A large, light blue circular graphic that is partially cut off on the left side, serving as a background element for the title.

# **CDM8240**

# **System Principle**

**Version: V1.2**

**Release: 2009-6-23**

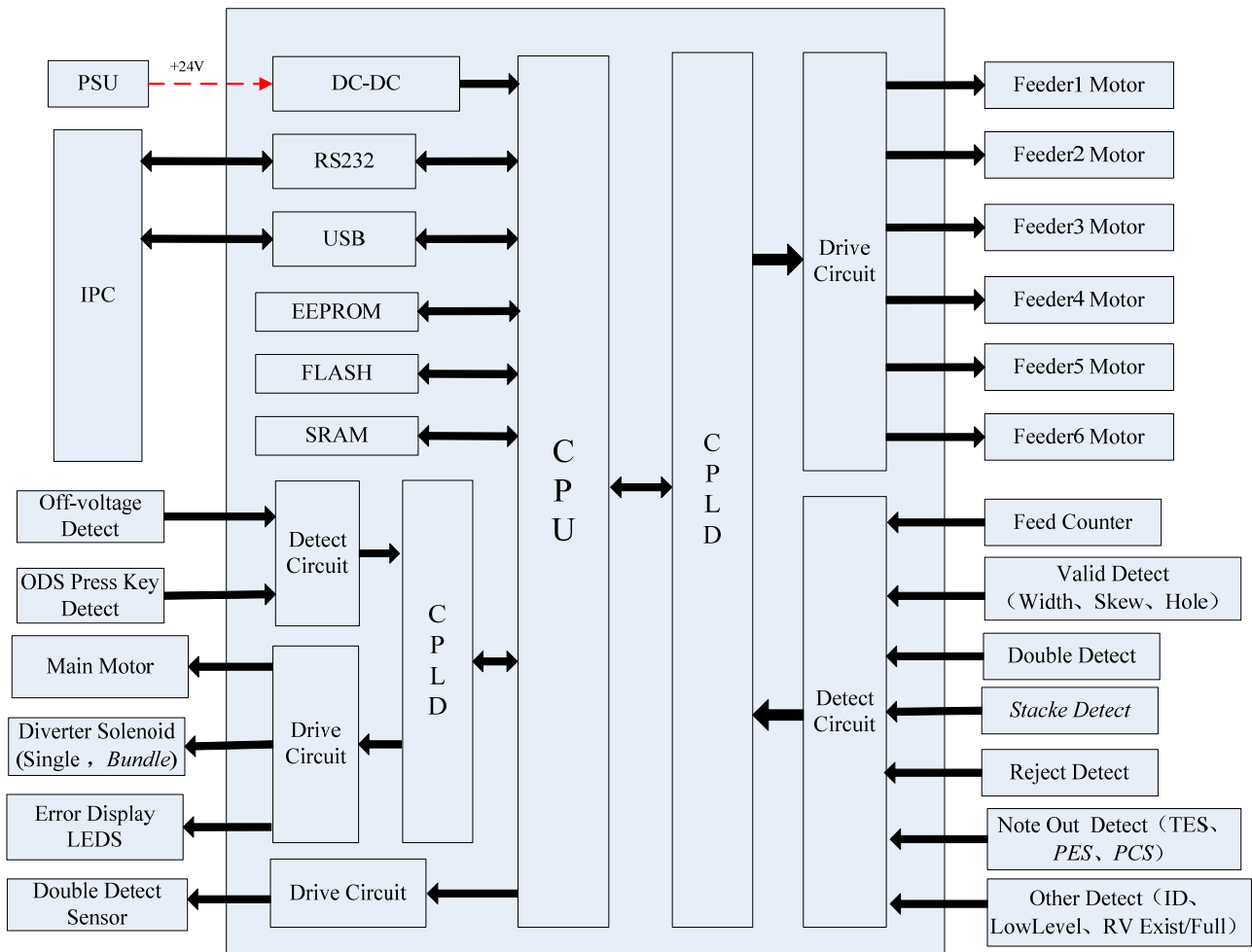
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# 1. Introduction

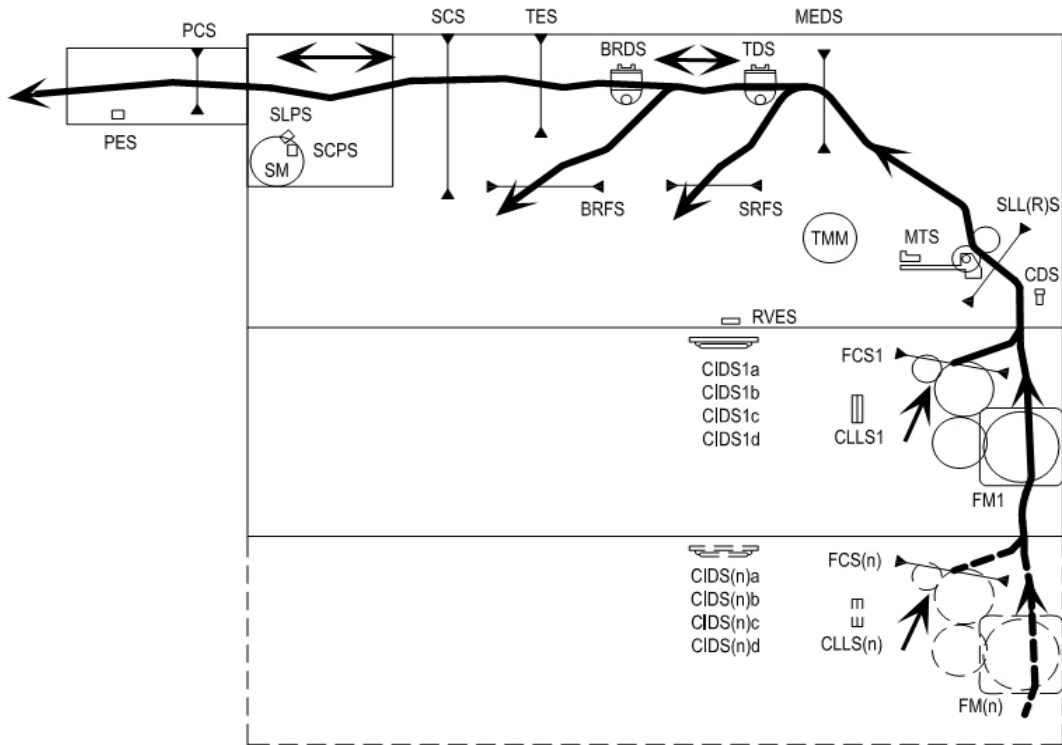
This is the manual for the CDM8240 system principle. It will give you an idea of how the CDM is general controlled, the details for the key technology and the interface for the connector. Moreover, the CDM configuration is also mentioned in this manual.

# 2. Working Principle Scheme

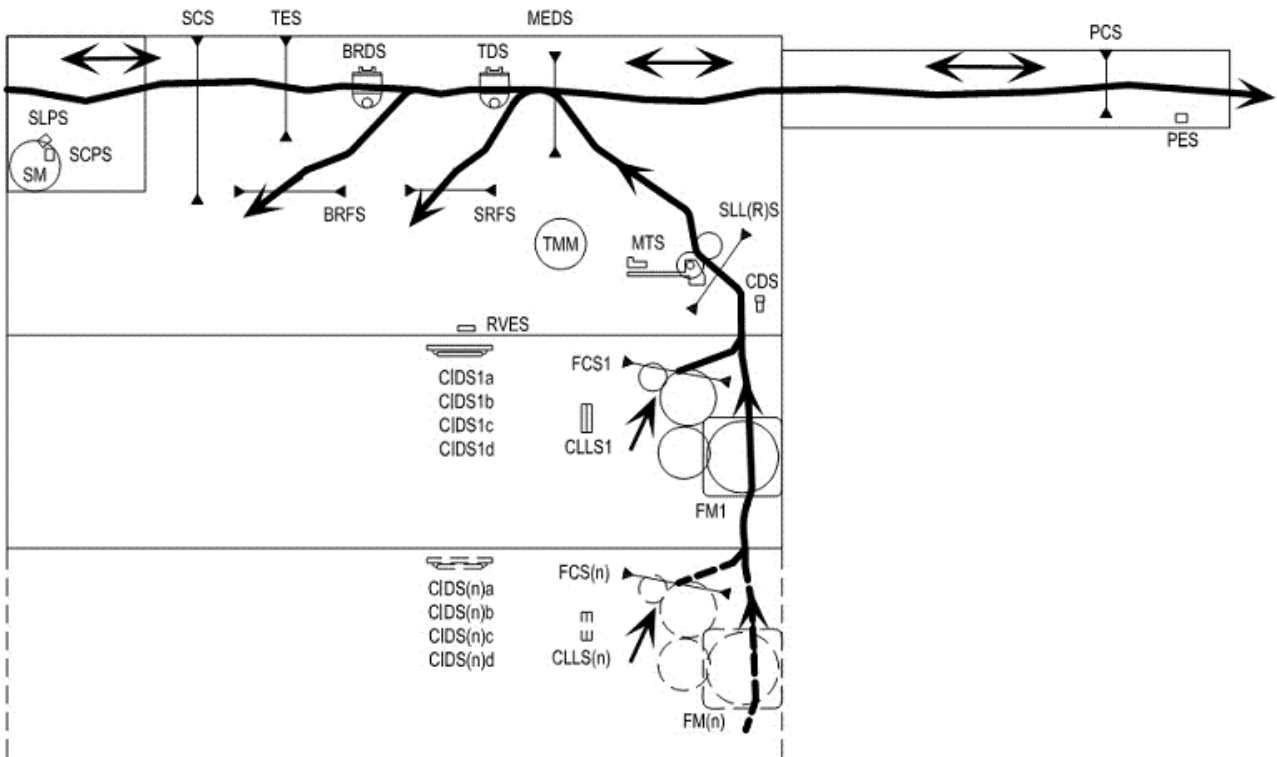


### 3. Note Running Path

#### 3.1 Front Access

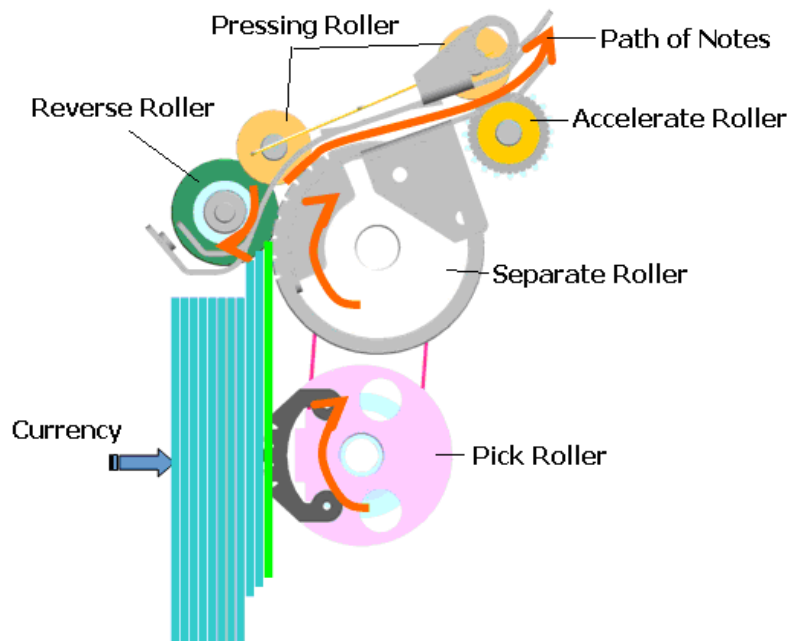


#### 3.2 Rear Access



## 4. Key Technology

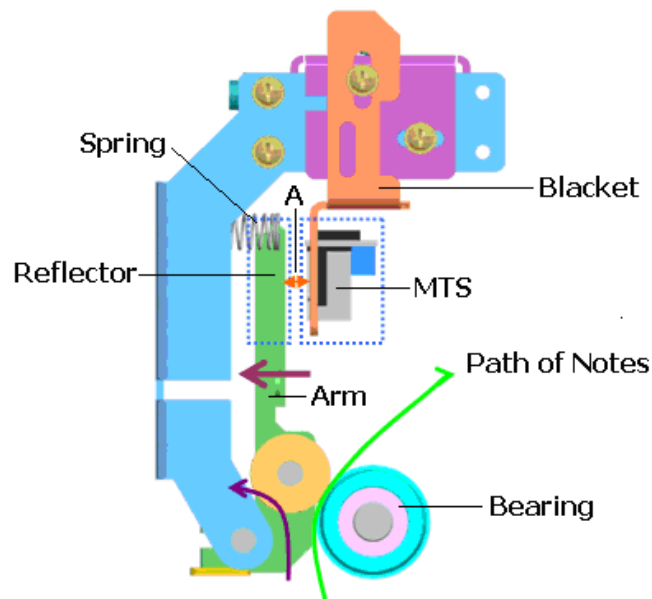
### 4.1 Note Feeder Working Principle



As shown, the Pick Roller picks up one currencies or more by the friction between the rubber of the Pick Roller and the currencies when it circles, then the Separate Roller separates the currency and sends it to the weeny interspace between the Separate Roller and Reverse Roller, which can separate the currencies and make sure only one currency pass by each time, that is because the friction of the Separate Roller is more stronger than the one of the currencies. Meanwhile, the Reverse Roller turns a thin position to avoid the abrasion by means of long-term friction of the currencies.

The currencies can be transferred to the Accelerate Roller with the help of the Pressing Roller after separating by the Separate Roller, and the motor of the Path of Currencies is providing the power to push the currency to be transfer.

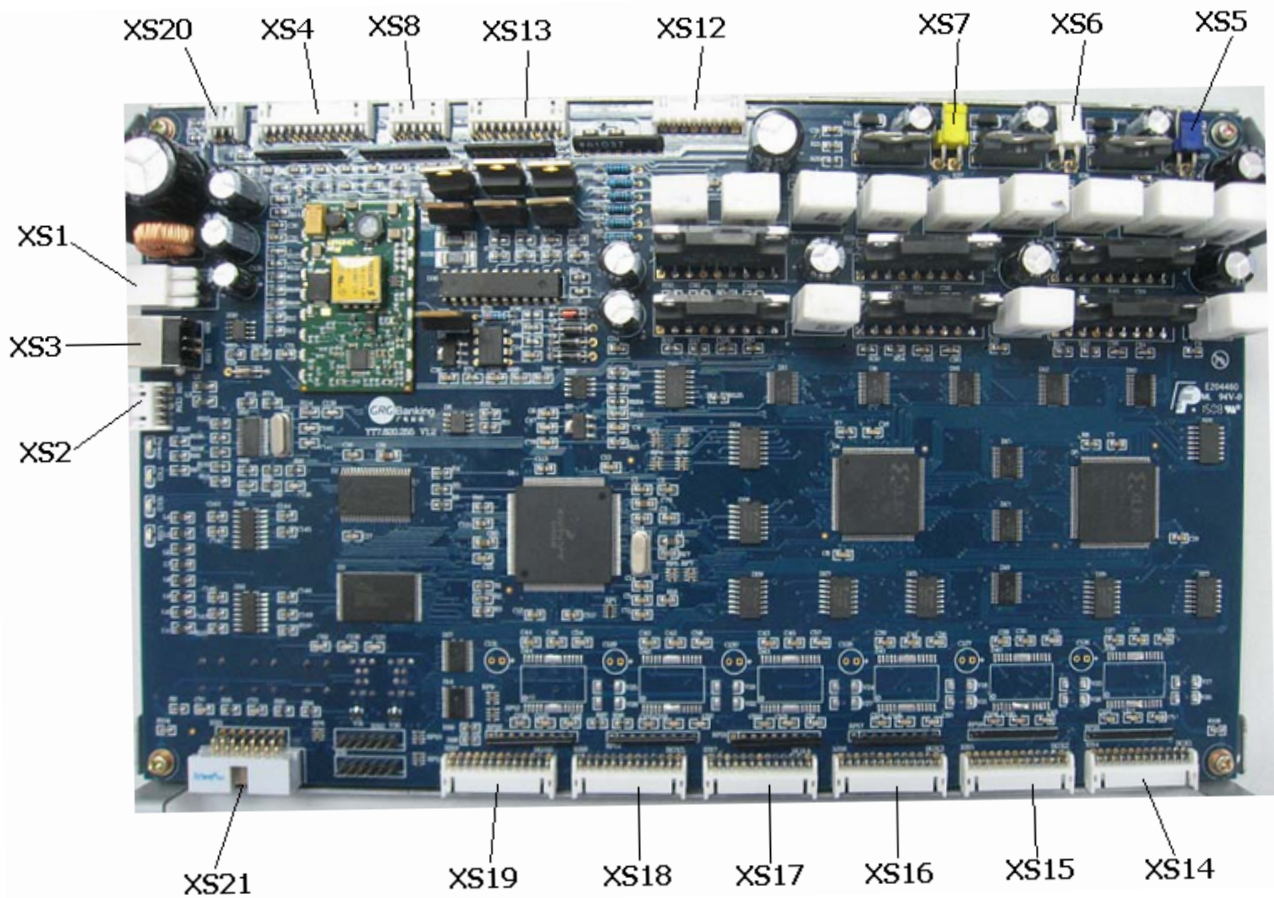
## 4.2 Media Thickness Sensor Working Principle



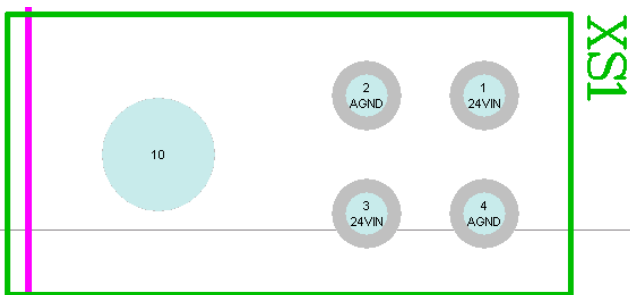
As shown, when the currencies go through the path of note, the Reflector on the bottom of the MTS is opened with the help of leverage, then the light intensity changes, and at the same time MTS create the voltage that changes accordingly with the intensity of the light in direct proportion sensitively by reactivity of its components. In the case of two currencies go through the path of note, the voltage would be created two times of the normal status, and the CPU would be recognized the voltage to find out any double detection.

## 5. Electrical Interface

### 5.1 Wiring Diagram

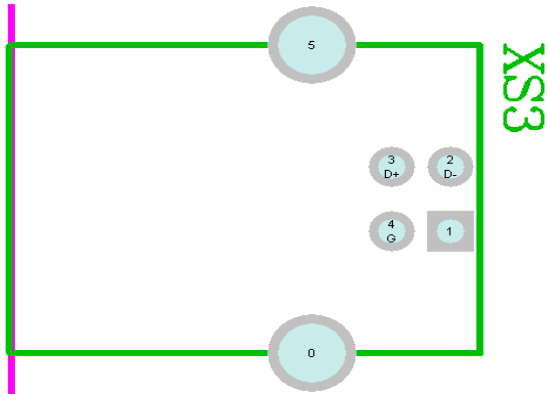


### 5.2 Power Supply Interface (XS1)



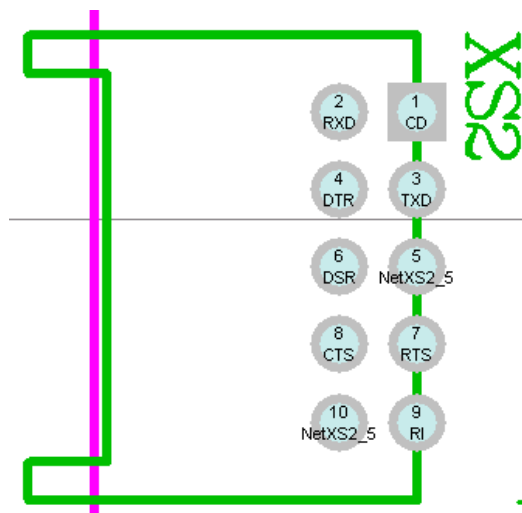
Pin	Signal
1	+24V
2	AGND
3	+24V
4	AGND

### 5.3 USB Communication Interface (XS3)



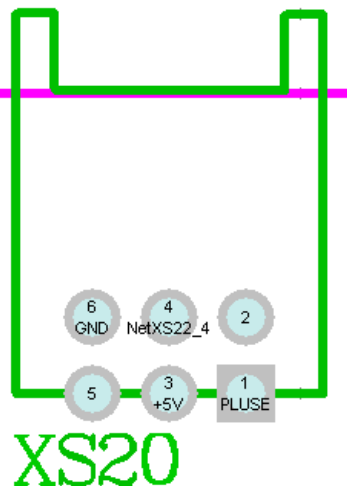
Pin	Signal
1	VBus
2	D-
3	D+
4	GND

### 5.4 RS232 Communication Interface (XS2)



Pin	Signal
1	CD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	GND

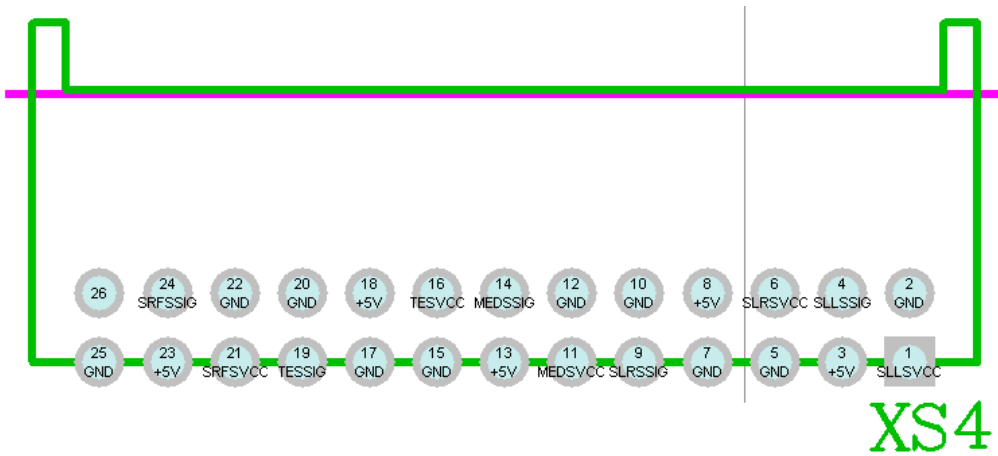
### 5.5 Media Thickness Sensor Interface (XS20)



Pin	Signal
1	Pluse
2	N/C
3	+5V
4	Vout
5	N/C
6	GND

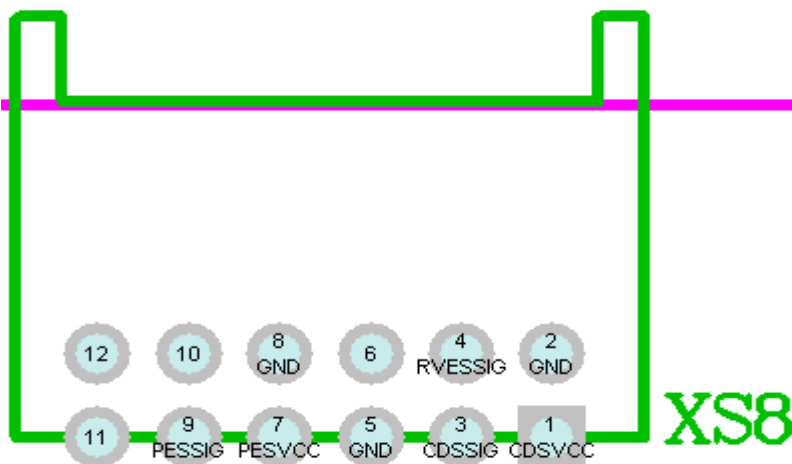


### 5.6 Note Transport Sensor Interface (XS4)



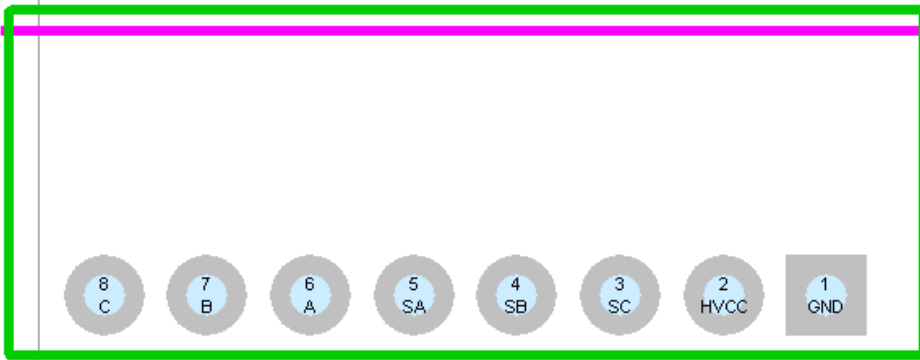
Pin	Signal	Pin	Signal	Pin	Signal
1	SLLSVcc	10	GND	19	TESSig
2	GND	11	MEDSVcc	20	GND
3	+5V	12	GND	21	SRFSVcc
4	SLLSSig	13	+5V	22	GND
5	GND	14	MEDSSig	23	+5V
6	SLRSVcc	15	GND	24	SRFSSig
7	GND	16	TESVcc	25	GND
8	+5V	17	GND	26	N/C
9	SLRSSig	18	+5V		

### 5.7 Note Transport Sensor Interface (XS8)



Pin	Signal	Pin	Signal	Pin	Signal
1	CDSVcc	5	GND	9	PESSig
2	GND	6	N/C	10	N/C
3	CDSSig	7	PESVCC	11	N/C
4	RVESSig	8	GND	12	N/C

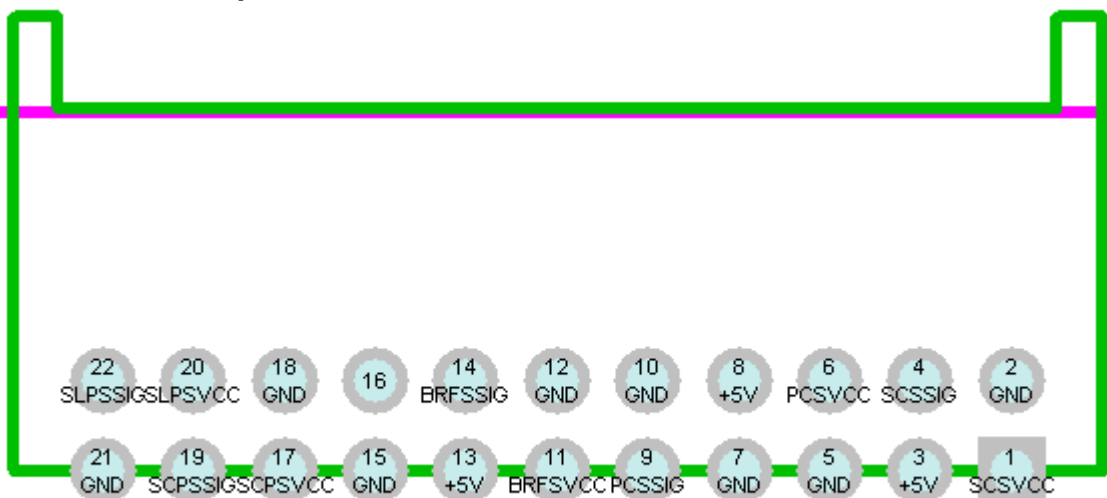
### 5.8 Main Motor Interface (XS12)



XS12

Pin	Signal
1	GND
2	HVcc
3	SC
4	SB
5	SA
6	A
7	B
8	C

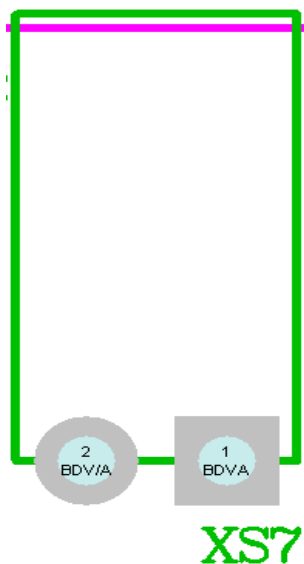
### 5.9 Note Transport Sensor Interface (XS13)



XS13

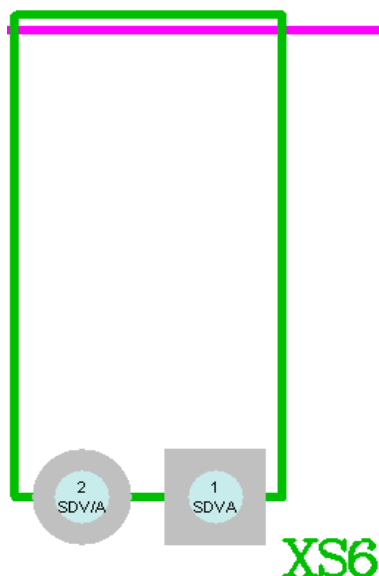
Pin	Signal	Pin	Signal	Pin	Signal
1	SCSVCC	10	GND	19	SCPSSIG
2	GND	11	BRFSVCC	20	SLPSVCC
3	+5V	12	GND	21	GND
4	SCSSIG	13	+5V	22	SLPSSIG
5	GND	14	BRFSSIG		
6	PCSVCC	15	GND		
7	GND	16	N/C		
8	+5V	17	SCPSVCC		
9	PCSSIG	18	GND		

### 5.10 Bundle Diverter Interface (XS7)



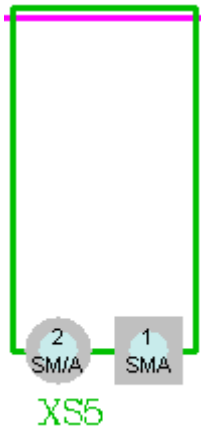
Pin	Signal
1	BDVA
2	BDV/A

### 5.11 Single Diverter Interface (XS6)



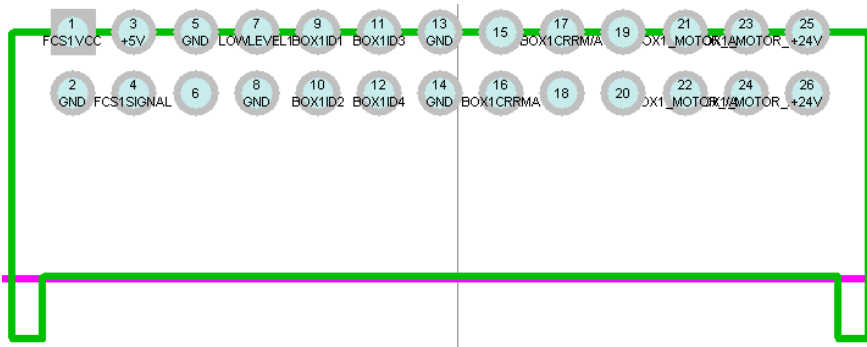
Pin	Signal
1	SDVA
2	SDV/A

### 5.12 Stacker Motor Interface (XS5)



Pin	Signal
1	SMA
2	SM/A

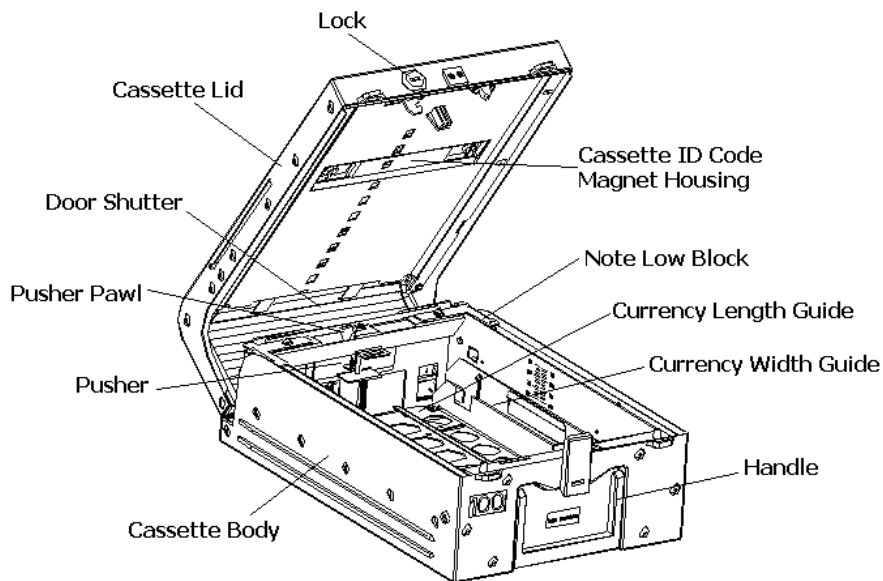
### 5.13 Cassette Frame Interface (XS14~XS19)



Pin	Signal	Pin	Signal	Pin	Signal
1	FCSVcc	10	BOXID2	19	N/C
2	GND	11	BOXID3	20	N/C
3	+5V	12	BOXID4	21	BOXMotorA
4	FCSSig	13	GND	22	BOXMotor/A
5	GND	14	GND	23	BOXMotorB
6	N/C	15	N/C	24	BOXMotor/B
7	LowLevel	16	Reserved	25	+24V
8	GND	17	Reserved	26	+24V
9	BOXID1	18	N/C		

## 6. Note Cassette Setting and Configuration

### 6.1 Note Cassette Description



### 6.2 Cassette Identification Code

There are 4 magnets locate above embedded in lip to achieve the cassette identification codes. Cassette ID ranges from 1~9, A, B, C, D, E, totaling 14 types. The cassette ID will be defined by different sort order of magnets on a,b,c,d. The rule of coding is shown below (this table is attached on the cassette lid).

ID	d	c	b	a
1	●	●	●	○
2	●	●	○	●
3	●	●	○	○
4	●	○	●	●
5	●	○	●	○
6	●	○	○	●
7	●	○	○	○
8	○	●	●	●
9	○	●	●	○
A	○	●	○	●
B	○	●	○	○
C	○	○	●	●
D	○	○	●	○
E	○	○	○	●

Note:

1. ● Indicates there is a magnet on the position, value is 0.
2. ○ Indicates there is no magnet on the position, value is 1.
3. Cassette ID is a hexadecimal value in physical.

Currency and denomination of currencies are mainly expressed by cassette ID. So for the same dispenser, each cassette ID is unique. Even for the cassette with the same currency and denomination installed in the dispenser, their cassette ID must be different.

When changing the currency and denomination of cassette, please perform the following procedures:

**Step1:** Setting Cassette ID

**Step2:** Adjusting the Width and Height Guide

**Step3:** Updating the Configuration File according to Actual Conditions

### 6.3 Description of Configuration File

The parameters such as cassette ID, currency, denomination and note size are registered in the configuration file. When the cassette is used for the first time, or the denomination of the currencies which will be loaded in the cassette needs to be changed, it is required to confirm the parameters accordingly; also it is important to set the single note thickness over again. Moreover, part of the parameters will be used in application database.

The configuration file for CDM8240 dispenser is GRGCDMDevCfg.ini, an editable text file, stored in the same directory with the dispenser DLL program.

The general format for the configuration file is:

**[Section]**

**Keyword = Value**

**[Section] description:**

Section is the cassette ID, Hex 1~E valid.

**Keyword description:**

CuID // electric ID of cassette, five-byte character string, value unique  
Denomination // single note denomination, integer  
CashType // note currency (CNY, USD, VND etc.)  
BillWidth // actual note width, min. 55mm, max. 85mm  
BillLength // actual note length, min. 110mm, max. 172mm  
BillThickness // note thickness, ranges from 60~180um

**Value description:**

All values are ASCII code.

The thickness value is set according to the thickness setting table.

**Example:**

The following is a valid configuration file for the dispenser:  
 (Illegal value or keyword name will result in the parameter error with INI.file)

[1 ]

**CuID** =00100  
**Denomination** =100  
**CashType** =CNY  
**BillWidth** =77  
**BillLength** =156  
**BillThickness** =120

Above items together are called a group, which means the configuration information on cassette, the cassette ID is 1.

For the dispenser configured with several cassettes, more than one group will be contained. Each group represents a type of configuration on cassette, up to 14 groups.

## 6.4 Thickness Setting Table

Currency	Thickness	Country
CNY	120 (0.12mm)	China
USD	130 (0.13mm)	USA
HKD	120 (0.12mm)	China HongKong
VND	120 (0.12mm)	VietNam
GBP	120 (0.12mm)	U.K.
AUD	140 (0.14mm)	Australia
IDR	120 (0.12mm)	Indonesia
PHP	120 (0.12mm)	Philippines
THB	120 (0.12mm)	Thailand
IRR	120 (0.12mm)	Iran
BDT	120 (0.12mm)	Bengal
MNT	120 (0.12mm)	Mongolia
TWD	120 (0.12mm)	China Taiwan

The above table is only used for reference purpose, for other currencies which are not listed in here, please define the parameter according to actual value.