



Ingeniería Electrónica
SMART IDENT

Specifications

User Manual

CMX-2200 Rev. D

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CMX-22XX

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1. Overview

All the processes and operations of CMX-22XX are monitored by its intelligent Microprocessor, which makes itself self-recover function from faulty running.

CMX-22XX has a function to takes an Error card back to the bin. This function is called “Capture“.

CMX-22XX series are applied and integrated to following products and systems;

- Prepaid card vending machine
- ID card issuing machine
- Parking card vending machine
- Payphone card vending machine
- Automatic card issuing machine
- Ticketing vending machine
- And more

2. Features

2.1. Card thickness dispensable can be adjusted easily.

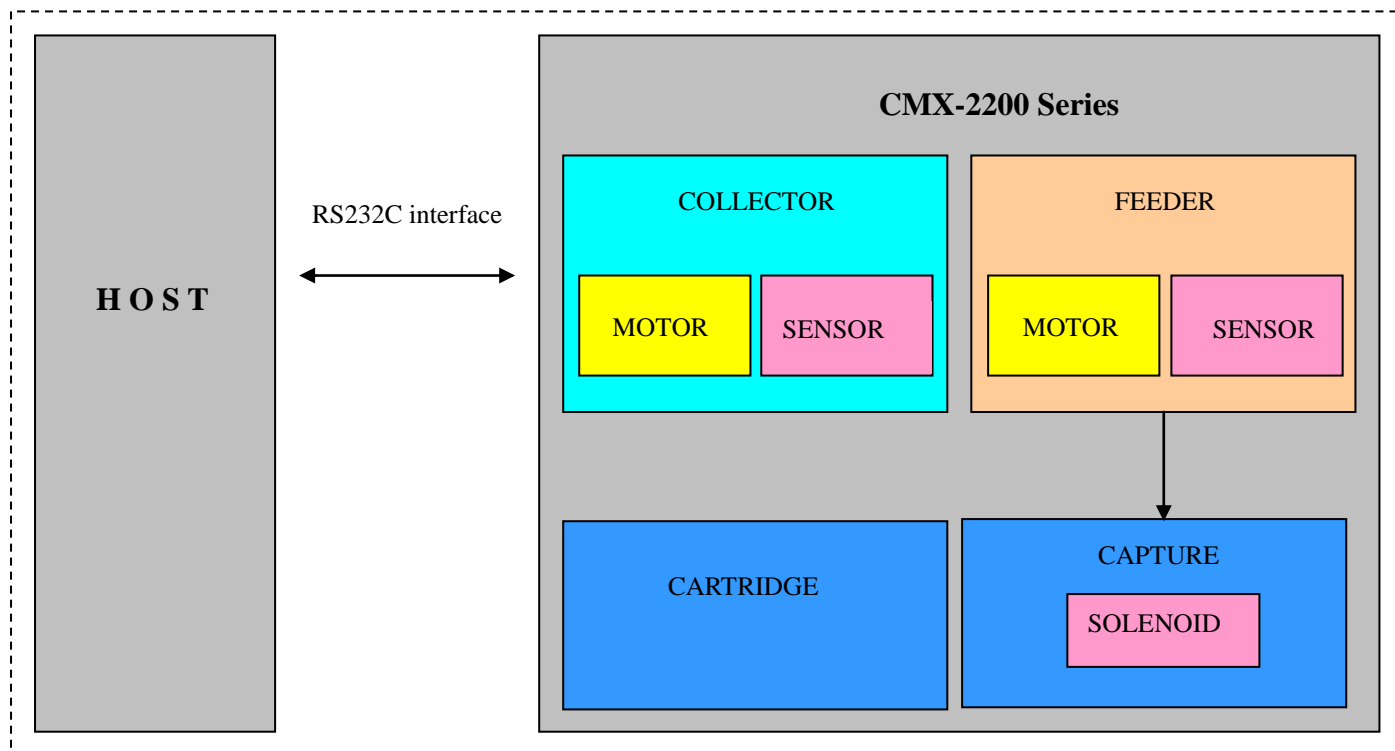
Card thickness adjustable from 0.22mm up to 1.0mm.

2.2. RS232C Interface

- A. Baud Rate : changeable(9,600 BPS ↔ 19,200BPS)
- B. Can change position of card (one way direction allowed)
- C. With Self-diagnosis function.
- D. Easy to control

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3. System Block Diagram



4. Environmental Requirements

4.1 Operating Temperature and Humidity : 0~40°C, 0~95% RH

4.2 Conservation Temperature and Humidity : -20~70°C, 0~95% RH

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5. Specifications.

5.1. Model.

MODEL	CMX-221X	CMX-222X	CMX-223X	CMX-224X
Dimensions (W x L x H) mm		150*314.9*286	150*314.9*366	150*314.9*526
Card Collect Time (Sec)	1.7	1.7	1.7	1.7
Max. Card Loading Capacity	100pcs	200pcs	300pcs	500pcs
	In case of 0.76 mm card			
Total Weight (Kg)				
Applicable Cards	Phone Card, Credit, Debit, Pre_padi, I.C Card, RF Card, Parking Card			
Card Material	P.V.C, A.B.S, P.E.T, Etc.			
Max. Card Width, Max. Card Length	ISO 7810			
Max. Card Thickness	0.22 ~ 1.0 mm			

5.2. Power Consumption

5.2.1. DC Motor Driver : Output Current 1.5A Per Channel..

5.2.2. Solenoid Driver : Output Current 0.8A Per Channel.

5.2.3. Input voltage : DC 24V Only (DC $\pm 5\%$, Min 2.5A) .

5.2.4. Stand By : 44 mA(+5%).

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INTERFACE	FUNCTION	TYPE	CAPACITY	THICKNESS	OPTION I	OPTION II
T: RS-232C	2: COLLECTOR	2: Single Dispenser & Capture Module (Plastic Module)	1: 100 PCS 2: 200 PCS 3: 300 PCS 4: 500 PCS	1: 0.2T 2: 0.38T 3: 0.5T 4: 0.76T 5: 0.84T 6: 1.0T	C: Cartridge type	D : Drop Type

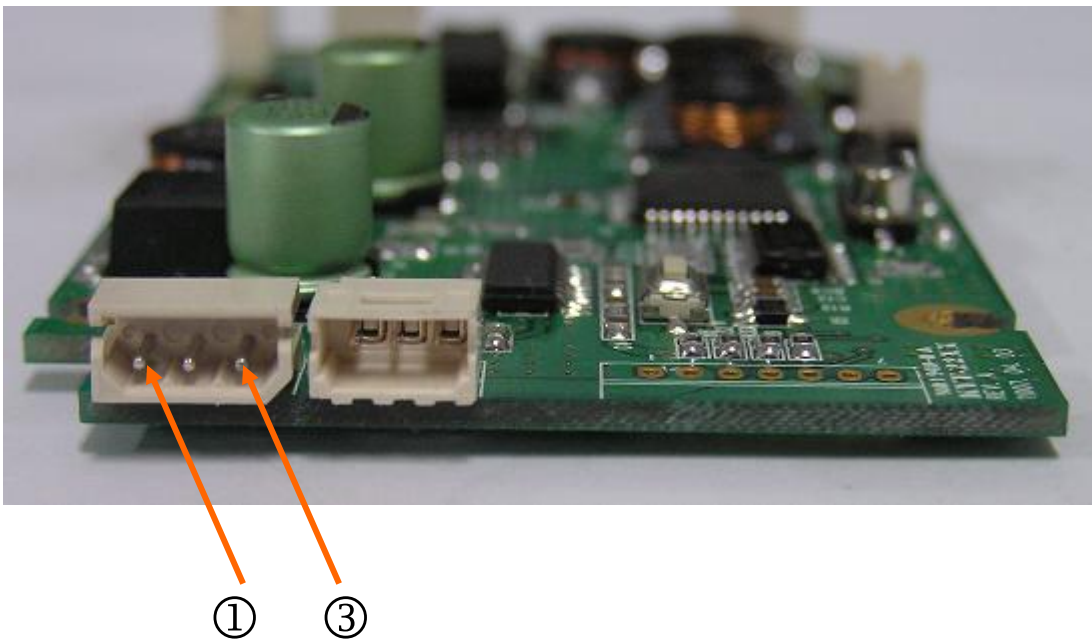
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6. DC Power Connector

6.1. Part Number : 5268-03 (MOLEX)

6.2. Power Connector Pin Table (PCB side).

- Connector number : J6



Pin NO	Signal Name	Direction
1	DC +24V	Input
2	Not use	
3	GND	

6.3. Power cable configuration

PIN 3 : BLACK - GND

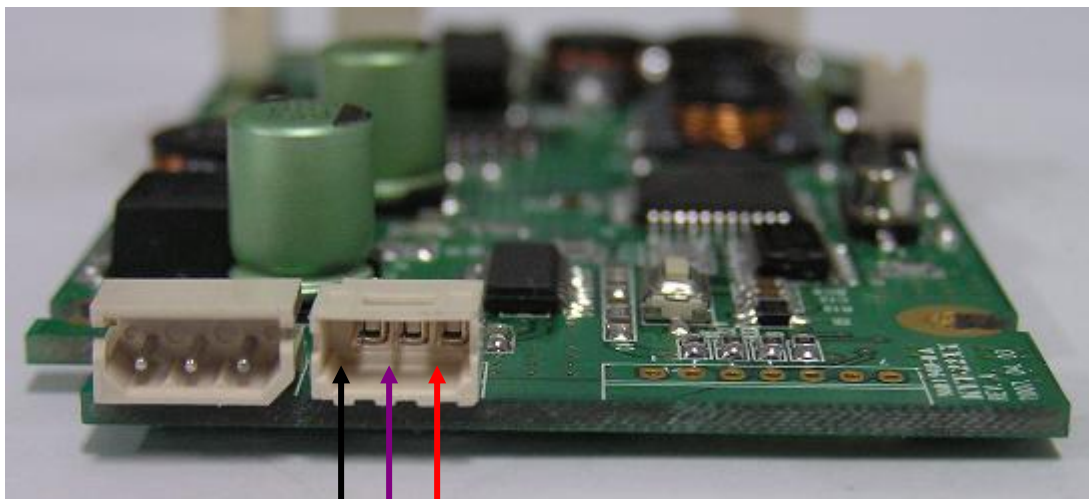
PIN 1 : RED - +24VDC

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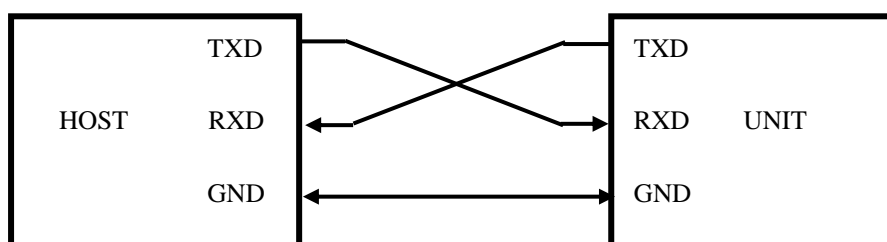
7. Interface

7.1. Part Number : 53015-0310(Molex) , Connector number : J7

. Connect Pin Table(PCB side)



1 : RXD
2 : TXD
3 : GND



Pin No	Index	Remark
1	RXD	Receive
2	TXD	Transmit
3	GND	S.G

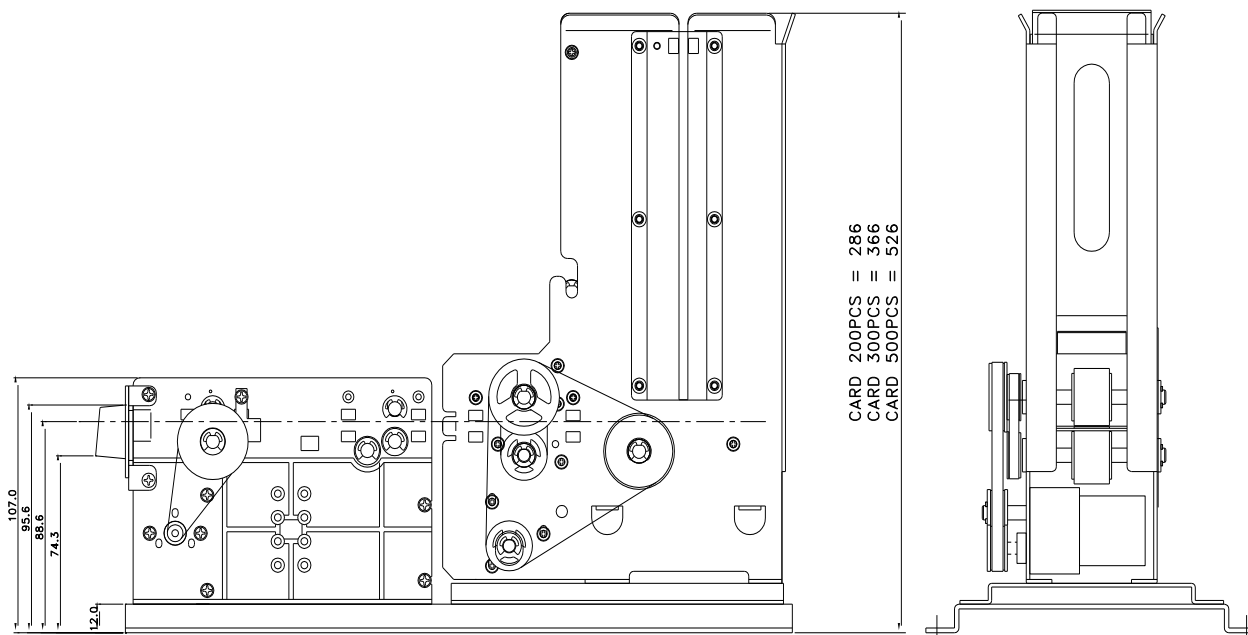
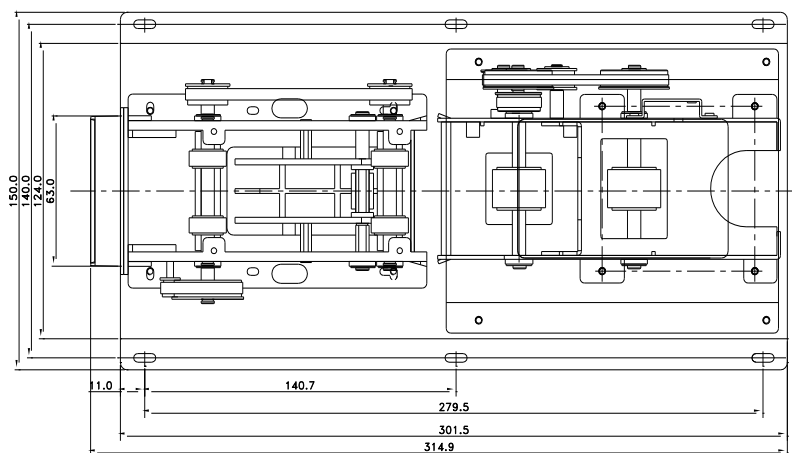
. Communication Method

- Asynchronous, Half duplex.
- Baud Rate : 9600, 19200BPS (Default : 9600BPS)
- Data Length : 8Bits
- Parity : None
- Stop Bit : 1Bit

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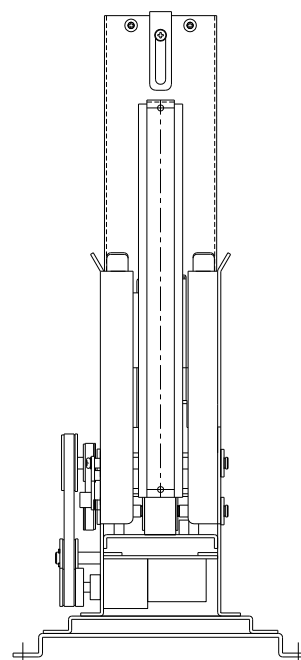
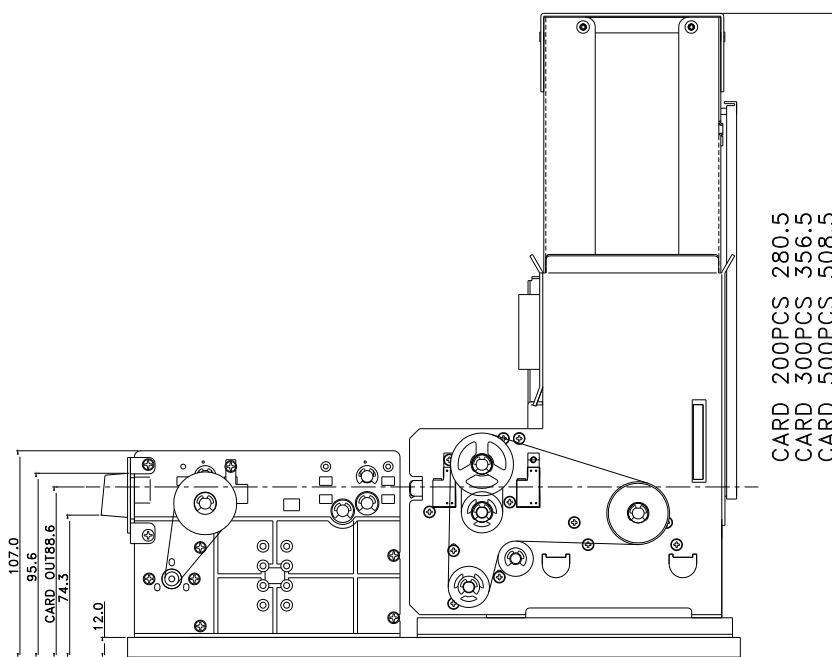
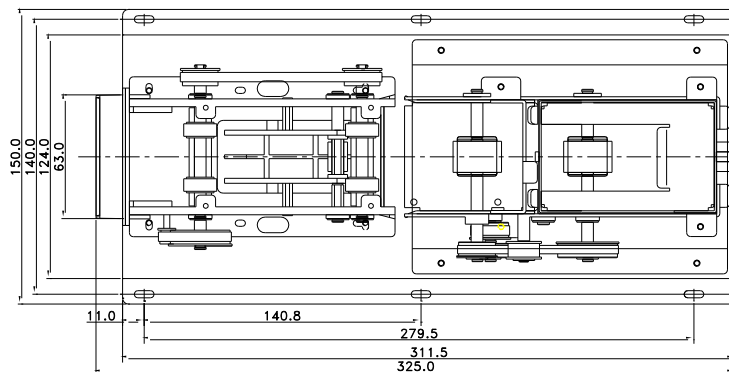
8. Technical Drawing

<CMT-2200>



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<CMT-2200C>

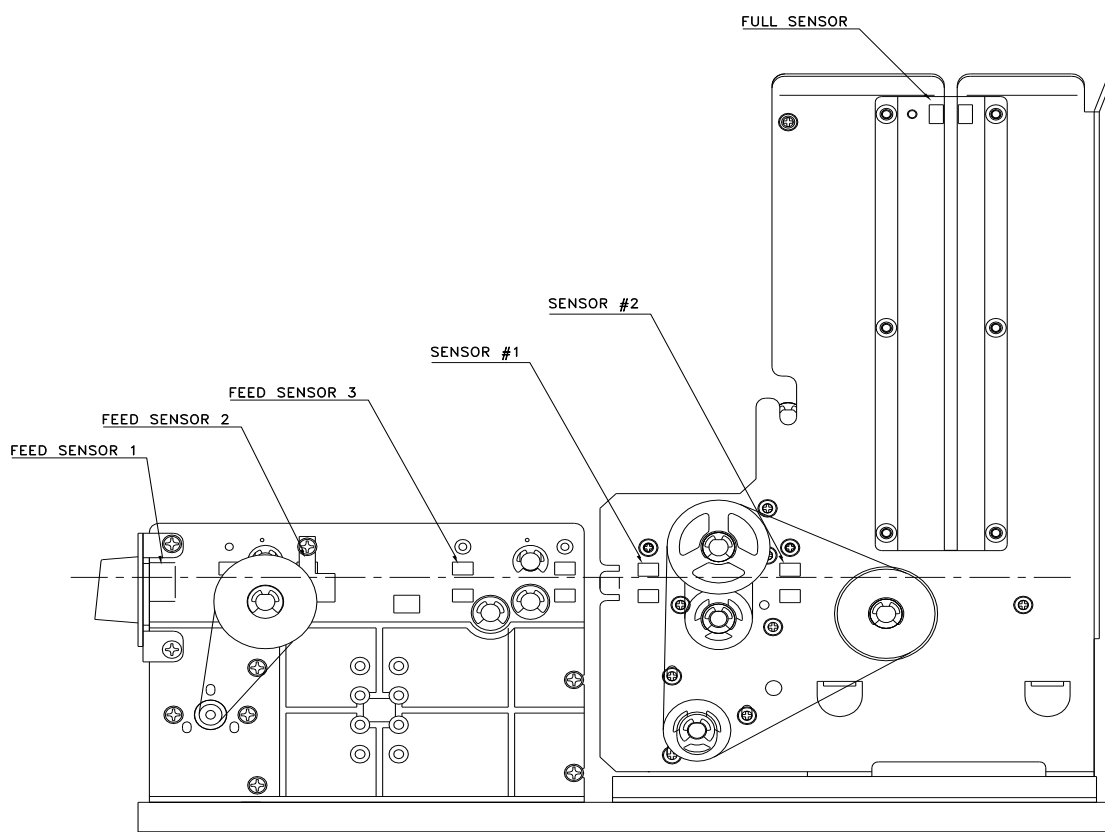


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<Sensor & Motor & Solenoid Name>

-CMT-2200

Connector No	Remark
J2	Collector Motor
J3	Sensor#1
J4	Full sensor
J5	Sensor#2
J8	Feed Sensor 1
J10	Solenoid
J11	Feed Motor
J12	Feed Sensor 2
J13	Feed Sensor 3

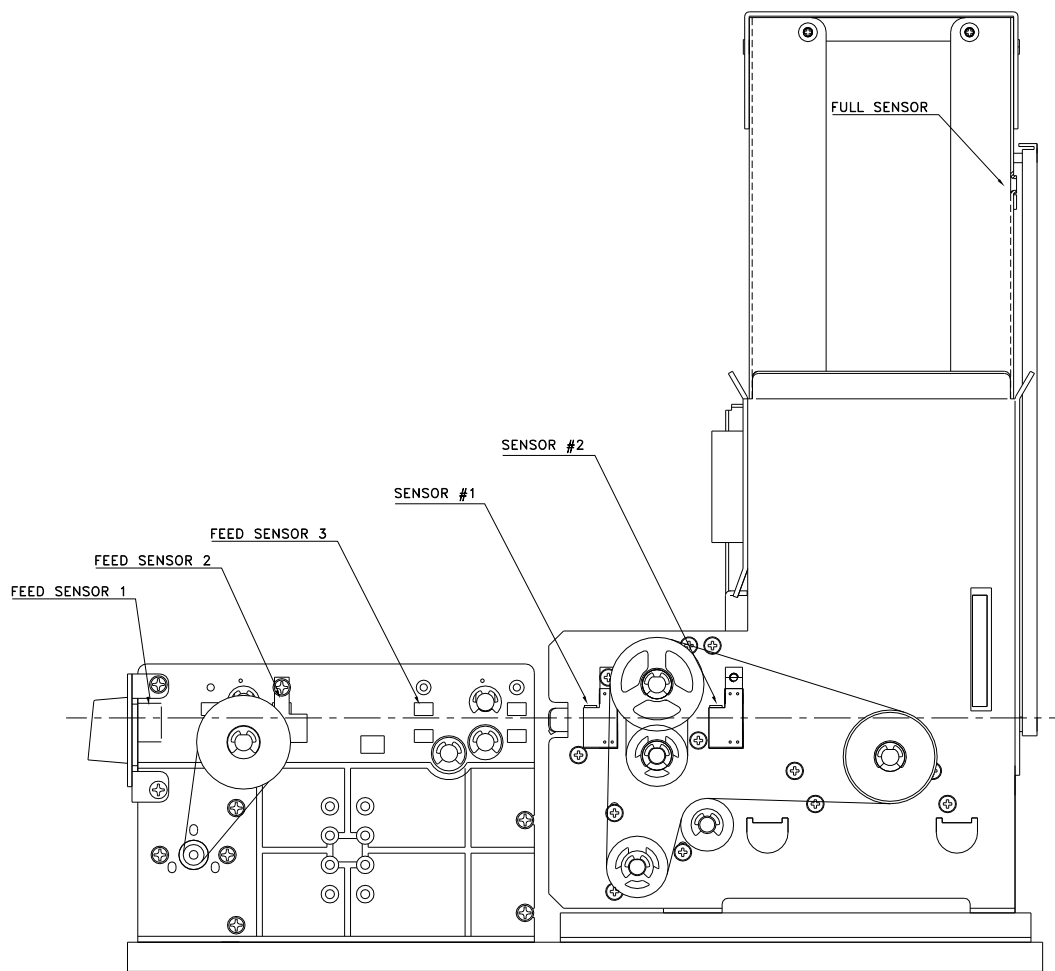


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<Sensor & Motor & Solenoid Name>

-CMT-2200C

Connector No	Remark
J2	Collector Motor
J3	Sensor#1
J4	Just Cartridge Power On
J5	Sensor#2
J8	Feed Sensor 1
J9	Cartridge Contact
J10	Solenoid
J11	Feed Motor
J12	Feed Sensor 2
J13	Feed Sensor 3
J14	Full sensor



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9. RS232C Interface

9.1. Control Characters

NANE	Hex Value	Description
STX	02	Start of Text
ETX	03	End of Text
EOT	04	End of Transmission
ENQ	05	Enquiry
ACK	06	Positive Acknowledge
NAK	15	Negative Acknowledge
CAN	18	Cancel

9.2. Frame Format

Command structure

STX	Command	ETX	BCC
-----	---------	-----	-----

Response structure

STX	Status	Status	ETX	BCC
-----	--------	--------	-----	-----



$$BCC = STX \wedge (\text{Command and Status}) \wedge ETX$$

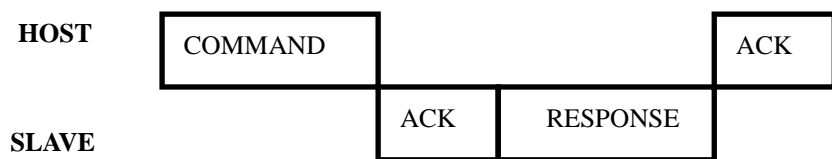
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9.3. Communication Protocol Sequence

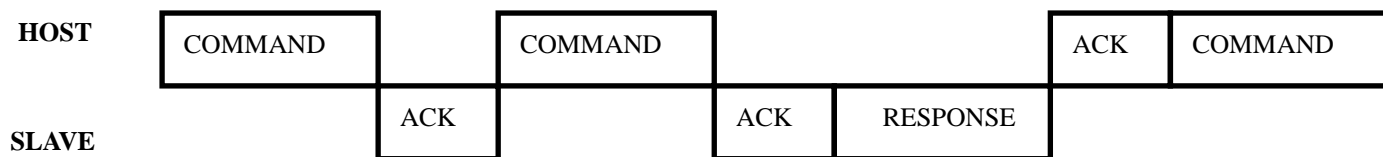
CASE 1)



CASE 2) Request Command (0x31)



CASE 2-1)

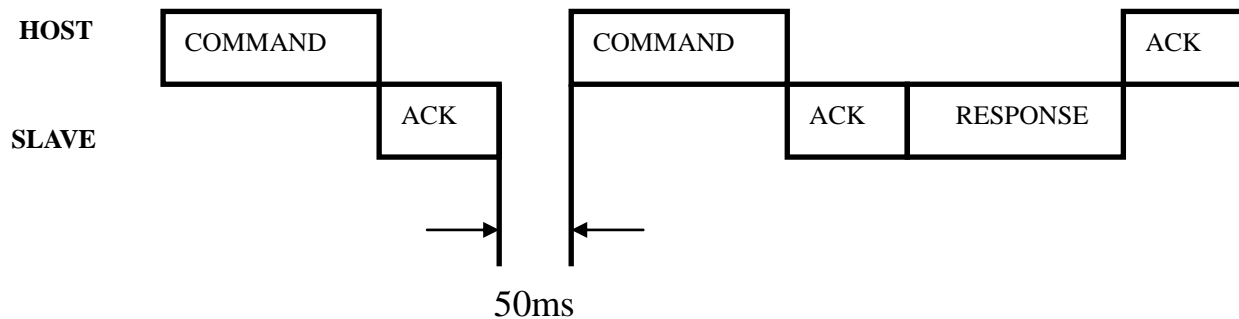


CASE 2-2)



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CASE 2-3)



cf) To change Baud Rate , send command 50mS after receiving ACK .

10.1. Command Sets List

	Command	Description	Note
Clear	0x30	Error Clear	
Request	0x31	Status Request	
Collect	0x40	Collect	
Move	0x44	Feed Out	
	0x45	Capture	
	0x47	Feed Hold	
	0x48	Feeder Stand By	
Baud Rate Set	0x50	9600 BPS Setting	Default
	0x51	19200 BPS Setting	
Rom Version	0x60	Rom Version	

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10.2. Command Details

10.2.1. Clear

: Clear Motor Jam bit of Status Request Command Response

※ Command Packet

STX	Command(0x30)	ETX	BCC
-----	---------------	-----	-----

10.2.2. Status Request.

: Host's Request for status of Collector

Command Packet

STX	Command(0x31)	ETX	BCC
-----	---------------	-----	-----

※ Response Packet

STX	Status 1	Status 2	ETX	BCC
-----	----------	----------	-----	-----

※ Status Data Format (1 byte) – Cf) Page 10

7	6	5	4	3	2	1	0
1	0	0	0	0	0	0	0

<STANDARD TYPE>

Data	Status	Remark
0x80	Good	Normal
0x81	Collector Jam	Collector Motor Jam
0x82	Feed Jam	Feed Motor Jam .
0x84	Two Card Occur	There are Two card in the machine
0xc0	Busy	Ready

<DROP TYPE>

Data	Status	Remark
0x80	Good	Normal
0x81	Collector Jam	Collector Motor Jam
0x82	Feed Jam	Feed Motor Jam .
0x84	Two Card	There are two cards in the unit
0xc0	Busy	Ready
0x90	Sensor#4 Detection	Feed Sensor detect Card

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※ Status Data Format (2 byte) – Cf) Page 10

7	6	5	4	3	2	1	0
1	0	0	0	0	0	0	0

<STANDARD TYPE>

Data	Status	Remark
0x80	Good	Normal
0x81	Sensor#2 Detection	Collector Sensor#2 detect card
0x82	Sensor#1 Detection	Collector Sensor#1 detect card
0x84	Feed Sensor1 Detection	Feed Sensor detect Card
0x88	Feed Sensor2 Detection	
0x90	Feed Sensor3 Detection	
0xA0	Full Sensor Detection	Full Sensor detect Card
0xC0	Cartridge Detection	There is a Cartridge in the unit.

<DORP TYPE>

Data	Status	Remark
0x80	Good	Normal
0x81	Sensor#2 Detection	Collector Sensor#2 detect card
0x82	Sensor#1 Detection	Collector Sensor#1 detect card
0x84	Feed Sensor1 Detection	Feed Sensor detect Card
0x88	Feed Sensor2 Detection	
0x90	Feed Sensor3 Detection	
0xA0	Full Sensor Detection	Full Sensor detect Card
0xC0	Cartridge Detection	There is a Cartridge in the unit.

10.2.3. Collect

: The card collector collect a card.

※ Command Packet

STX	Command(0x40)	ETX	BCC
-----	---------------	-----	-----

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10.2.4 Feeder Stand By.

: In the case that the card is present in the feeder module, move the card between Feed Sensor#1 and Sensor#3.

※ Command Packet

STX	Command(0x42)	ETX	BCC
-----	---------------	-----	-----

10.2.5 Feed Out

: When the card is present in the feeder module, completely eject the card.

※ Command Packet

STX	Command(0x44)	ETX	BCC
-----	---------------	-----	-----

10.2.6 Capture

: When the card is present in the feeder module, capture the card.

※ Command Packet

STX	Command(0x44)	ETX	BCC
-----	---------------	-----	-----

10.2.7 Feed Hold

: Move the card to the outlet. And stop the card in Feed Sensor1.

※ Command Packet

STX	Command(0x44)	ETX	BCC
-----	---------------	-----	-----

10.2.8. Baud Rate Set.

: Baud Rate Setting.(After ACK receive, next Command should be transmitted after 50ms)

※ Command Packet (9600BPS)

STX	Command(0x50)	ETX	BCC
-----	---------------	-----	-----

※ Command Packet (19200BPS)

STX	Command(0x51)	ETX	BCC
-----	---------------	-----	-----

10.2.9. Rom Version.

: Rom Version of the CMX-22XX.

Command Packet

STX	Command(0x31)	ETX	BCC
-----	---------------	-----	-----

※ Response Packet

STX	Ver1(1byte)	Ver2(1byte)	ETX	BCC
-----	-------------	-------------	-----	-----

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11. Status of the card jam and the way to deal with the card jam

11.1.1 Collect Jam

: Can not use Collect commands.

(All jam is canceled and you can use these command, if Clear command is executed)

But Can use the feeder commands such as Capture, Feed Out, Feed Hold, Feeder Stand By ..

11.1.2 Feeder Jam

: Cannot use all command except Status Request commands.

(All jam is canceled and you can use all command, if Clear command is executed)