motor Driver

Inputs		Function
MDSE= L	MDDR= L	Motor Forward
MDSE= L	MDDR= H	Motor Reverse
MDSE= H	MDDR=H	Motor Stop
MDSE= H	MDDR=L	-

4.2 /PSS#: Position Sensor Signal

Signal		Card Existence
PSS#	L	Exist
	H	Don't exist

[Node] # = 1,2,3,4,5,6

4.3 /RDP#: Read Data Pulse

TTL-compatible interface (clock& data)

Signal		Data
RCP# = L	RDP# =L	0
RCP# = L	RDP# =H	1
RCP# = H	RDP# =L	Not Data
RCP# = H	RDP# =H	Not Data

[Node] : # = 1,2,3

RCP1 RDP1 : Track 1 79 characters max. (6 bit + 1 parity)

RCP2 RDP2 : Track 2 40 characters max. (4 bit + 1 parity)

RCP3 RDP3 : Track 3 107 characters max. (4 bit + 1 parity)

4.4 /SOE: Shutter Open Enable

Signal		Function
/SOE1	SOE1=L SOE2=L	Shutter Full Power Open
	SOE1=L SOE2=H	Shutter Full Power Open
/SOE2	SOE1=H SOE2=L	Shutter Haft Power Keep Open
	SOE1=H SOE2=H	Shutter close

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4.5 /SOA: Shutter Open ACK

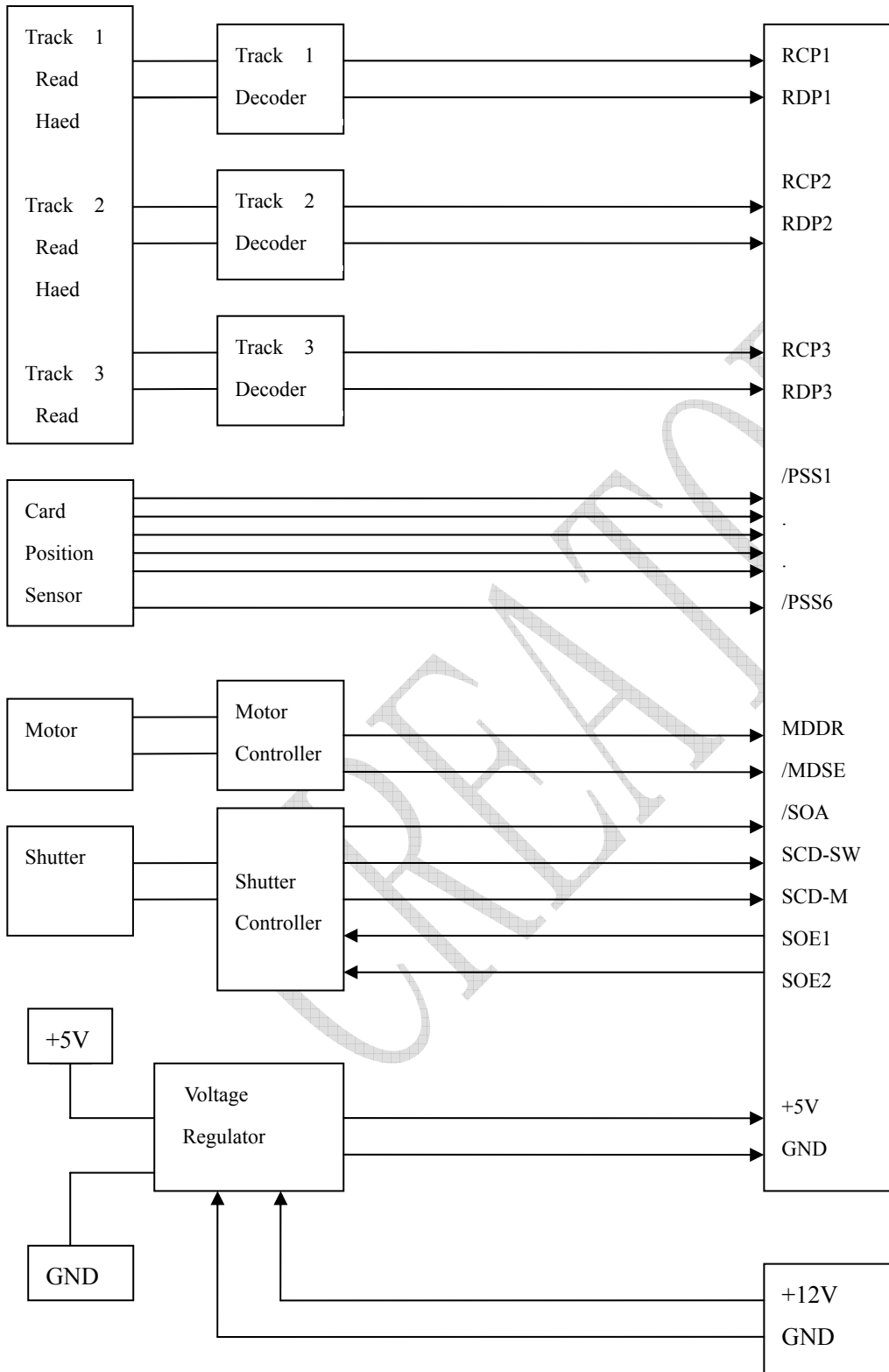
Signal		Function
/SOA	L	Shutter Opening
	H	Shutter close

4.6 /SCD-M /SCD-SW: Shutter Card Detected

Signal		Function
SCD-M=L	SCD-SW=L	Detected Magcard Insert
SCD-M=H	SCD-SW=L	Detected Card (No Magcard) Insert
SCD-M=H	SCD-SW=H	Nothing

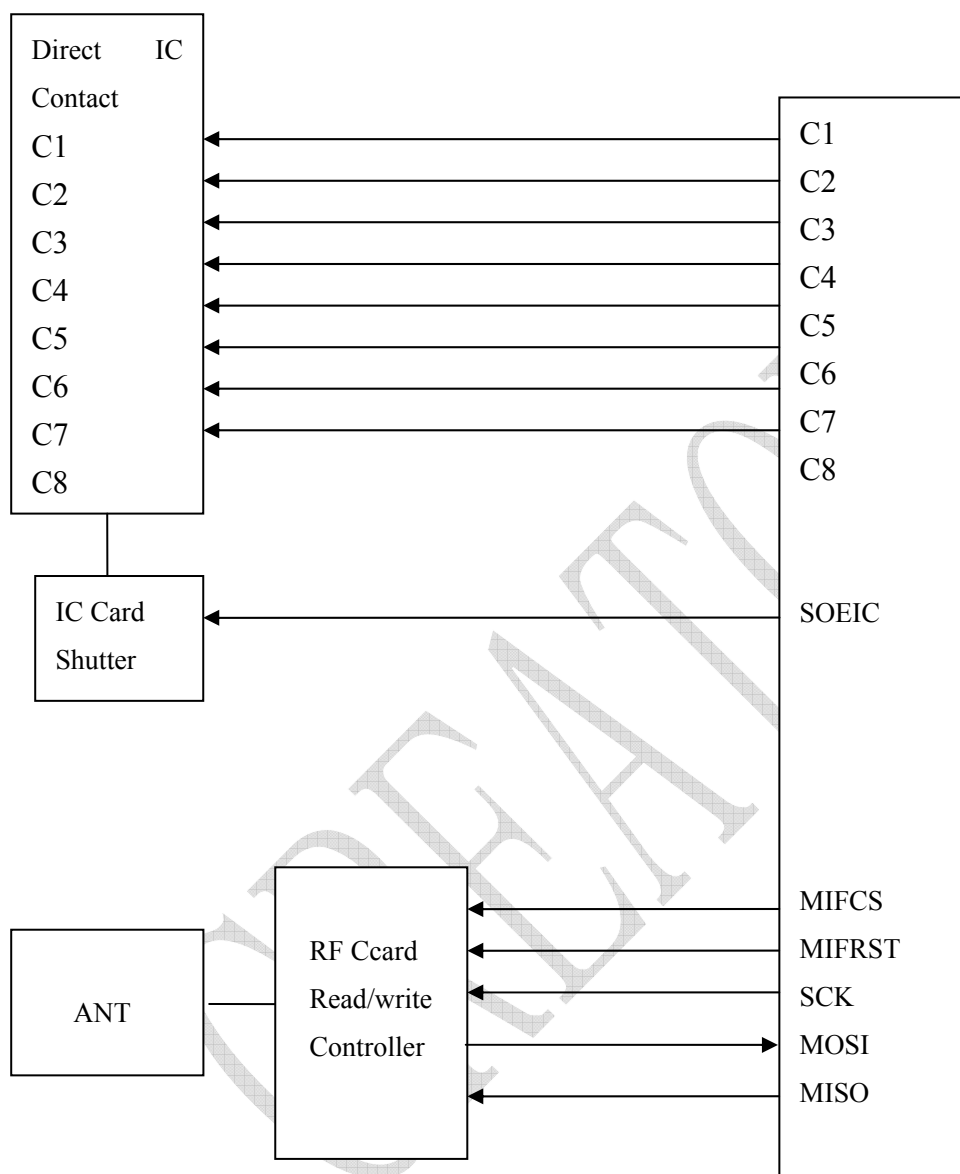
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4.7 30 Pins Block Diagram



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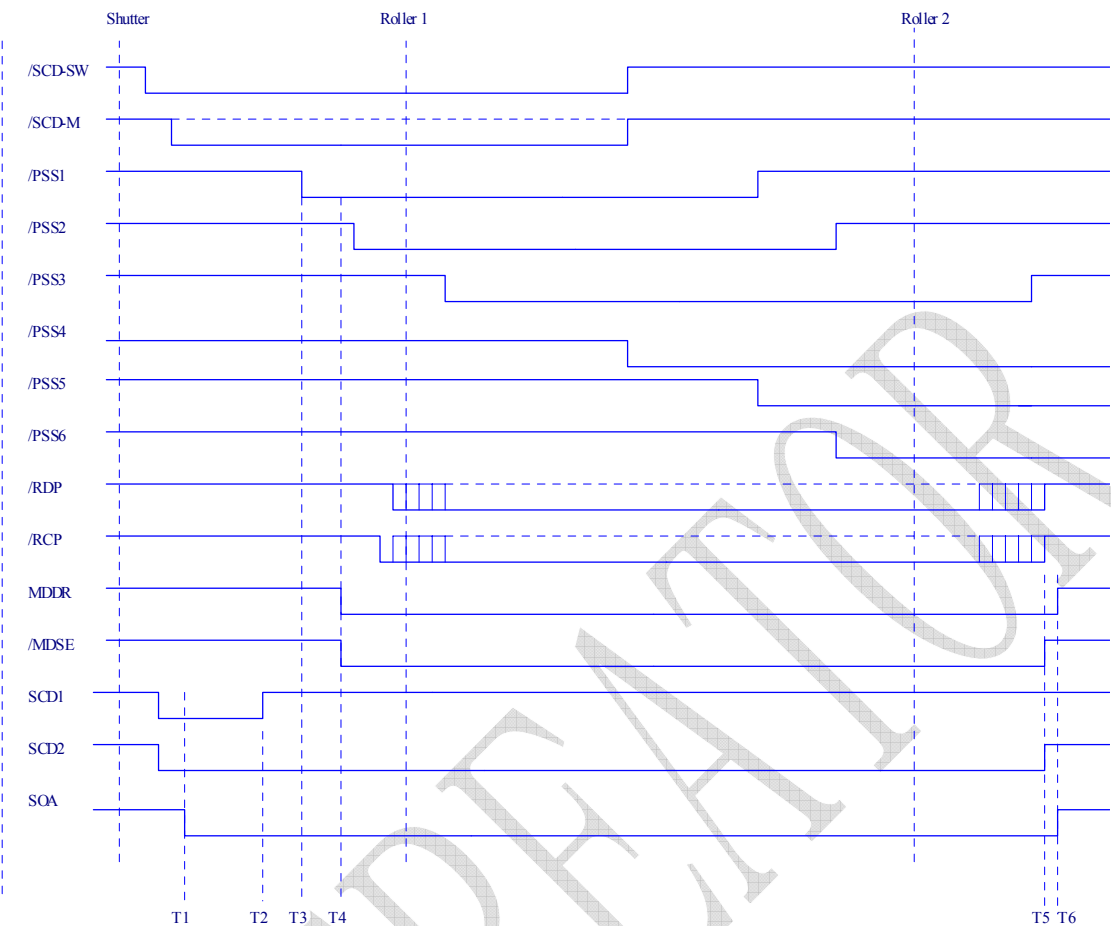
4.8 16 Pins Block Diagram



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5. Signal Timing Chart

5.1 Read Time (Shutter)



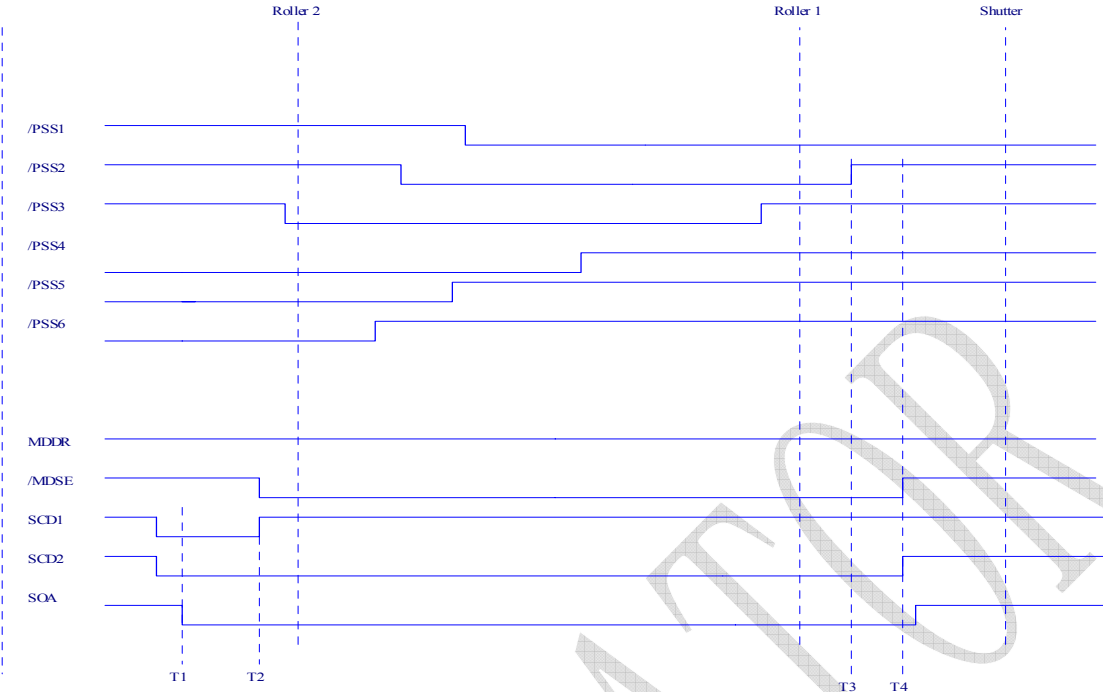
Controlled by software:

- T1—T2 time $\geq$ 80ms
- T3—T4 time $\geq$ 20 ms
- T5—T6 time $\geq$ 5ms

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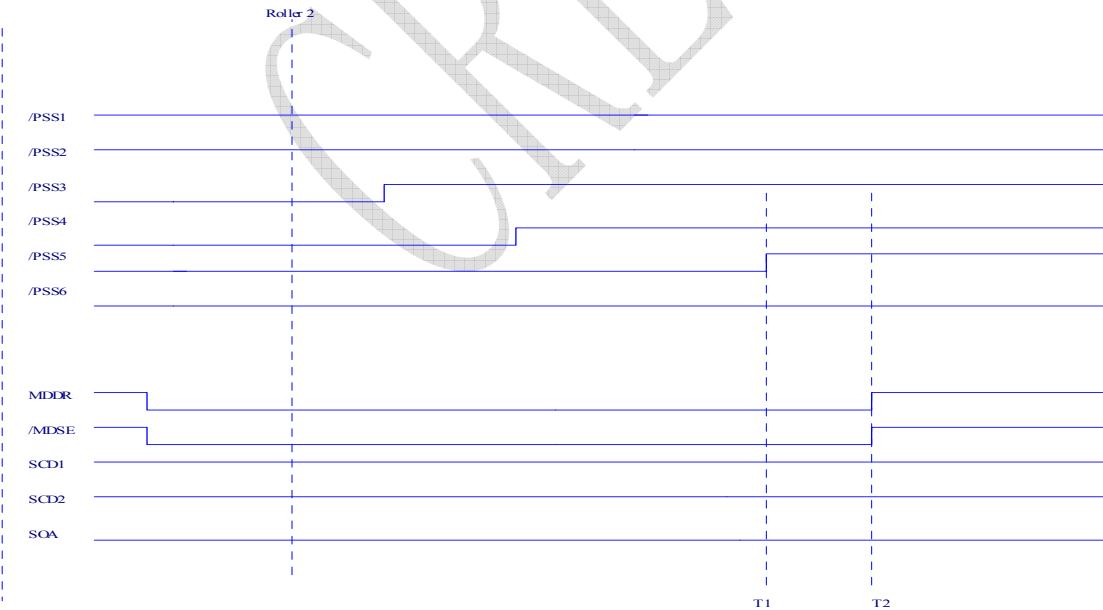
5.2 Front Ejection (Non-Retrieval)

5.2 Front Ejection (Non-Retrieval) 走卡到前端不持卡位置



Controlled by software: T1—T2 time $\geq 80\text{ms}$
T3—T4 time $\geq 30\text{ms}$

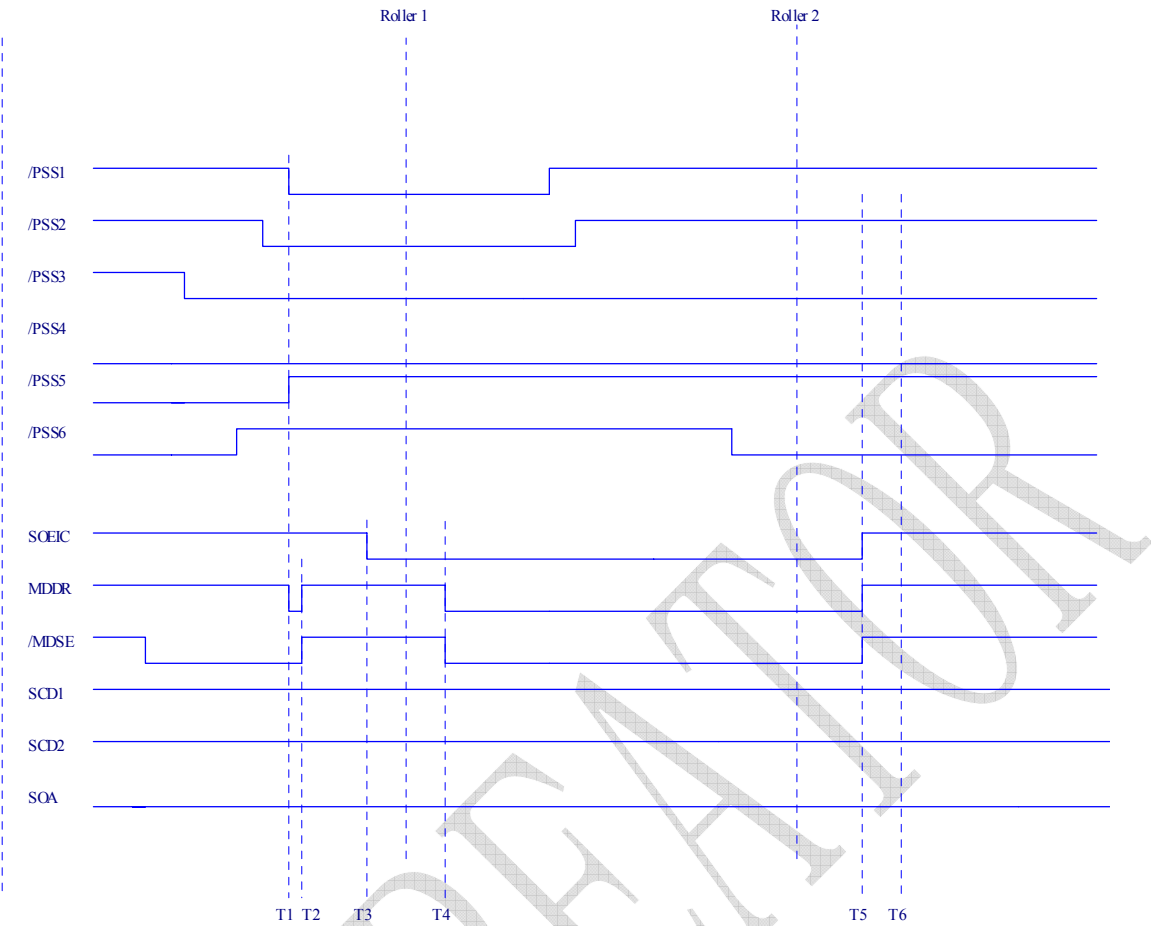
5.3 Rear Ejection (Non-retrieval)



Controlled by software: T1—T2 time $\geq 30\text{ms}$

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5.4 Move Card to IC Contact Press Position



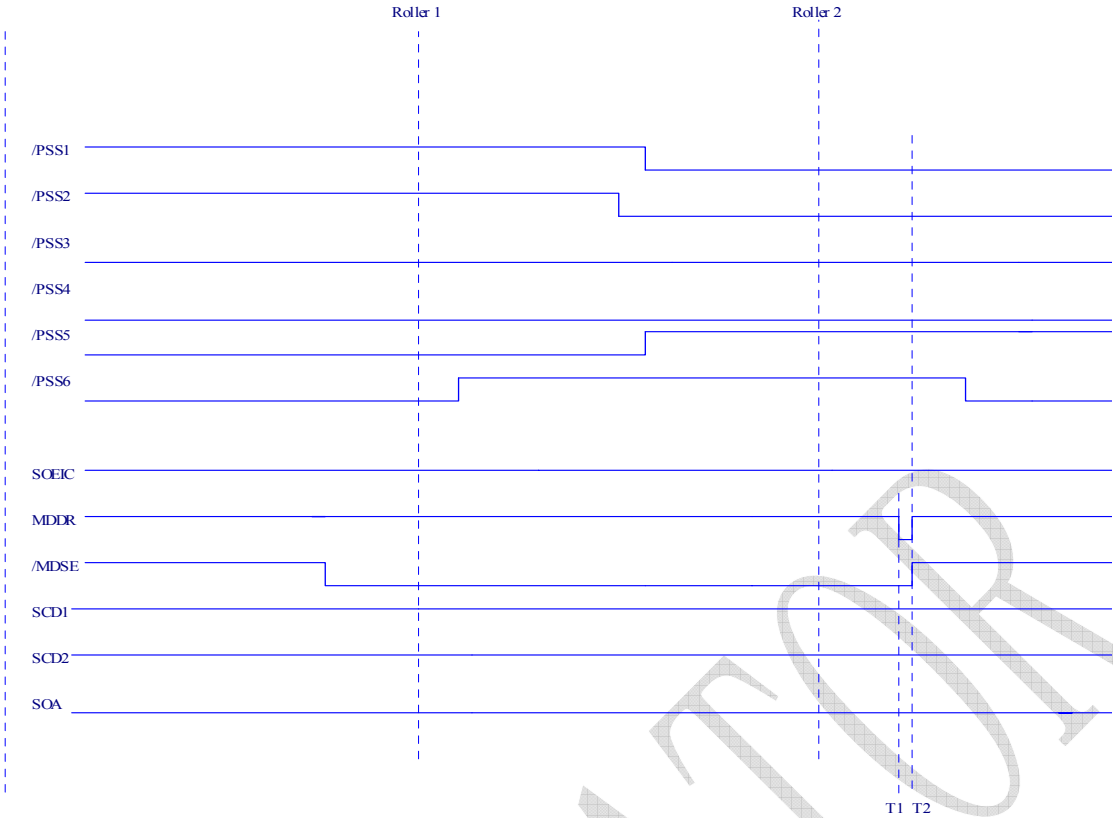
Controlled by software:

- T1—T2 time $\geq 5\text{ms}$
- T3—T4 time $\geq 100\text{ms}$
- T5—T6 time $\geq 30\text{ms}$

If you want to move the card to the rear side after you execute Move Card to IC Contact Press Position, you must first execute Move Card to IC Contact Release Position.

5.5 Move Card to IC Contact Release Position

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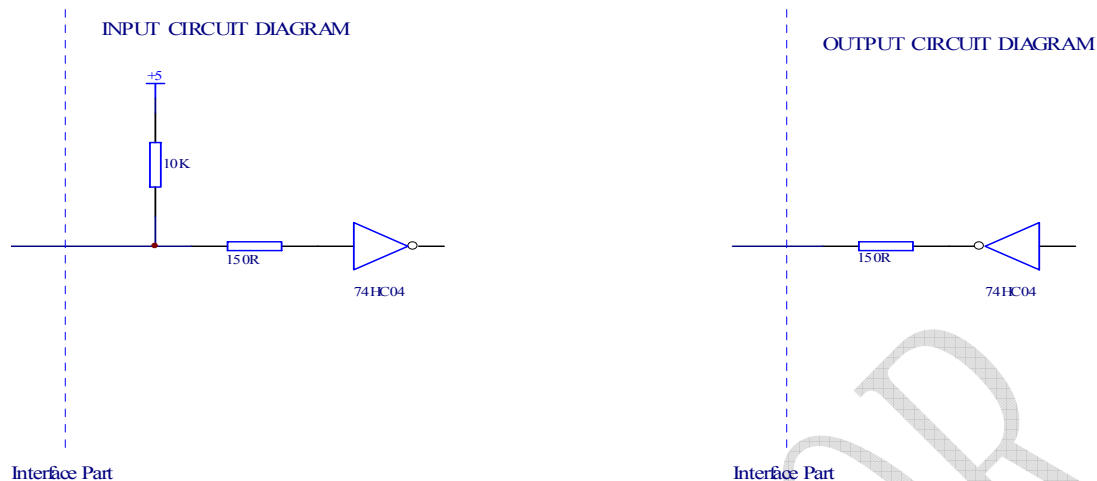


Controlled by software:

T1—T2 time ≥ 5ms

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6. Electrical Characteristics



6.1 Input Electrical Characteristics

Signal	Input voltage		Input current	
	VIL	VIH	IIL	IIH
MDDR	0.70V	3.50V	-1 mA	0.57mA
/MDSE	0.70V	3.50V	-1 mA	1 mA
/SOE1	0.70V	3.50V	-1 mA	1 mA
/SOE2	0.70V	3.50V	-1 mA	1 mA
/SOEIC	0.70V	3.50V	-1 mA	1 mA

6.2 Output Electrical Characteristics

Signal	Output voltage		Output current	
	VOL	VOH	IOL	IOH
/PSS#	0.4V	4.0V	8mA	-10 mA
/RDP#	0.4V	3.5V	8mA	-4mA
/RCP#	0.4V	3.5V	8mA	-4mA
/SCD-M	0.4V	3.5V	8mA	-4mA
/SCD-SW	0.4V	3.5V	8mA	-4mA
/SOA	0V	3.5V	0.5mA	-0.15mA