GK1500 UNIVERSAL KIOSK

USER'S MANUAL

REV 0

April 2019

GENMEGA INC

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Revision History

Rev#	Date	Description
0	April 2019	• Daft release
		•
		•
		•
		•

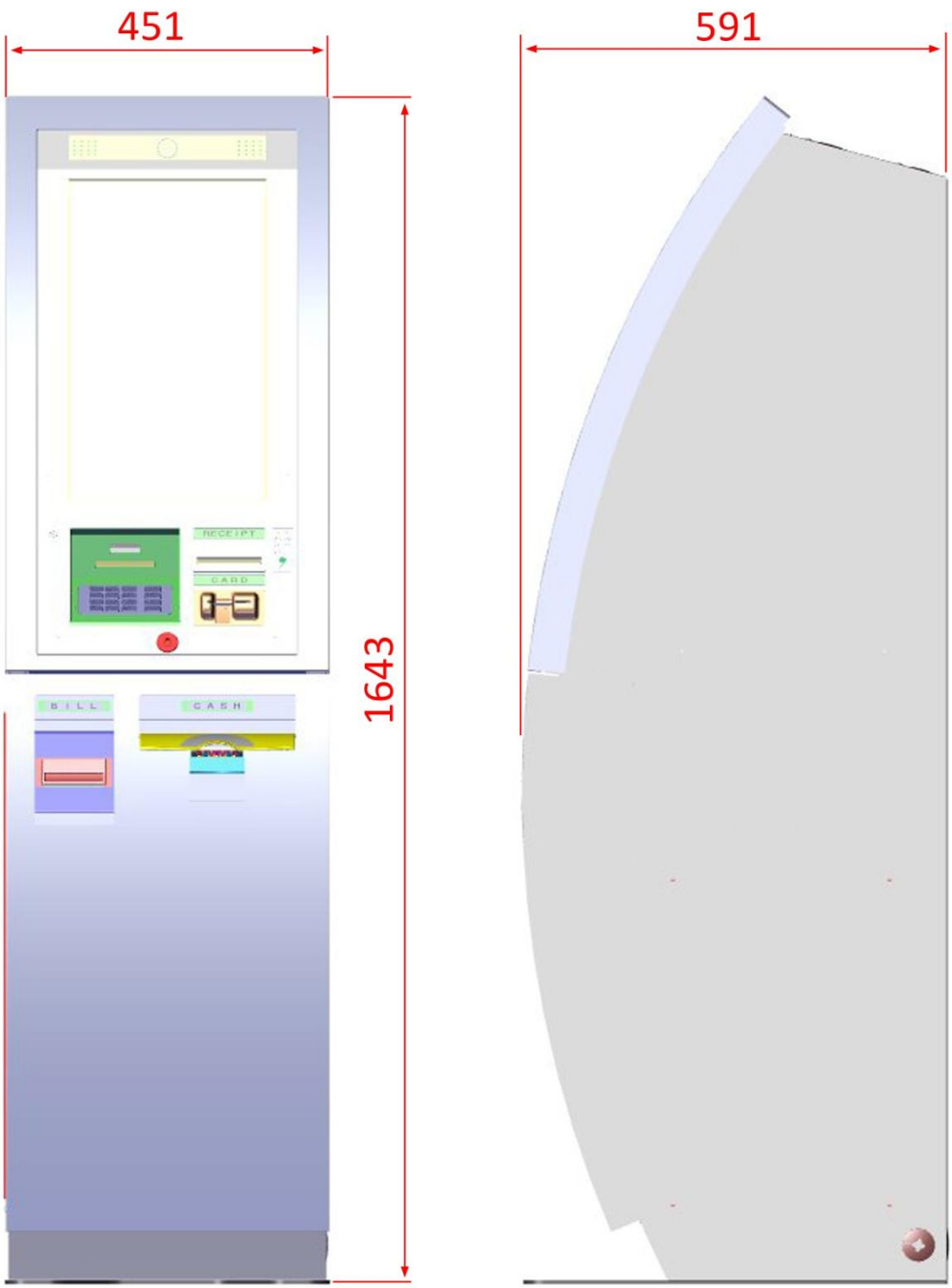
1. GK1500 System Specifications

GK1500 system specifications are

- System vault with two compartments, bottom safe and top cabinet
- HCDU with two cassettes, 2000-note capacity each cassette, option of three cassettes
- Receipt printer with 3-1/8” paper roll; optional 66mm paper
- Card reader, EMV and MS
- EPP of PCI v3.x certified
- PC unit with Windows 7 Professional installed, 8 COM ports, dual LANs, 5 USB ports, HDMI/VGA, Intel ATOM CPU, 4GB memory, 500GB HDD; optional i5 PC
- LCD and touch screen of 21.5-inch wide in vertical installation
- One MEI SCNXL66/83 with cashbox of 2200-note capacity; optional SCNL66/83 with cashbox of 1200-note
- ADA earphone jack
- HD Camera
- Two speakers
- UPS of APC 350, 110V input/output, optional 220V
- Main power supply PSU2100
- Five indicators and one light
    - Card reader
    - Receipt printer
    - EPP
    - Bill acceptor
    - Cash dispenser
    - Cash tray light
- Barcode scanner
- Fingerprint reader, optional
- Top cabinet lock with regular/unique key
- Safe lock options
    - Standard E-lock or
    - Cencon lock or
    - SG A-series lock
- WiFI adaptor, optional

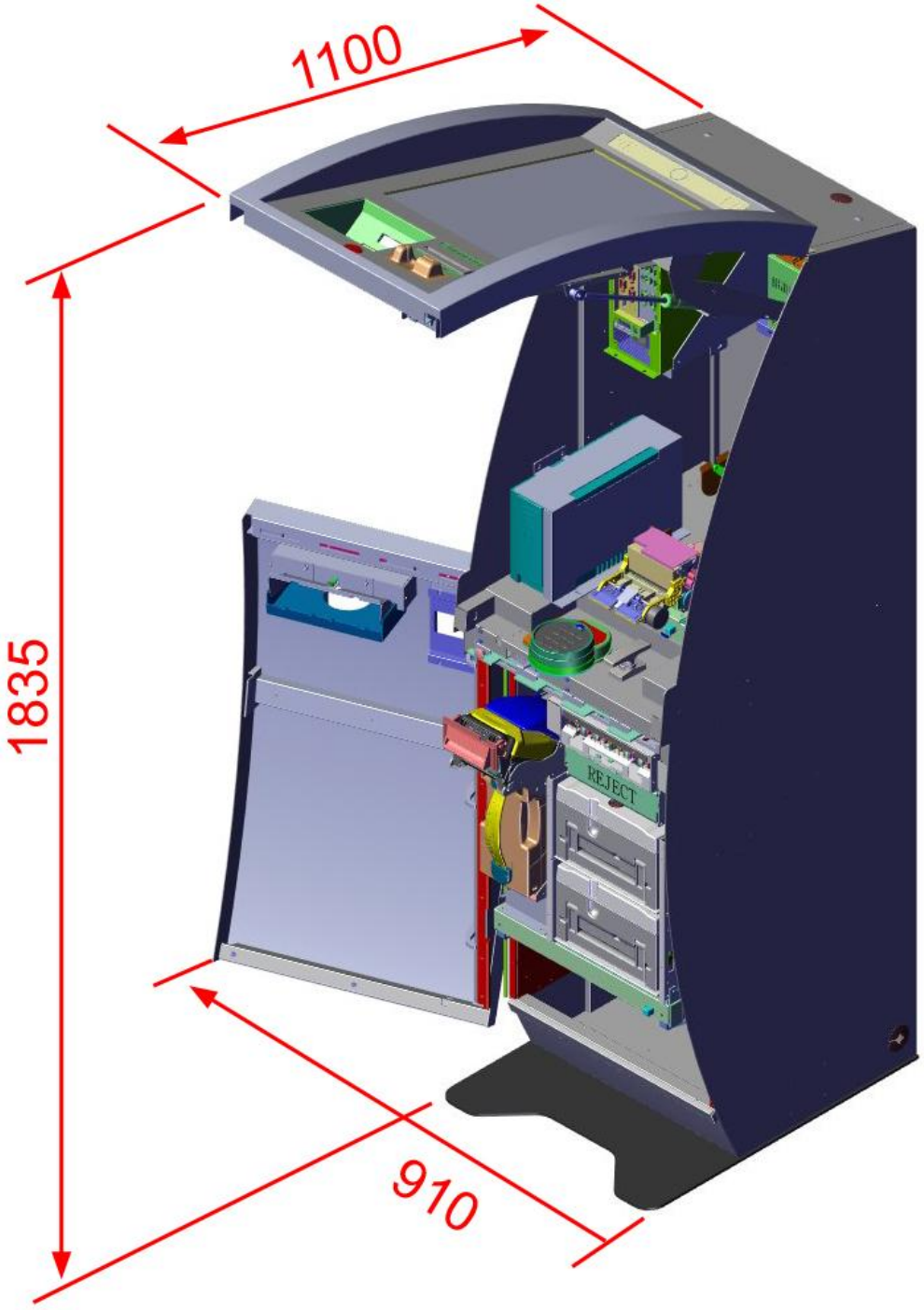
Overall system dimensions are

- Height: 1643mm (64.7 inch)
- Width: 451mm (17.8 inch)
- Depth: 591mm (23.3inch)



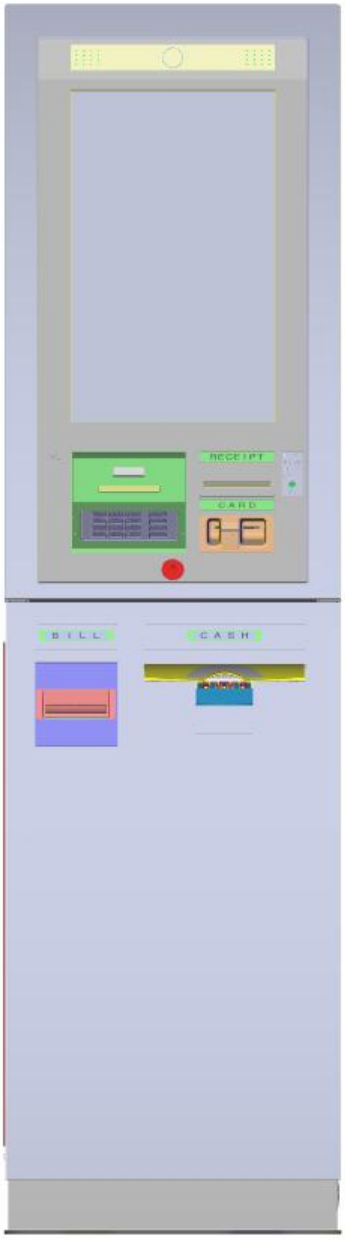
Overall system dimensions for door operation are

- Height: 1835mm (72.2 inch)
- Width: 910mm (35.8 inch)
- Depth: 1100mm (43.3 inch)

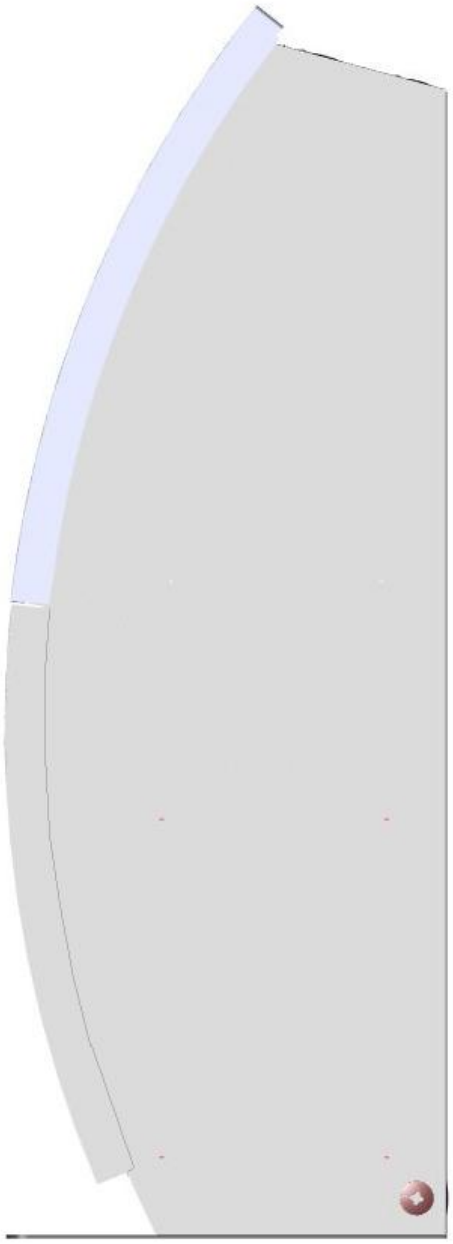


2. GK1500 System Details

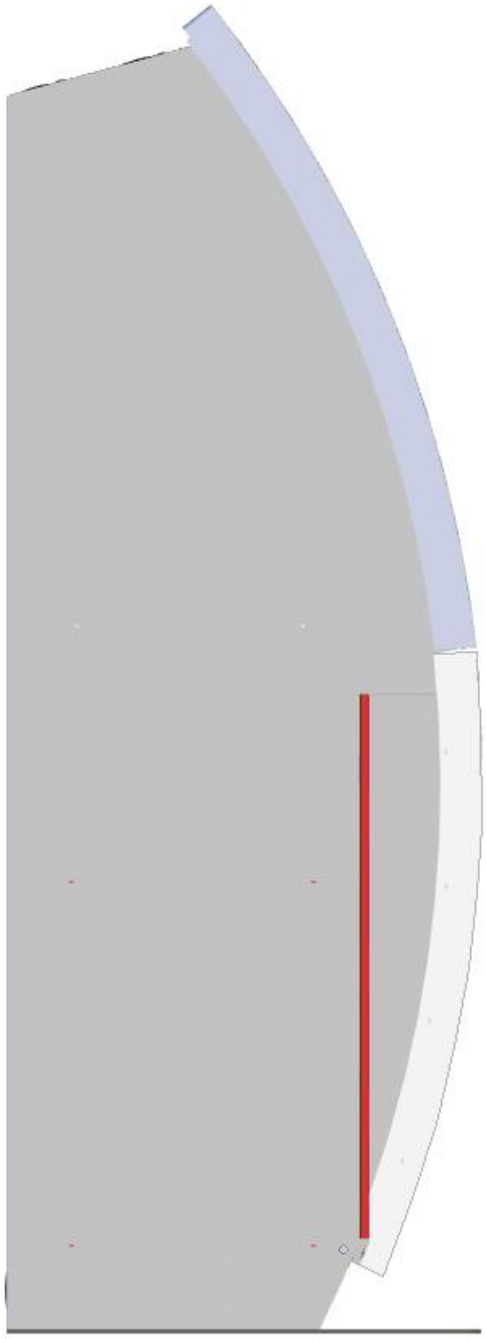
GK1500 comes with two sections, top cabinet and bottom safe.



FRONT VIEW



RIGHT VIEW



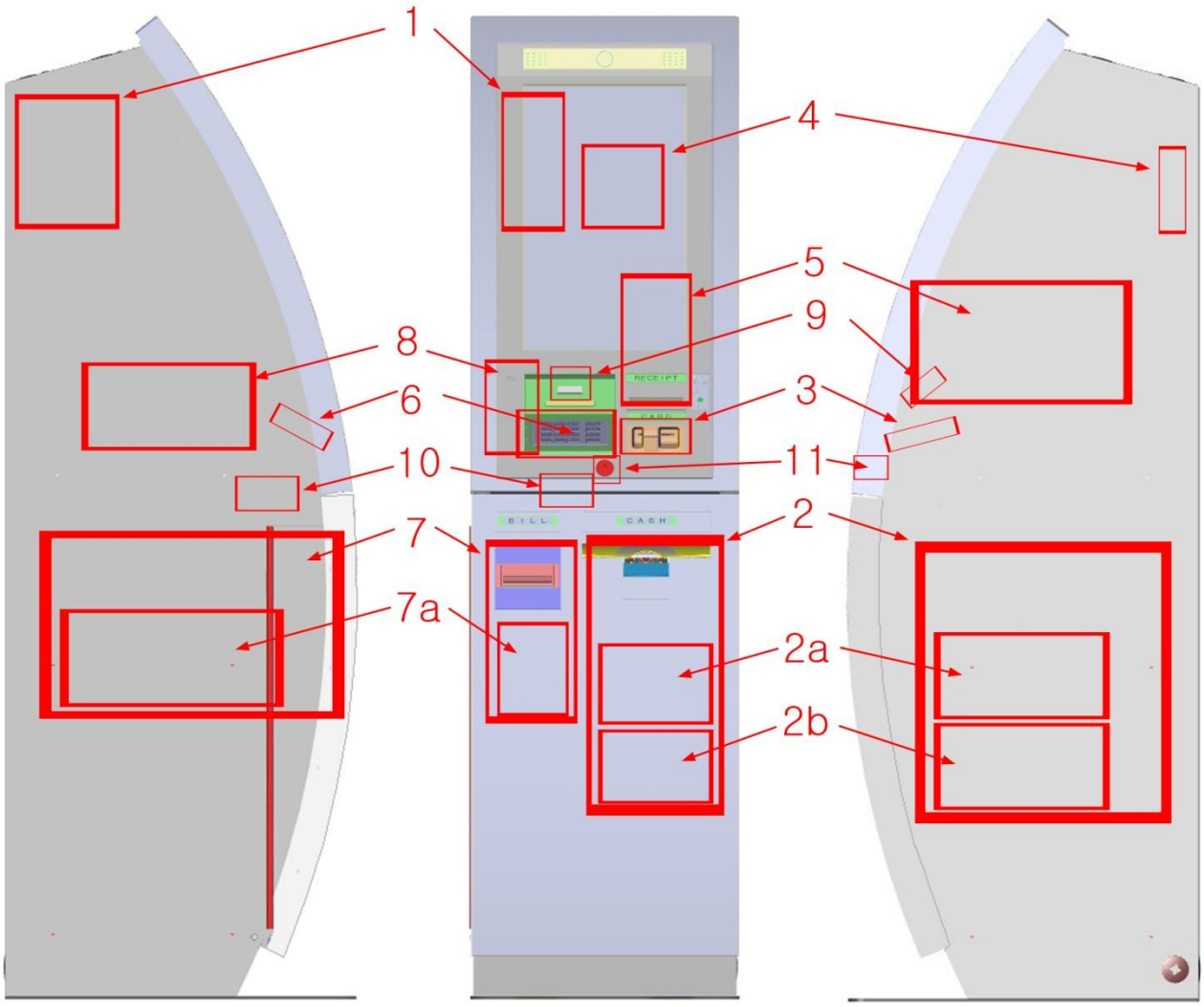
LEFT VIEW

2.1 GK1500 Devices

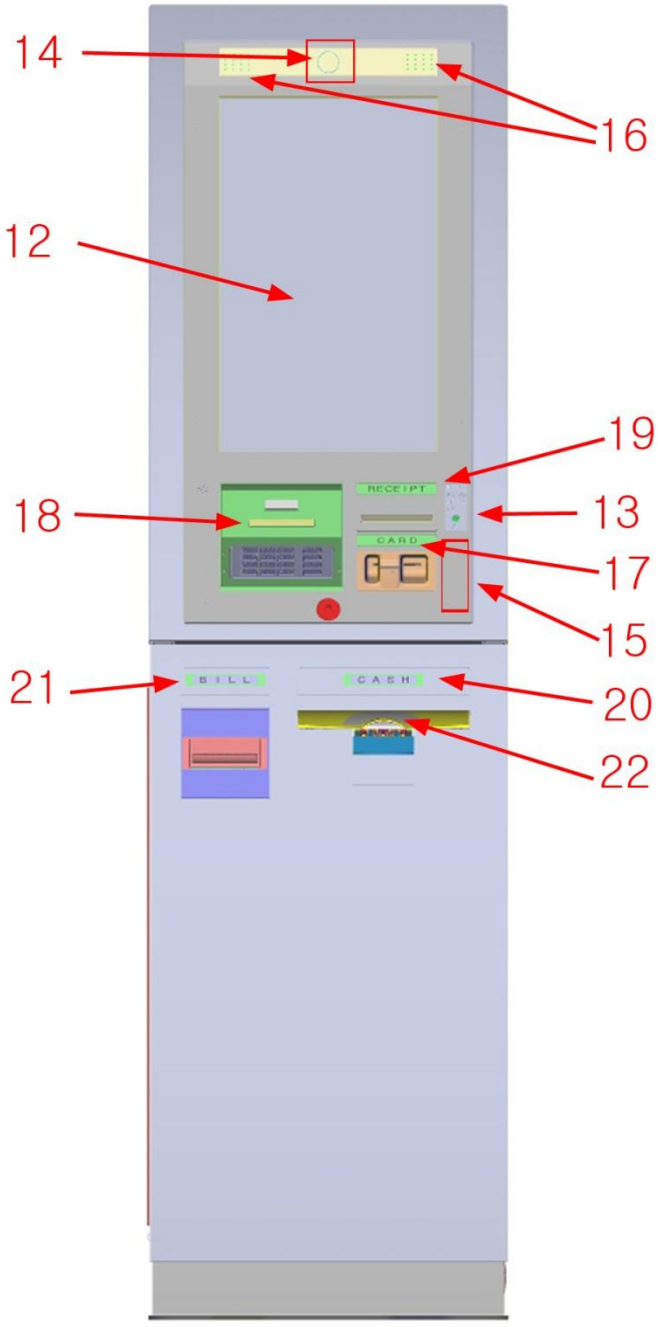
GK1500 comes with following components (9-digit Genmega part number):

1. PC unit, NF9B (161104411)
2. 2high HCDU (151110451)
    a. 1st CST, 2000note (141139101)
    b. 2nd CST, 2000note (141139111)
3. EMV/MS card reader (241110751)
    a. Reset board (240218631)
4. Main power supply PSU2100 (251118791)
5. Receipt printer (271110141)
    a. Paper 3-1/8", 8 rolls (170315031)
6. EPP (201207531)
7. MEI SCNXL bill acceptor
    a. SCNXL66 w/ cashbox (111118681)
    SCNXL83 w/ cashbox (111130711)

    Cashbox (110230721)
8. UPS APC350 110V (111210111)
9. Barcode scanner (111150201)
10. Safe lock, E-lock (231114341)
    a. Cencon, optional (231106591)
    b. A-series, optional (231114441)
11. Top cabinet lock, unique key x3 (230219191)
    a. Lock, regular key x2 (230219201)
    b. Lock, unique key x8 (230219211)



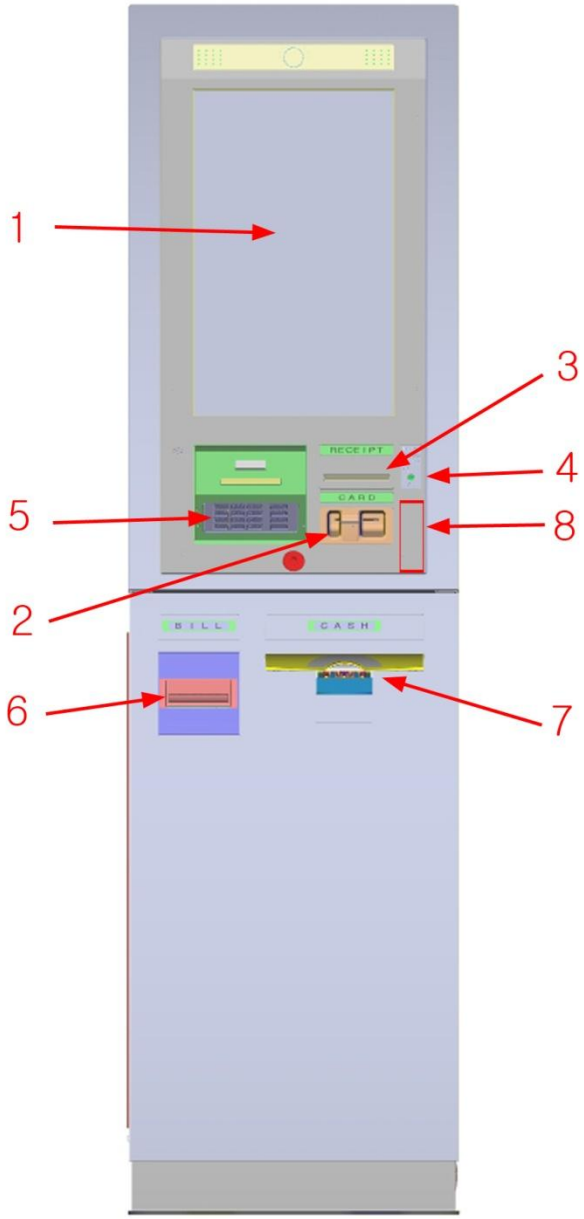
12. LCD panel and Touch Assembly (211135451)
    a. LCD panel
    b. Touch screen
    c. A/D board
    d. SIC board
    e. Inverter board
    f. OSD board
13. ADA earphone jack (110250691)
14. Camera (180217251)
15. Fingerprint reader, optional (111101541)
16. Speakers, L & R (110209471)
17. Flicker light, EMV card (180250601)
18. Flicker light, EPP (180250601)
19. Flicker light, receipt (180250601)
20. Flicker light, CDU (180250601)
21. Flicker light, bill acceptor (180250601)
22. Cash tray light (180250651)



2.2 User Interfaces

GK1500 comes with following user interfaces:

1. LCD panel and touch screen
2. Card reader
3. Receipt
4. ADA earphone jack
5. EPP keypad
6. Bill acceptor bill entrance
7. Cash tray
8. Fingerprint reader

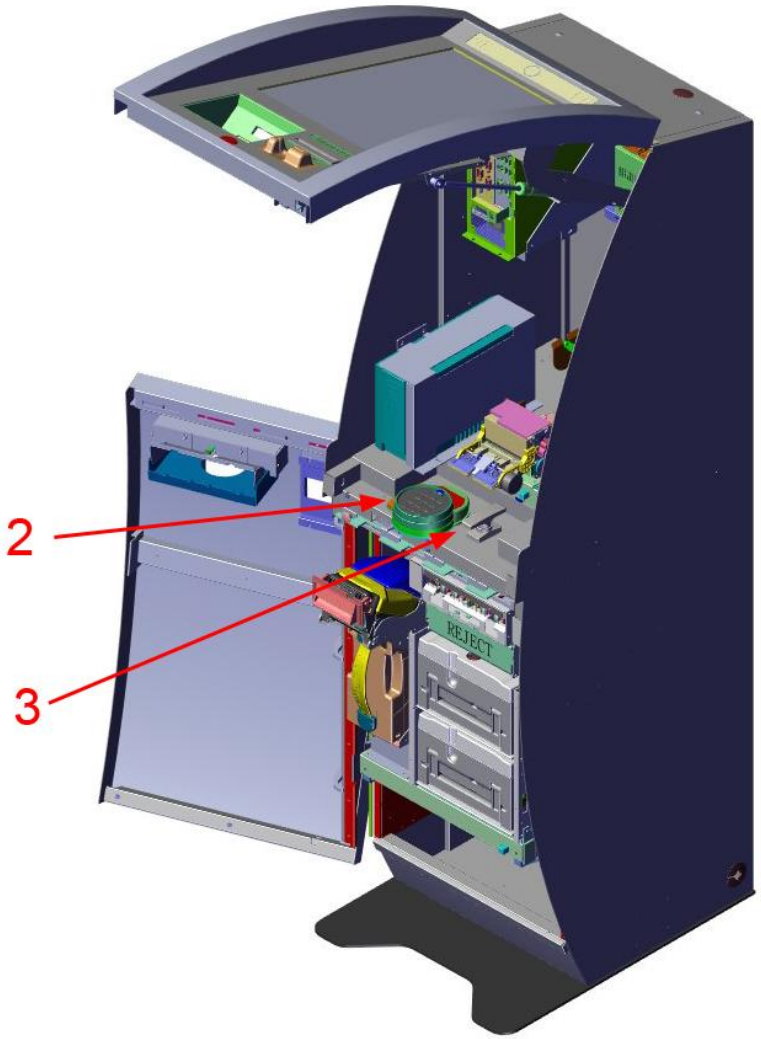


For the access to internal area, the lock should be opened

1. Top cabinet lock

For the access to devices inside the safe and PC unit, additional locks are required to be opened

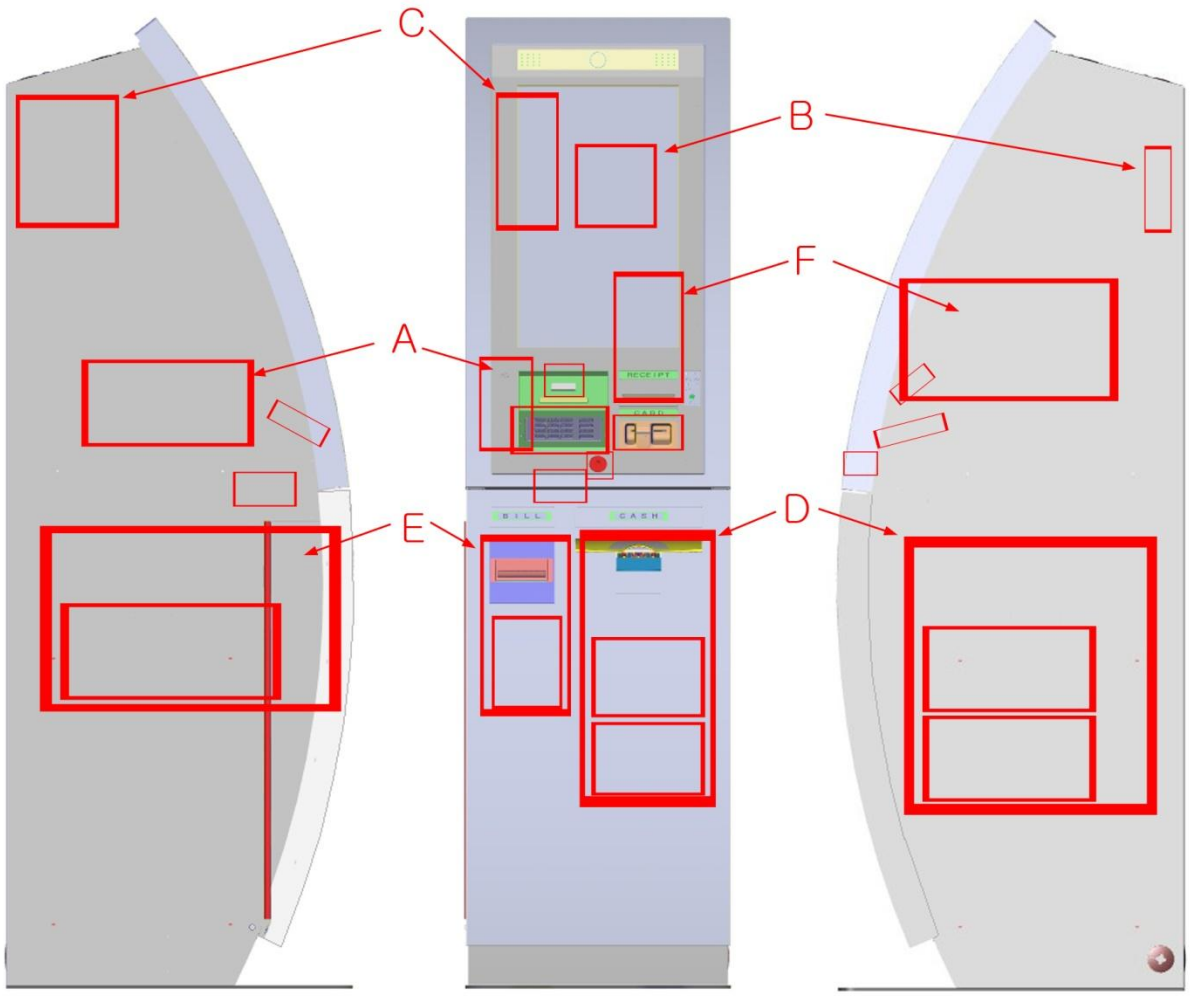
2. Lock to the safe door
3. T-handle to the safe door



2.3 Devices Power Connection Diagram

The diagram below shows GK1500 devices are connected to main power supply and also to PC unit to get its DC power:

1. 110V AC line:
    - Wall outlet -> A -> B -> C
        - A: UPS
        - B: Main power supply
        - C: PC unit
2. Main DC line (Main power supply):
    - B: Main power supply -> (D,E,F)
        - D: Cash dispensing unit (CDU)
        - E: Bill acceptor
        - F: Receipt printer



3. Sub DC line (from power supply inside PC unit):

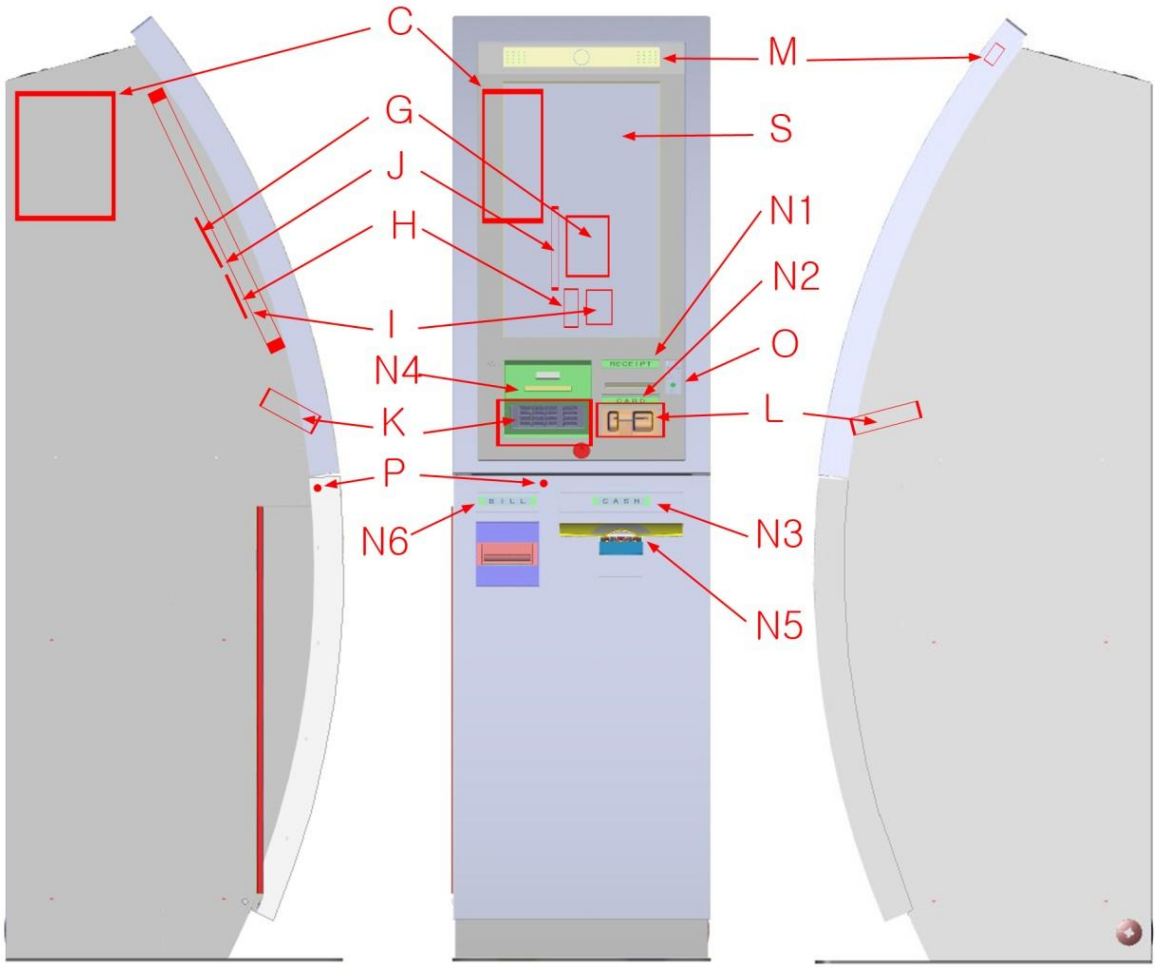
C: PC unit DC out -> G: VGA board-> (H,I,J)

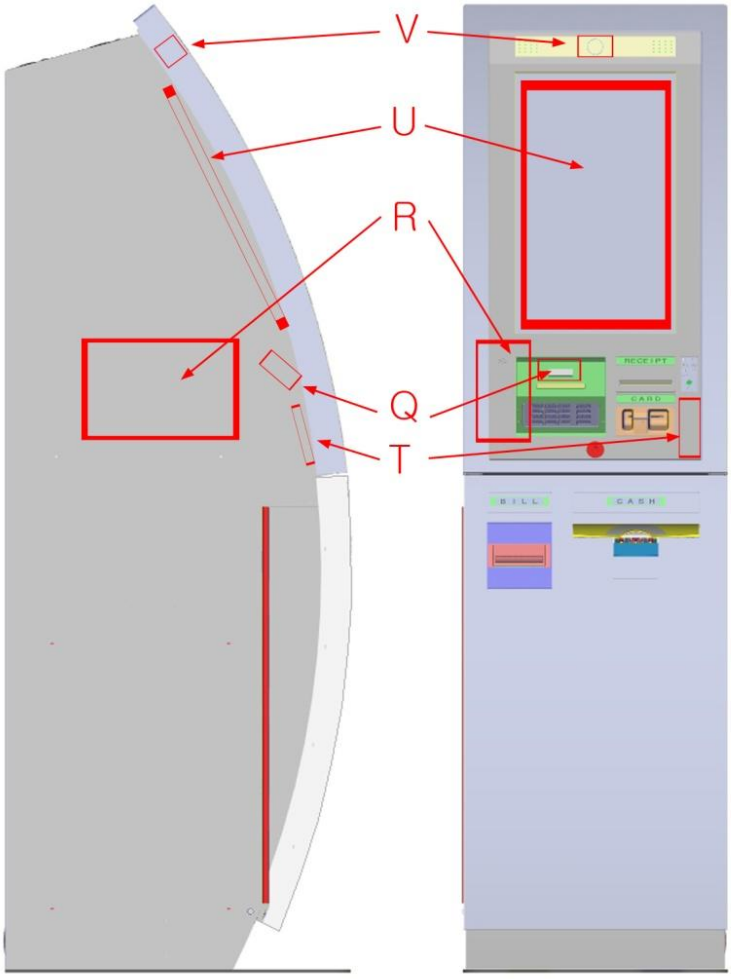
- H: Inverter -> S: LCD panel
- I: SIC board
- J: OSD board

  - I: SIC board -> (K,L,M,N,O,P)
    - K: EPP
    - L: EMV card reader
    - M: Speakers (L & R)
    - N: Flickers (N1-receipt, N2-card reader, N3-CDU, N4-EPP, N5-Cash tray, N6-Bill)
    - O: ADA earphone jack
    - P: Switch, CDU safe door

C: PC unit USB ->(Q,R,T,U,V)

- Q: Barcode scanner
- R: UPS
- T: Fingerprint reader
- U: Touch screen
- V: Camera



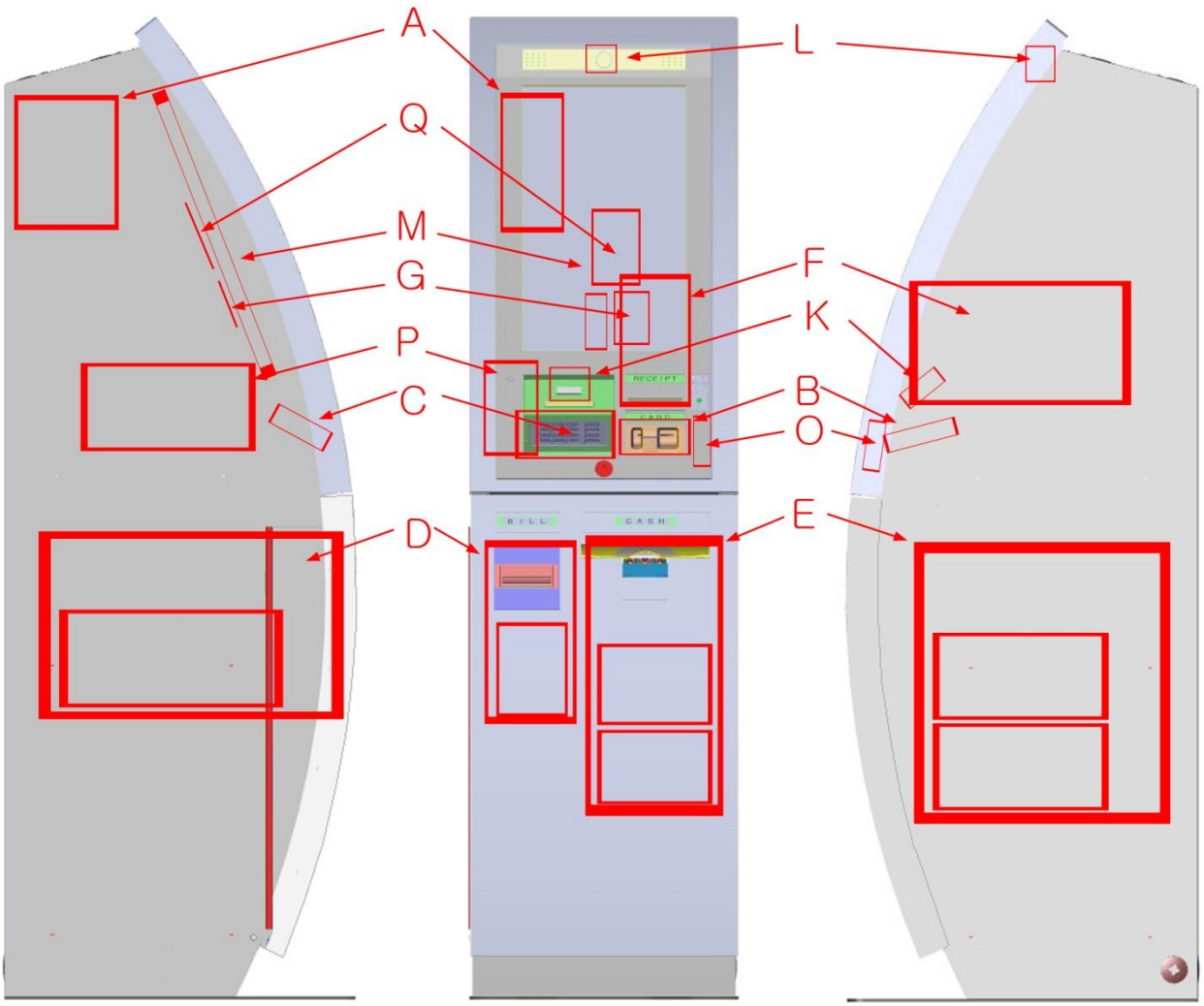

V
U
R
Q
T
RECEIPT
CARD
BILL
CASH

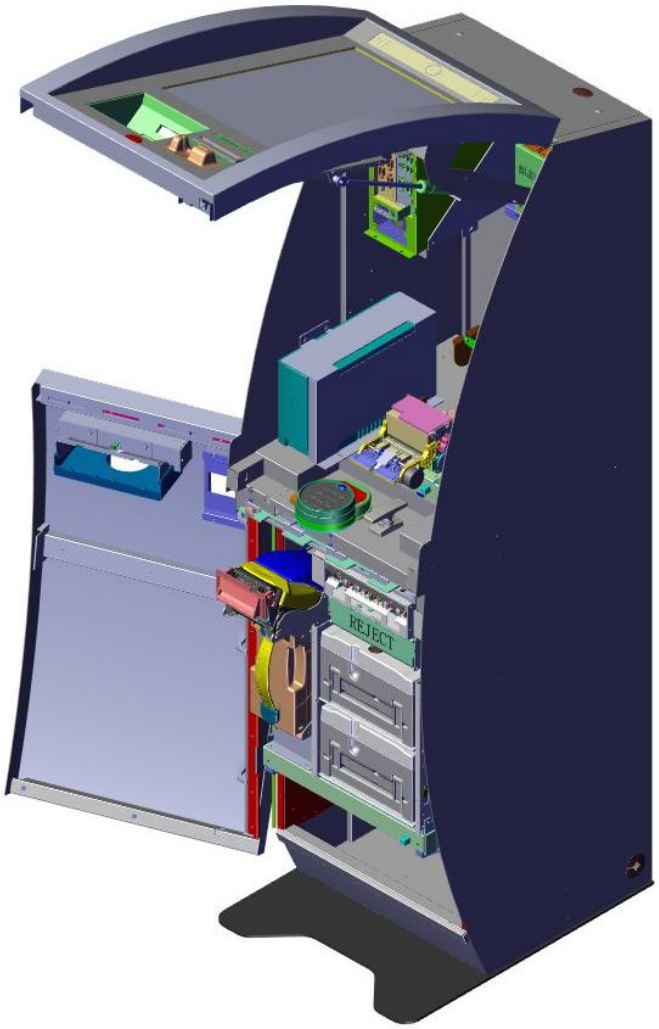
2.4 Devices Communications Connection Diagram

The diagram below shows GK1500 devices communication with PC unit and also with sub-devices:

A: PC unit -> (B,C,D,E,F,G,K,L,M,O,P,Q)

- B: EMV card reader (COM1)
- C: EPP (COM2)
- D: Bill acceptor (COM3)
- E: CDU (COM4)
- F: Receipt printer (COM5)
- G: SIC board (COM6) -> H: Flicker/ Light/Switch
  - H1: Flicker, receipt
  - H2: Flicker, EMV card
  - H3: Flicker, CDU
  - H4: Flicker, EPP
  - H5: Flicker, Cash tray
  - H7: Flicker, Bill acceptor
  - H8: Switch, CDU safe door
- G: SIC board -> I: ADA earphone jack
- G: SIC board (AUDIO) -> J: Speakers
- K: Barcode scanner (COM7)
- L: Camera (USB)
- M: Touch screen (USB)
- O: Fingerprint reader (USB)
- P: UPS (USB)
- Q: VGA board -> (LCD panel, OSD board)





Section	Parts List and Genmega Part Number
System overall	• System body without doors () • Top cabinet door (190250951) • Safe door with hinge, 3high CDU + SCN (190220391) • System cable harness () • Dome plug without cable opening (180215181) • Dome plug with cable opening (180215191)

Top cabinet	• LCD/Touch assembly, capacitive (211135451)
	  ○ LCD panel (210230461)
	  ○ Touch screen, capacitive (210220551)
	  ○ A/D board, capacitive (210230311)
	  ○ SIC board (180215251)
	  ○ Inverter board, capacitive (210219001)
	  ○ OSD board

	• EPP (201207531)

	• EPP mounting bracket (200260601)
	• EMV/MS card reader (241110751) ○ Reset board (240218631) • EMV mounting bracket ()
	• Camera, MS HD(110019241)
	• Speaker, L & R (110209471)
	• ADA earphone jack (110250691)

	• PC unit (161104411)
	  ○ Motherboard (161218281)
	  ○ Hard drive, 500GB SATA HDD (161202401)
	  ○ PCI-to-serial card, 2xCOM (160218841)
	  ○ PC power supply (251107361)
	  ○ Memory, 2GB (160206911)

	• Main power supply PSU2100 (251118791)
	• UPS APC350 110V (111210111)
	• Fingerprint reader (111101541)

	• Receipt printer, 3” (3-1/8”) (271210141)
	  ○ Paper roll (170320221)
	  ○ Spindle (270212671)
	• Printer slide base with rails ()

	• Flickers
	  ○ Receipt printer (180250601)
	  ○ EPP (180250601)
	  ○ EMV card reader (180250601)
	• Lights
	  ○ Coin tray (180250601)
	• Switches
	  ○ Top cabinet door (290204731)

Bottom safe	• MEI SCNXL66/83 w/ cashbox 2200 NOTES (111118681/111130711) ○ SCNXL CASHBOX, 2200 NOTES(110230721)

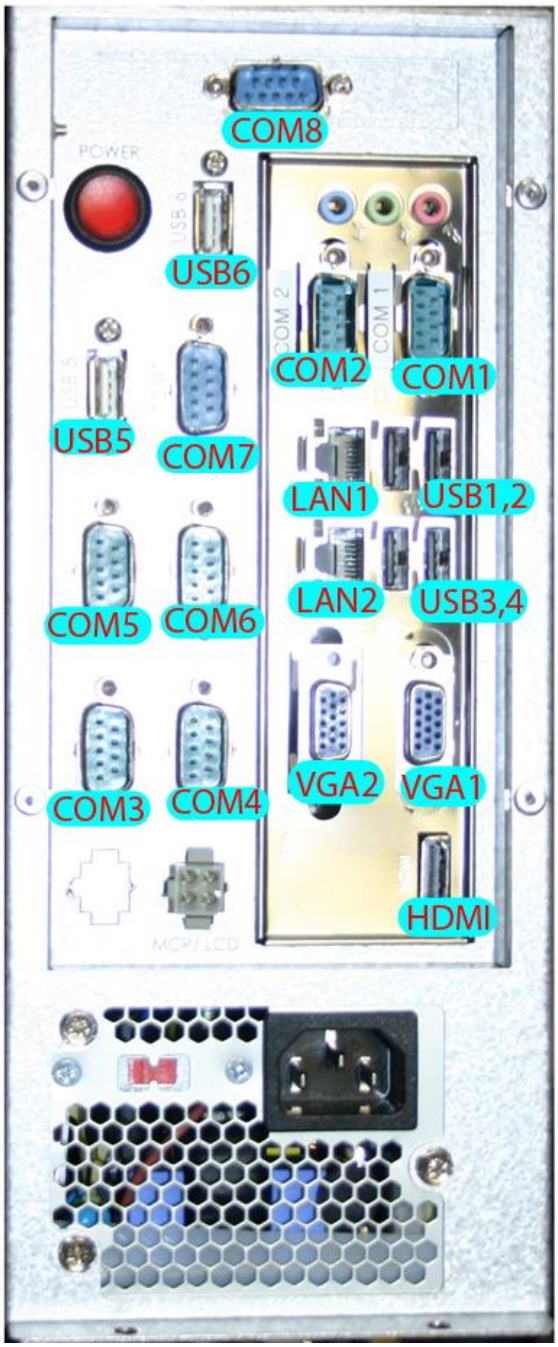
	• 2high HCDU (151110451)
	  ○ 1st cassette, 2000 note (141139101)
	  ○ 2nd cassette, 2000 note (141139111)
	• Cassette key (230203801)
	• CDU slide base with rails ()

	• UPS APC 350 110V (111210111) • UPS mounting bracket ()

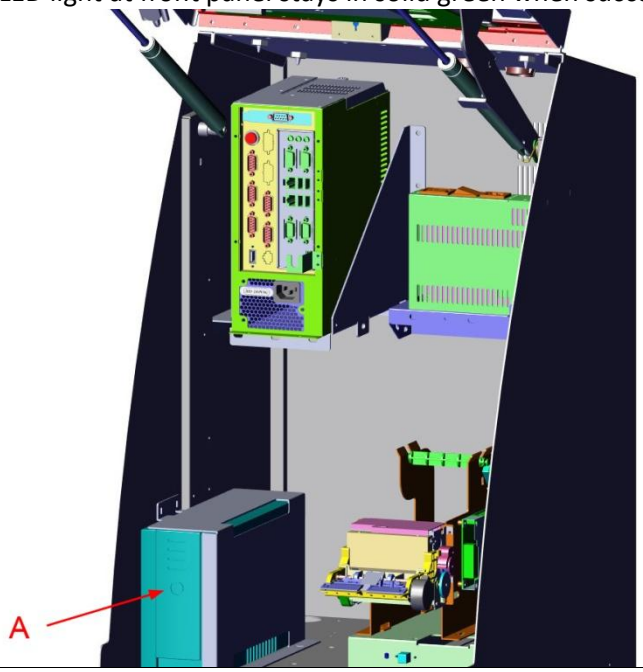
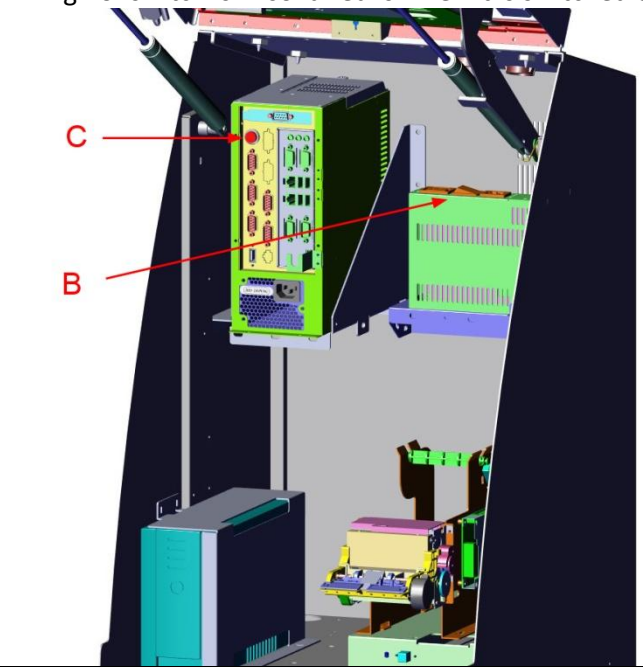
	• Flickers
	  ○ Bill acceptor (180250601)
	  ○ Cash dispenser (180250601)
	• Lights
	  ○ Cash tray (180250651)
	• Switches
	  ○ Safe door (290204731)

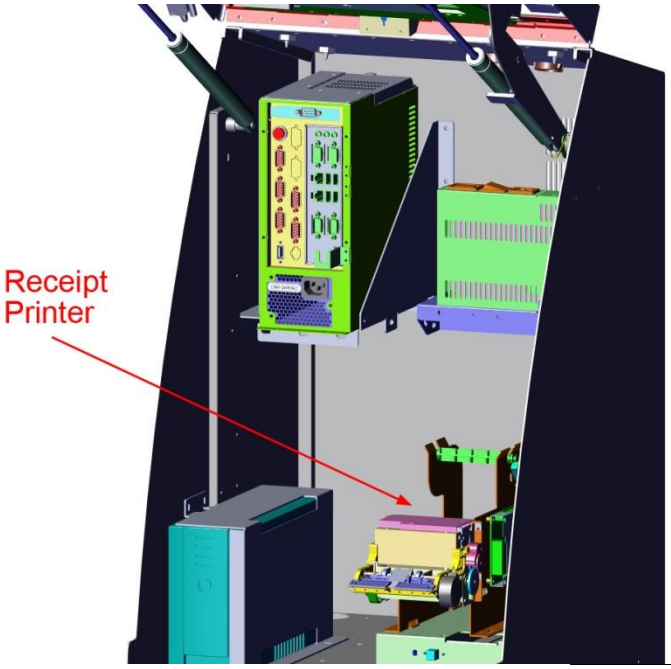
Devices COM/USB Ports Assignment

Port	Device
COM1	MCR, EMV
COM2	EPP (PCI V3.X)
COM3	Bill Acceptor SCNXL66/83
COM4	2High HCDU
COM5	RECEIPT PRINTER
COM6	FLICKER LIGHTS #1 RECEIPT PRINTER #2 MCR #3 Cash Dispenser #4 EPP #6 Cash Light #8 Bill Acceptor Switch #1 CDU safe #2 Top
COM7	Barcode scanner
COM8	Not in use
USB1	HD Camera
USB2	UPS
USB3	Fingerprint reader
USB4	Not in use
USB5	Touchscreen
USB6	Not in use



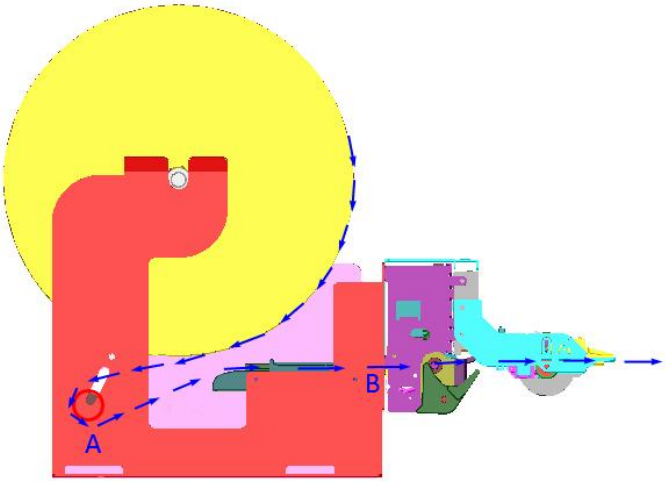
5.1 Switching On System Power

• Connect AC power cord from system (UPS) to the wall outlet	
• Switch on the UPS (**A**)	• Press the switch button (**A**) to turn it on • LED light at front panel stays in solid green when successful 
• Switch on the main power switch (**B**)	• LED light of switch is in solid red is when it is switched on
• Switch on the PC unit (**C**)	• LED ligh of switch is in solid red is when it is switched on 
• All other devices should be automatically powered on, unitialize itself and be ready for operation	

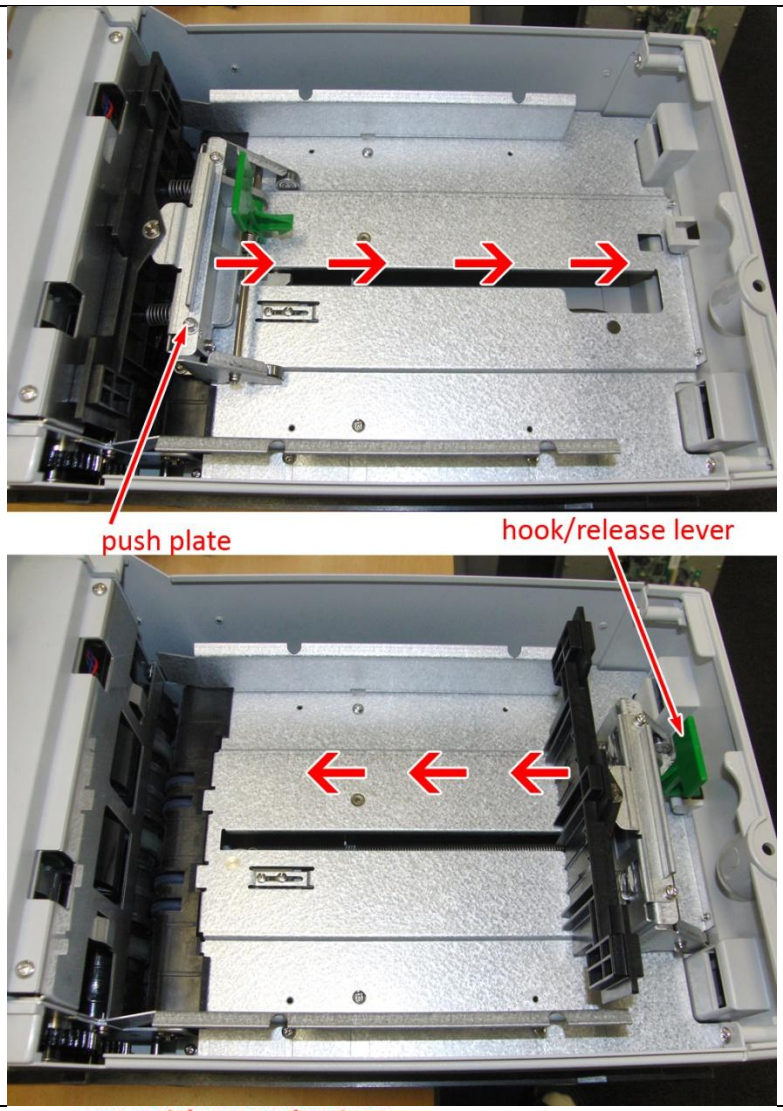


- Check the paper roll for its proper type of 3-1/8” in width and of CSO (coated side out)

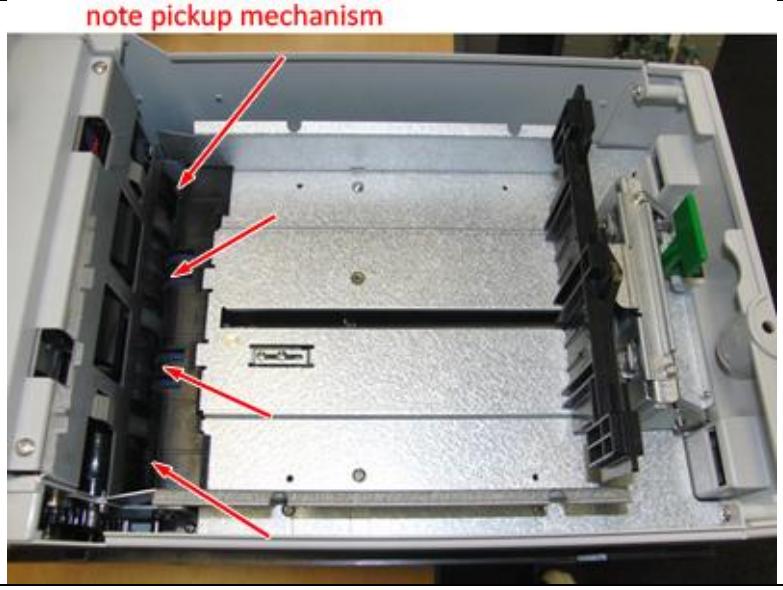
- How to load paper:
  1. Pisition paper roll with a spindle on top
  2. Pull loose end of paper to the rear in clockwise direction
  3. Turn around flexible shaft “A” and move forward
  4. Intert the tip into printer head and cutter module “B”
  5. Printer will feed the paper and dischage after cutting



- Pull the push plate all the way back to the case in which it can be locked to its open position. The push plate moves forward by its own force from spring action when it is released after cash loading



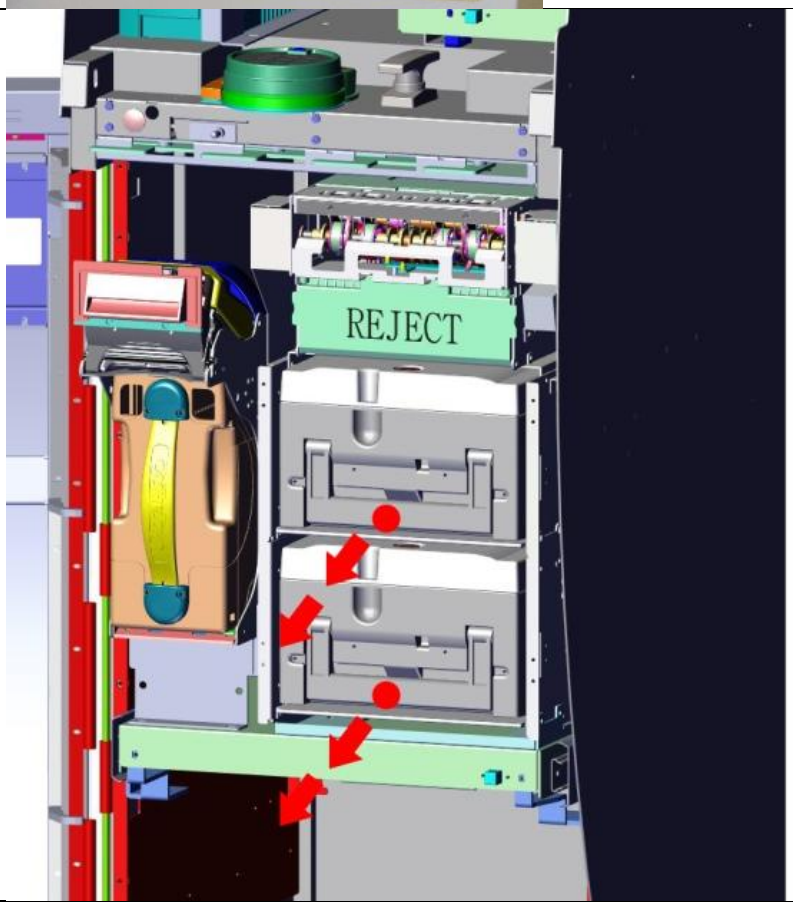
- Inspect the area of note pickup mechanism for any foreign objects before loading cash



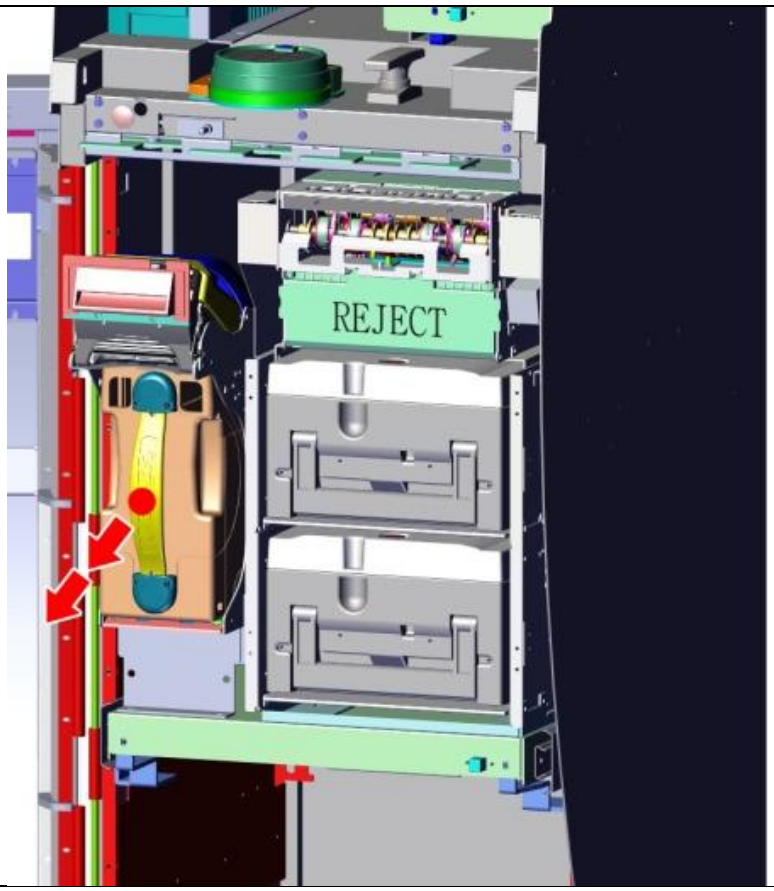
- For the cash loading into cassette, please refer to the warning label inside the cassette lid.

- To remove cassette from HCDU
  1. Hold the handle with one hand and lift the front end so that it is released from its dropped position, and then
  2. Pull straight and support the cassette body with the other hand before it completely comes out of HCDU

- To insert cassette into HCDU
  1. Push it all the way in until it slides and drops at its last moment



5.4 Bill Acceptor Cashbox

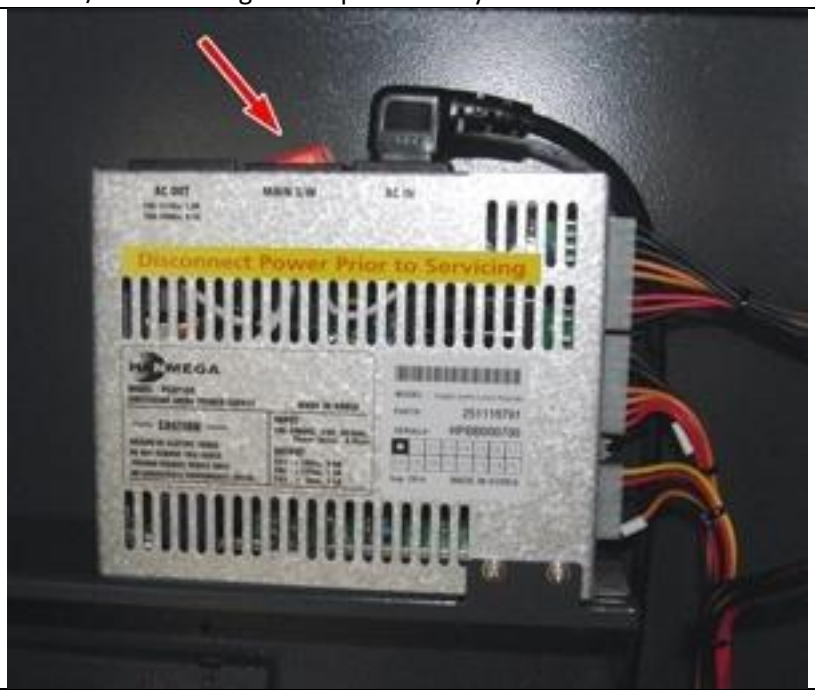
• To detach the cashbox out of its case **Step 1** Pull the cashbox by hoding the handle out of its case	

6. Device Settings and Indicators at Normal Operation

It shows the settings and displays of device at normal operation of followings

6.1 UPS

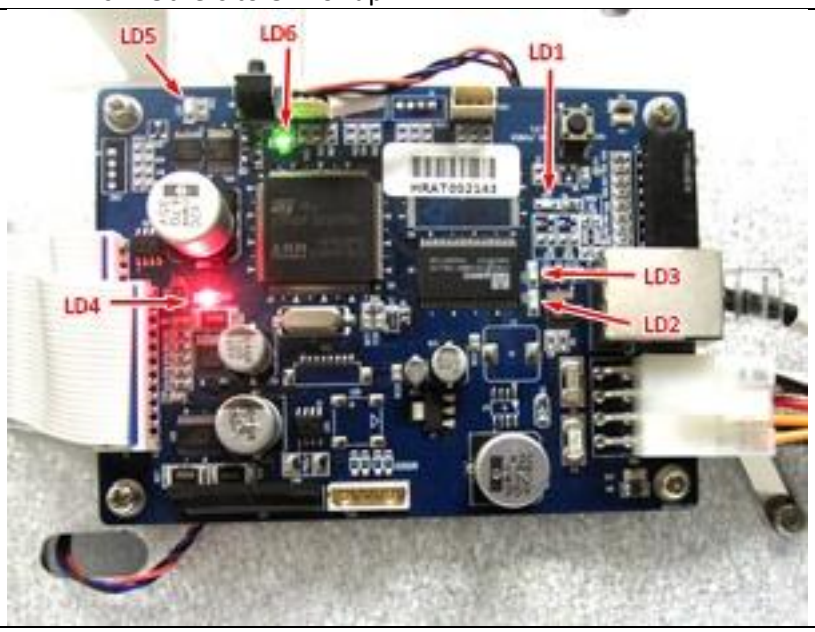
Settings and Indicators	Description
Power, AC input	• On Line light at front face always in solid green

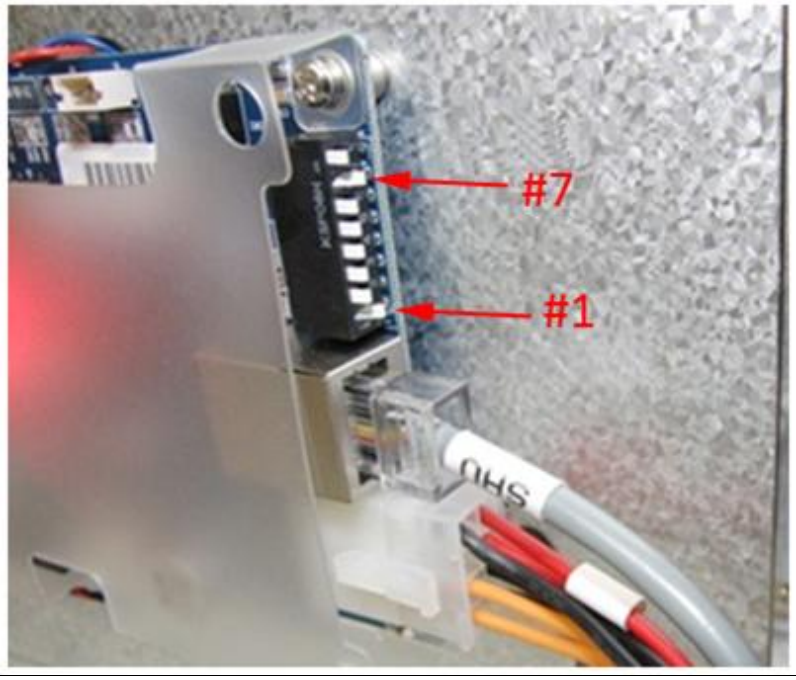
Power, AC input	• On/Off switch light at top side always in solid red
	

6.3 Receipt Printer

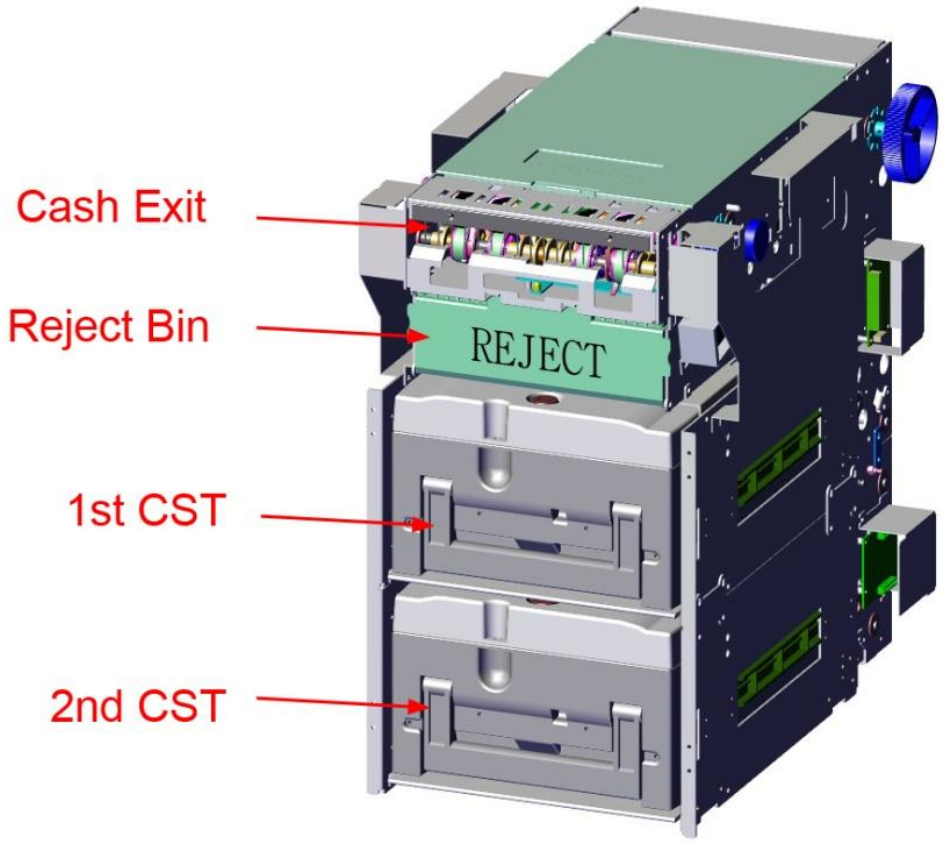
Settings and Indicators	Description
Power, DC input	• LED LD4 on control board always in solid red • LED LD6 always in solid green
Control board CPU	• LED LD1 on control board blinking always in green
Communication	• LEDs LD2 and LD3 on control board: no light at idle state, but blinking in green during communication
Thermal printing	• LED LD6 on control board: no light at idle state, but in solid green during printing

DIP switches	• Connect printer data cable to PCI-to-Serial port for high-speed communication
	• Set to baud rate of 12500 bps (8 switches)
	  ○ #1/#7 to ON or down
	  ○ Others to OFF or up

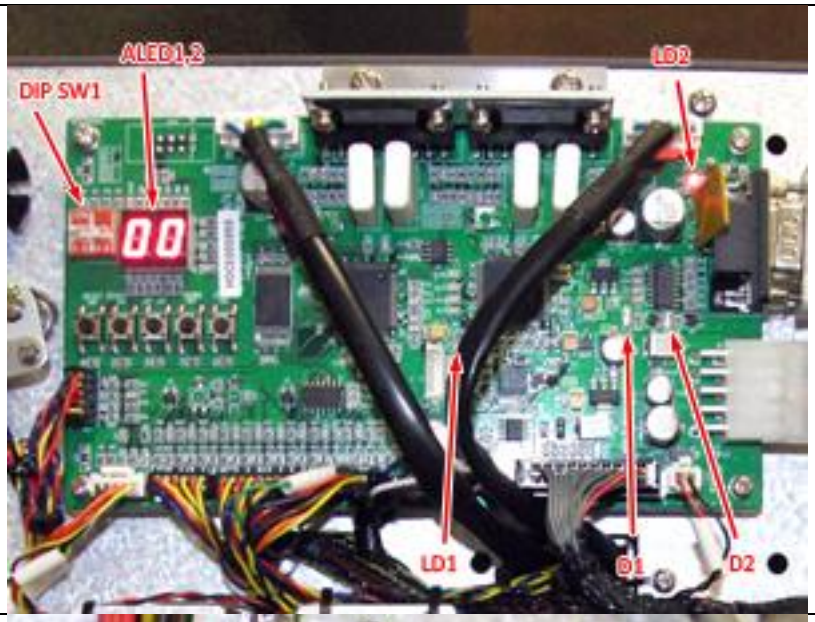
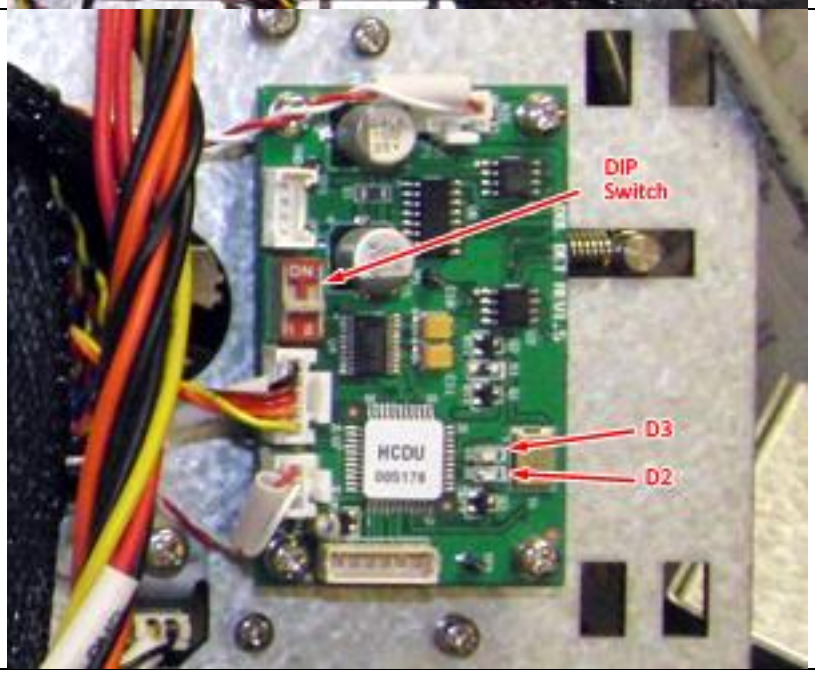
Printer control board and its LEDs	

Printer control board and its DIP switches	

6.4 Cash Dispenser 2High HCDU

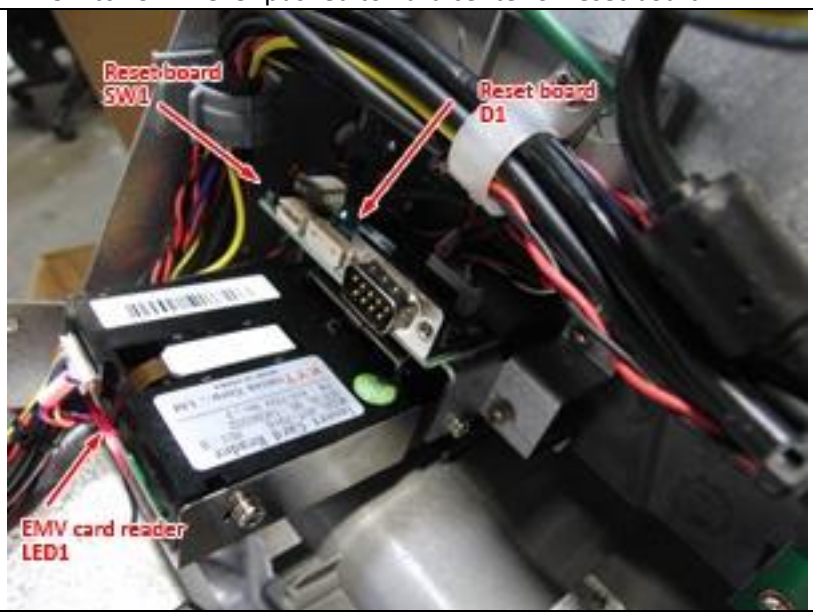


Settings and Indicators	Description
Power, DC input	• LED LD2 on main control board always in solid red
HCDU control board CPU	• LED LD1 on main control board always blinking in red
Communication	• LEDs D1 and D2 on main control board: no light at idle state, but blinking in green during communication
Two-digit Number Segment	• LEDs ALED1 and ALED2 on main control board displaying two zeros (00)
HCDU control board DIP switches	• Set to online mode (4 switches) on main control board o #1 to ON or down o Others to OFF or up
Double detection CPU	• LED D2 on double board always blinking in green
Double detection double note	• LED D3 no light during idle state or for single note; solid green for two or more notes (called double note)
Double detection DIP switches	• Double board switches position o Both #1 and #2 to OFF or Down

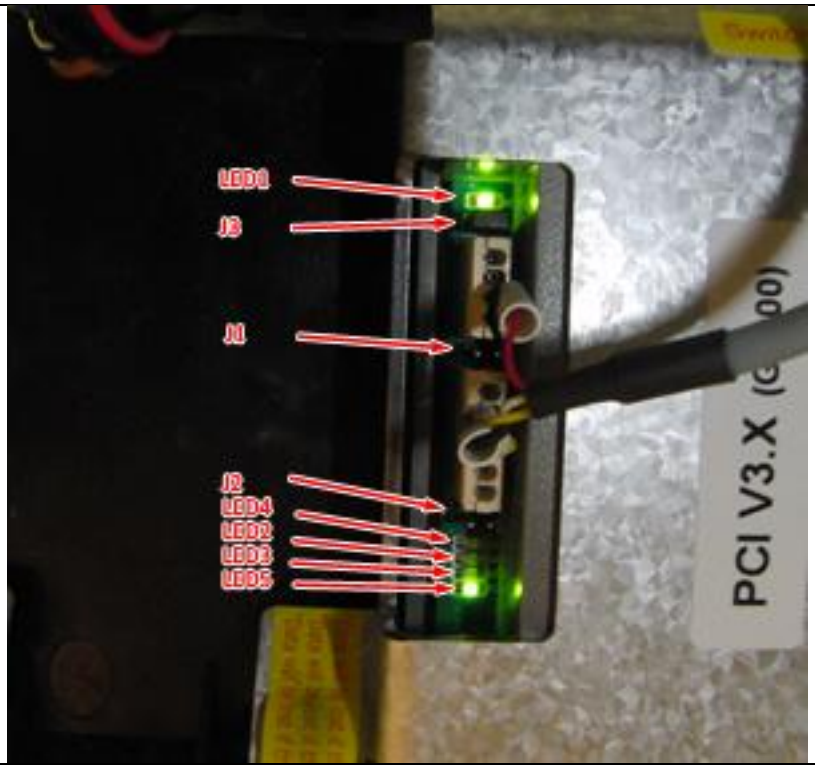
HCDU control board and its LEDs and DIP switch	
Double board LEDs and DIP switches	

6.5 PC Unit

AC Power input	• ON/OFF switch on rear side in solid red when switched ON; no light when switched OFF

Settings and Indicators	Description
Power, DC input	• LED LED1 on control board always in solid red
Reset board CPU	• LED D1 on reset board always blinking in green
Reset board selection lever	• Switch SW1 lever pushed toward center of reset board
EMV card reader and its reset board	

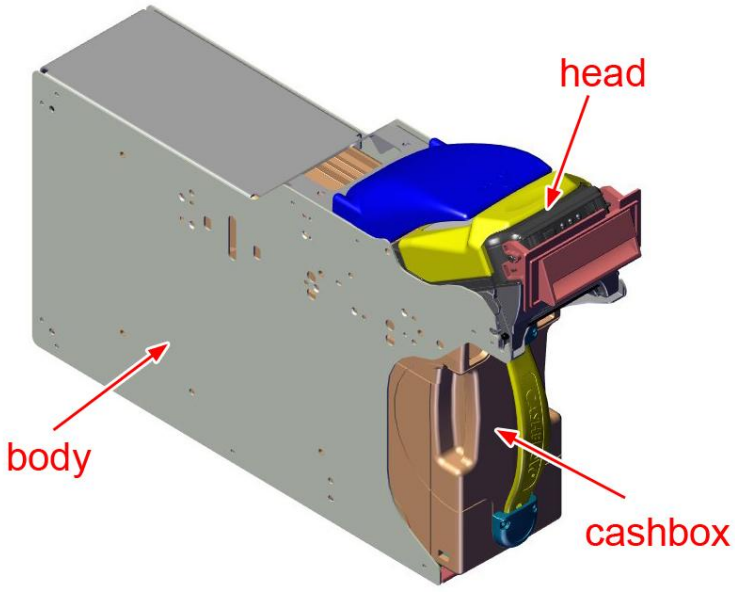
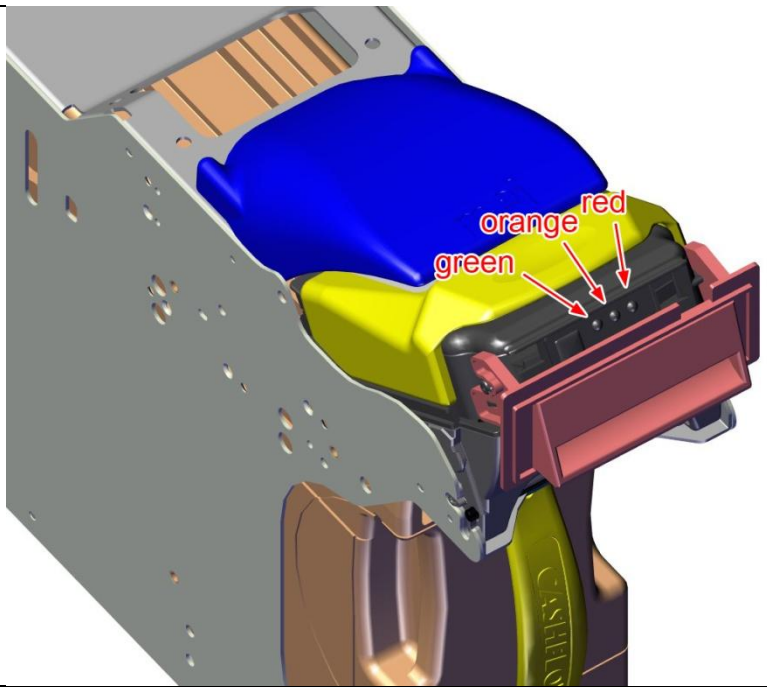
6.7 EPP

Settings and Indicators	Description
Power, DC input	• LED1 on control board always in solid green
Control board CPU/Firmware	• LED5 on control board always blinking in green
Key press action	• LED2 on control board: no light at idle state, but blinking in red when key is pressed
Jumper J1 firmware download	• Two pins not shorted
Jumper J2 NVRAM clear	• Two pins not shorted
Order of LEDs and jumpers	• LED1-J3-J1-J2-LED4-LED2-LED3-LED5
	

6.8 LCD/Touch

Settings and Indicators	Description

6.9 Bill Acceptor

Settings and Indicators	Description
• MEI SCNXL66 bill acceptor with 2200-note cashbox	
• LED Green is blinking when it is normal and ready	

- LED error codes

MMI Diagnostic LED Codes:

Red conditions - Hard Fault. One of the note acceptor components needs to be replaced.
Yellow condtions - Soft Fault The operator can correct the issue at the machine.
Green conditions - No Fault No problem with the note acceptor.

EASITRAX Soft Count Diagnostic Codes (MMI LED)		
LED Indicator	**Status**	**You need to...**
Green(Left) - Off Yellow(Center) - Off Red(Right) - 4 Flashes	Asset number mismatch betweeen machine and cashbox RF tag	Insert cashbox with matching or blank asset number.
Green(Left) - Off Yellow(Center) - Off Red(Right) - 5 Flashes	RF tag not found	Insert cashbox with an RF tag.
Green(Left) - Off Yellow(Center) - Off Red(Right) - 6 Flashes	RF tag communication errror	Reseat cashbox or replace with a cashbox that has another RF tag.
Green(Left) - Off Yellow(Center) - Off Red(Right) - 7 Flashes	Asset number not found	Enter an asset number into the acceptor head using STS.
Green(Left) - Solid Yellow(Center) - Solid Red(Right) - Solid	Checking tag status	Wait 5 seconds to determine if Antenna PCB is found. If not found, replace Antenna PCB.
Green(Left) - Flash Yellow(Center) - Flash Red(Right) - Flash	Checking tag status	Wait 5 seconds to determine if Antenna PCB is found. If not found, replace Antenna PCB.
Green(Left) - Solid Yellow(Center) - Off Red(Right) - Off	Normal	Take no action.
Green(Left) - 1 Flash Yellow(Center) - Off Red(Right) - Off	Disabled by machine interface	Fix the machine interface (i.e. check connection).
Green(Left) - Solid Yellow(Center) - Solid Red(Right) - Off	Normal and cashbox cleaning recommended	Replace with a clean cashbox
Green(Left) - 1 Flash Yellow(Center) - 1 Flash Red(Right) - Off	Disabled by machine interface and cashbox cleaning recommeneded	Fix the machine interface (i.e. check connection) and replace with a clean cashbox.
Green(Left) - Off Yellow(Center) - Solid Red(Right) - Off	Cashbox not seated or not present	Reseat the cashbox.
Green(Left) - Off Yellow(Center) - 1 Flash Red(Right) - Off	Poor acceptance	Clean the acceptor head.
Green(Left) - Off Yellow(Center) - 2 Flashes Red(Right) - Off	Jam in the acceptor	Clear the jam from the note acceptor.
Green(Left) - Off Yellow(Center) - 3 Flashes Red(Right) - Off	Jam in the cashbox	Remove the acceptor head and clear the jam from the cashbox.
Green(Left) - Off Yellow(Center) - 4 Flashes Red(Right) - 4 Flashes	Cashbox cleaning required	Replace with a clean cashbox.
Green(Left) - Off Yellow(Center) - 8 Flashes Red(Right) - 8 Flashes	Security timeout	Wait for timeout to expire.
Green(Left) - Off Yellow(Center) - Off Red(Right) - Solid	Cashbox full	Replace with an empty cashbox.
Green(Left) - Off Yellow(Center) - Off Red(Right) - 1 Flash	Acceptor hardware fault	Replace the acceptor head with a programmed spare.
Green(Left) - Off Yellow(Center) - Off Red(Right) - 2 Flashes	Interface board hardware fault	Replace the interface board.
Green(Left) - Off Yellow(Center) - Off Red(Right) - 8 Flashes	Note timeout	Wait for timeout to expire.
Green(Left) - Solid Yellow(Center) - Solid Red(Right) - Solid	Unprogrammed unit/Generic unit	Program unit with a service tool.
Green(Left) - Flash Yellow(Center) - Flash Red(Right) - Flash	Unprogrammed unit/Generic unit	Program unit with a service tool.

6.10 Flickers and Lights

Settings and Indicators	Description
Flicker, EMV card reader	• No light at idle state; blinking in RGB color while accepting card
Flicker, Receipt printer	• No light at idle state; blinking in RGB color while presenting receipt
Flicker, EPP	• No light at idle state; in solid RGB color while accepting key action
Flicker, Cash dispenser	• No light at idle state; blinking in RGB color while presenting cash
Flicker, Bill acceptor	• No light at idle state; blinking in RGB color while accepting bill/ticket
Light, Cash tray	• No light at idle state; solid in RGB color while presenting cash

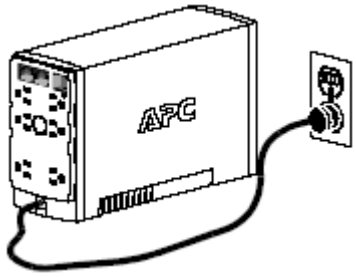
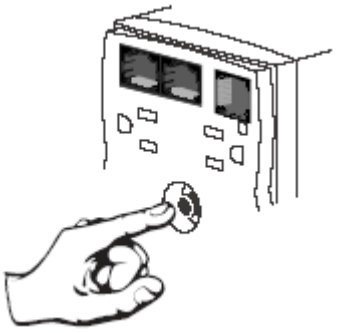
7. Quick Troubleshooting

7.1 System Power

Problem	Procedure
No power to system``	• Check the UPS to confirm that ***LED light is in solid green*** • Check the main power supply to make sure that the power switch is pressed to ON position, i.e., ***the light on switch button is ON*** • Check power cords from wall to main power supply to make sure that cable connector is securely plugged • Check the AC extension cord to make sure that it is securely plugged

7.2 UPS APC 350

The troubleshooting in this section comes from User's Manual of manufacturer APC (www.apc.com).

Problem	Procedure	
Back-UPS will not switch on Back-UPS not connected to an AC power source.	• Check that the Back-UPS power plug is securely connected to the wall outlet.	
Back-UPS will not switch on Back-UPS circuit breaker "tripped".	• Disconnect non-essential equipment from the Back-UPS. Reset the circuit breaker (located on the rear panel of the Back-UPS) by pushing the circuit breaker button fully inward until it catches. If the circuit breaker resets, switch the Back-UPS on and reconnect the equipment one-at-a-time. If the circuit breaker trips again, it is likely that one of the connected devices is causing the overload.	
Back-UPS will not switch on Very low or no AC voltage.	• Check the wall outlet that supplies power to the Back-UPS using a table lamp. If the lamp bulb is very dim, have the AC voltage checked by a qualified electrician.	
Back-UPS does not power computer/monitor/external drive during an outage Internal battery is not connected.	• Check the battery connections. (See Connect the Battery" under "Installation" on the front page of this document.	
Back-UPS does not power computer/monitor/external drive during an outage Computer, monitor or external disk/	• Move computer, monitor, or external drive power cord plug to the Battery Backup outlets.	

CD-ROM drive is plugged into a Surge Only outlet.		
Back-UPS operates on battery although normal AC voltage exists Back-UPS circuit breaker "tripped".	• Disconnect non-essential equipment from the Back-UPS. Reset the circuit breaker (located on the rear panel of the Back-UPS) by pushing the circuit breaker button fully inward until it catches.	
Back-UPS operates on battery although normal AC voltage exists The wall outlet that the Back-UPS is connected to does not supply AC power to the unit.	• Connect the Back-UPS to another wall outlet or have a qualified electrician check the building wiring.	
Back-UPS does not provide expected backup time Back-UPS is excessively loaded.	• Unplug non-essential Battery Backup connected equipment, such as printers and plug them into Surge Only outlets. **Note**: Devices that have motors or dimmer switches (laser printers, heaters, fans, lamps, and vacuum cleaners, for example) should not be connected to the Battery Backup outlets.	
Back-UPS does not provide expected backup time Back-UPS battery is weak due to recent outage and has not had time to recharge.	• Charge the battery. The battery charges whenever the Back-UPS is connected to a wall outlet. Typically, eight hours of charging time are needed to fully charge the battery from total discharge. Back-UPS run-time is reduced until the battery is fully charged.	
Back-UPS does not provide expected backup time Battery requires replacement.	• Replace battery (see Order Replacement Battery). Batteries typically last 3-6 years, shorter if subjected to frequent power outages or elevated temperatures.	
A red indicator is lit Battery is not connected properly.	• Check the battery connections. Consult "Connect the Battery" under "Installation" on the front page of this document. It shows how to access the battery and connect the wires.	
A red indicator is lit The Overload indicator is lit if equipment connected to the Battery Backup outlets is drawing more power than the Back-UPS can provide.	• Move one or more equipment power plugs to the Surge Only outlets.	
A red indicator is lit Battery requires replacement.	• The battery should be replaced within two weeks (see "Order Replacement Battery"). Failure to replace the battery will result in reduced run-time during a power outage.	
Red indicators are flashing	• Call SEIT Technical Support for service.	

Back-UPS failure.		
Replace Battery indicator lit and an alarm sounds when the Back-UPS is turned on Internal battery not connected.	• Check the battery connections. Consult "Connect the Battery" under "Installation" on the front page of this document. It shows how to access the battery and connect the wires.	

8.1 System Power

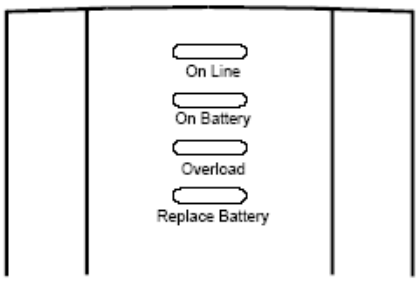
Problem	Diagnostics
Failure to switch on when its power button is pressed	• Check the AC cord connection to its power source
Failure to get power from UPS to devices	• Check AC output cord on UPS rear for loose connection • Check power switch on main power supply ○ Switch should be depressed at left side when it is switched ON

System power switches instantly OFF as soon as AC cord of UPS is removed from its AC power source	• Check the power cord of main power if it is plugged into battery backup side (at right side when seen from front)
	• Check the internal battery for its connection
	  ○ Access to internal battery locates at rear bottom
	  ○ Open the cover
	  ○ Check for connection of battery terminal

8.2 UPS

UPS Status Indicators and Alarms

There are four status indicators (lights) on the front panel of the Back-UPS (On Line, On Battery, Overload, and Replace Battery).



On Line (green) - is lit whenever AC power is powering the Battery Backup outlets.

On Battery (yellow) - is lit whenever the battery of the Back-UPS is powering equipment connected to the Battery Backup Outlets.

Four Beeps Every 30 Seconds - this alarm is sounded whenever the Back-UPS is running On Battery. Consider saving work in progress.

Continuous Beeping - this alarm is sounded whenever a low battery condition is reached. Battery run-time is very low. Promptly save any work in progress and exit all open applications. Shutdown the operating system, computer and the Back-UPS.

Overload (red) - is lit whenever power demand has exceeded the capacity of the Back-UPS.

Continuous Tone - this alarm is sounded whenever the Battery Backup outlets are overloaded.

Circuit Breaker - the circuit breaker button located on the rear panel of the Back-UPS will stick out if an overload condition forces the Back-UPS to disconnect itself from AC power. If the button sticks out, disconnect non-essential equipment. Reset the circuit breaker by pushing the button inward.

Replace Battery (red) - is lit whenever the battery is near the end of its useful life, or if the battery is not connected (see above). A battery that is near the end of its useful life has insufficient run-time and should be replaced.

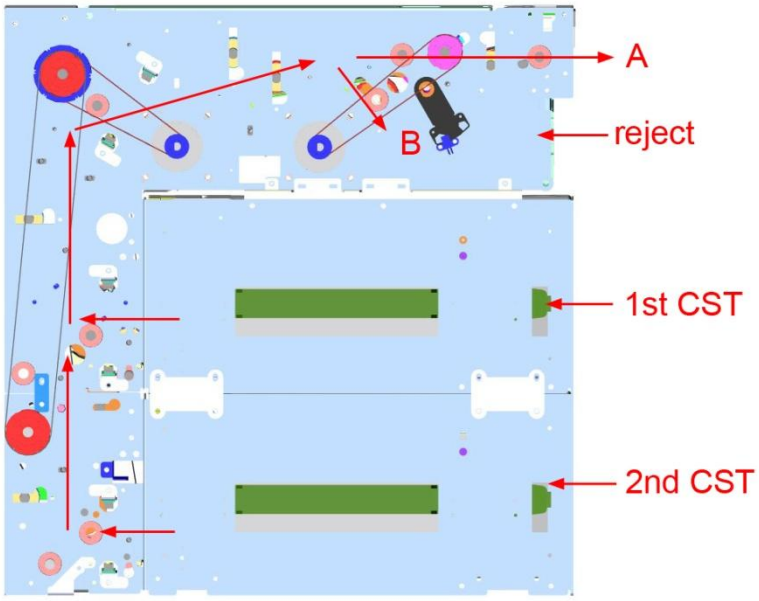
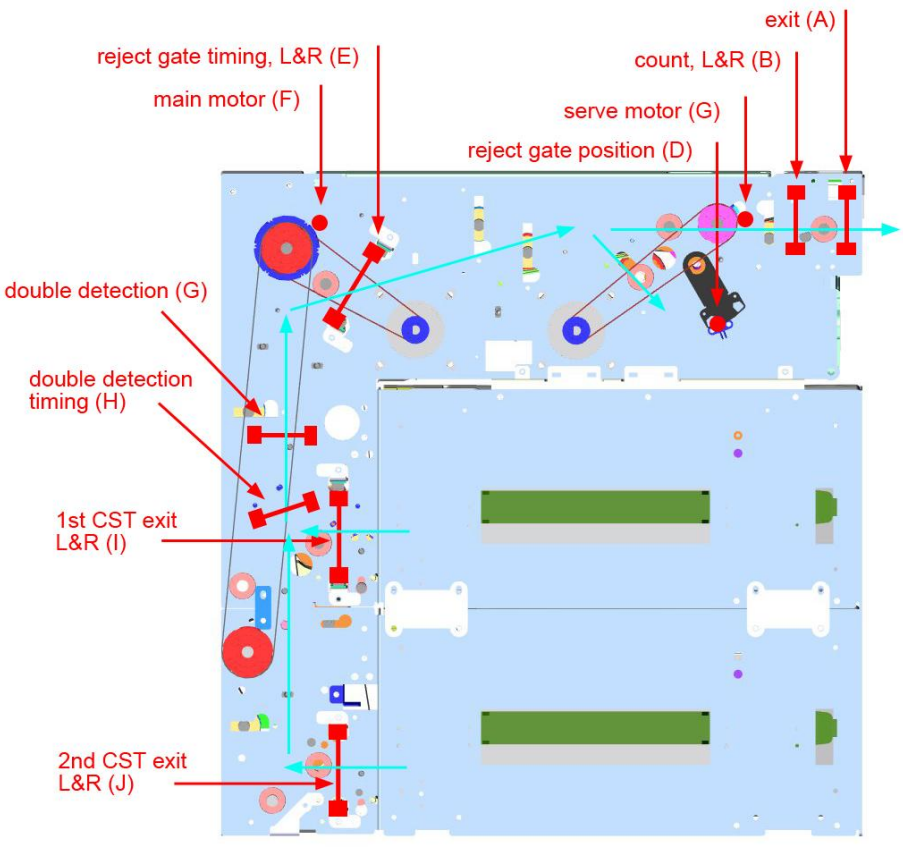
Chirps for 1 Minute Every 5 Hours - this alarm is sounded whenever the battery has failed the automatic diagnostic test.

8.3 PC Unit

Problem	Diagnostics
Failure to boot	• Press power switch on PC rear • Check AC cable at PC rear for loose connection • Check AC cable at main power supply for any loose connection
Failure to start Windows	•

8.4 LCD and Touch

Problem	Diagnostics
Blank screen	• Check the PC unit for its proper working • Check video cable for its connections at PC rear and AD board • Check power LED of OSD board for green light
Touch not responding	• Reseat USB cable to touch at PC •

Problem	Diagnostics
• Note path from cassette to cash tray (**A**) or reject (**B**)	
• Sensors along the note path	

Error Code	Error Description and Diagnostics

C0000	Normal
C0012	Reject gate timing sensor (E) blocked
	1. check the sensor RIGHT/LEFT for any blockage 2. Check the sensor for its proper working 3. check cable from the sensor to MAIN B/D for any damage or loose connector 4. measure sensor voltage - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace GATE sensor when the voltage is not in the normal range 5. replace Main B/D
C0021	Double detection timing sensor (H) blocked
	1. check the sensor for any blockage 2. Check the sensor for its proper working 3. Check the cable from sensor to MAIN B/D for any damage or loose connector 4. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace DBL sensor when the voltage is not in the normal range 5. replace Main B/D
C0022	1st CST exit sensor (I) blocked
	1. check the sensors RIGHT/LEFT for any blockage and belt for any interference 2. check sensor for its proper working 3. check cable from Inlet sensor to MAIN B/D for any damage or loose connector 4. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Inlet sensor when the voltage is not in the normal range 5. replace Main B/D
C0028	CDU presenter exit sensor (A) to cash tray blocked at dispensing
	1. check the sensor for nay blockage 2. Check sensor for its proper working 3. Check cable from Outlet sensor to MAIN B/D for any damage or loose connector 4. Measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Outlet sensor when the voltage is not in the normal range 5. Replace Main B/D
C0030	Main motor (F) failure to run
	1. check the belt for proper engagement 2. check cable for any damage or loose connector 3. Checkencoder for any blockage 4. Checkencoderslit for any damage 5. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty <YELLOW CABLE> - normal range of 2~5 V when blocked <YELLOW CABLE> replace encoder when the voltage is not in the normal range 6. replace Main B/D

C0031	Serve motor (G) failure to run
	1. check the belt for proper engagement 2. check cable for any damage or loose connector 3. Checkencoder for any blockage 4. Checkencoderslit for any damage 5. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty <YELLOW CABLE> - normal range of 2~5 V when blocked <YELLOW CABLE> replace encoder when the voltage is not in the normal range 6. replace Main B/D
C0032	2nd CST exit sensor (J) blocked
	1. check the sensors RIGHT/LEFT for any blockage and belt for any interference 2. check sensor for its proper working 3. check cable from Inlet sensor to MAIN B/D for any damage or loose connector 4. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Inlet sensor when the voltage is not in the normal range 5. replace Main B/D
C0035	Notes detected at reject gate (D) after retracting action.(Jamming at Reject gate during retracting)
C0036	CDU presenter exit sensor (A) to cash tray blocked at initializing
	1. check the sensor for any blockage 2. Check sensor for its proper working 3. Check cable from Outlet sensor to MAIN B/D for any damage or loose connector 4. Measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Outlet sensor when the voltage is not in the normal range 5. Replace Main B/D
C0037	Double detection sensor (G) failure to run
	1. checkdouble detection B/D LED for ON/OFF flickering <normal when LED 1 is ON> 2. when LED 2 is OFF: check cable from MAIN B/D to ULTRASONIC B/D for any damage or loose connector - when LED 2 is ON: check the sensor for any blockage 3. Replacedouble detection B/D 4. Replace Main B/D
C0039	Reject gate (D) failure to run
	1. checksolenoid for any interference 2. Checkgate for any damage or interference 3. Checksensor for any blockage and swinging lever for any damage or interference 4. check cable from main B/D to solenoid for any damage or loose connector 5. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty <YELLOW CABLE> - normal range of 2~5 V when blocked <YELLOW CABLE> replace sensor when the voltage is not in the normal range 6. replace Main B/D
C003A	More than 4 notes requested in test mode

	1. replace Main B/D
C003B	2nd CST exit sensor blocked when initializing or dispensing
C0041	Fails to dispense in 5 retrials
	1. check note inside cassette for any interference by foreign object 2. check gears inside cassette for any debris between gear teeth 3. check rollers inside cassette for any damage 4. check push plate for any interference 5. check cassette exit path for any blockage 6. replace cassette
C0043	Number of rejected notes exceeded 20 notes
	1. check sensor cable for any loose connector - receiver: YELLOW, BLACK cables - transmitter: RED, BLUE cables 2. replace double B/D 3. replace Main B/D
C0044	10 notes rejected consecutively
	1. check sensor cable for any loose connector - receiver: YELLOW, BLACK cables - transmitter: RED, BLUE cables 2. replace double B/D 3. replace Main B/D
C0045	Note miscount detected (#note requested <# note counted)
	1. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace sensor when the voltage is not in the normal range 2. Replace Main B/D
C0046	Exit sensor (A) blocked when initializing (Note jam at Exit when initializing)
C0047	1st cassette failure to pickup
	1. check note inside cassette for any interference by foreign object 2. Check gears inside cassette for any debris between gear teeth 3. Check rollers inside cassette for any damage 4. Check push plate for any interference 5. Check cassette exit path for any blockage 6. Replace cassette
C0048	Note-jam occurs at Reject gate (D) during initializing. (Note jam at Reject when initializing)
C0049	Zero note requested
	1. CDU ROM VERSION CHECK. - 1 CST CDUU11V normal - 2 CST CDUU21V normal - 3 CST CDUU31V normal - 4 CST CDUU41V normal 2. replace Main B/D
C004A	Jam is detected at 1st cassette exit (I) during dispensing (Note jam at Inlet(I) of 1st cassette)

	1. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 Mv at empty - normal range of 2~5 V when blocked replace sensor when the voltage is not in the normal range 2. Replace MAIN B/D
C004D	1st cassette not detected
	1. check 1st CST for its home position 2. check cable from MAIN B/D to 1st CST for any damage or loose connector 3. replace cassette 4. replace Main B/D
C004E	2nd cassette not detected
	1. check 2nd CST for its home position 2. check cable from 2nd feed module B/D to 2nd CST for any damage or loose connector 3. check cable from 2nd feed module B/D to main B/D for any damage or loose connector 5. replace cassette 6. replace Main B/D
C004F	More than 65 seconds passed at dispensing
	1. CDU ROM VERSION CHECK. - 1 CST CDUU11V normal - 2 CST CDUU21V normal - 3 CST CDUU31V normal - 4 CST CDUU41V normal 2. replace Main B/D
C0050	Power failure during dispense
	1. check power cable for any damage or loose connector 2. Replace Main B/D 3. Replace MAIN POWER SUPPLY
C0051	Dispense of more than 150 notes requested
	1. check if more than 150 notes are requested
C0052	1st CST exit sensor (I) blocked after dispensing
	1. checksensors RIGHT/LEFT for any blockage 2. check sensor for its proper working 3. check cable from sensor to main B/D for any damage or loose connector 4. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Inlet sensor when the voltage is not in the normal range 5. replace Main B/D
C0054	Double note detected
	1. check notes for being sticking together 2. Check gears inside cassette for any debris between gears 3. Check rollers inside cassette for any damage 4. Check note exit slit for any sticky surface 5. Replace cassette 6. Replace Main B/D

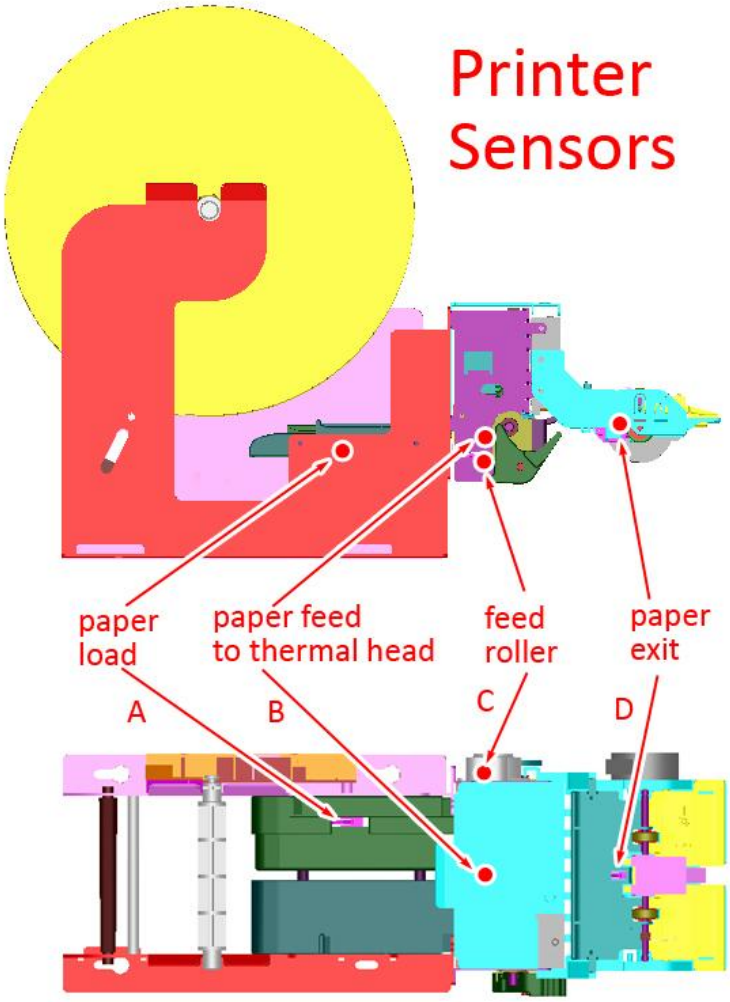
C0056	Reject gate (D) failure
	1. checksolenoid for any interference 2. Checkgate for any damage or interference - check encoder for any blockage and swinging lever for any damage or interference 4. check cable form main B/D to solenoid for any damage or loose connector -check cable from main B/D to encoder for any damage or loose connector 5. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty <YELLOW CABLE> - normal range of 2~5 V when blocked <YELLOW CABLE> replace encoder when the voltage is not in the normal range 6. Replace Main B/D
C0058	Note count mismatch (# note at CST exit<# note at count)
	1. check cables from main B/D to sensor for its proper connection 2. replace Main B/D
C0059	Note jam occurred while initializing
	1. check note path for any jam 2. Check note for any interference or blockage 3. Check belt for its proper engagement 4. Replace CDU
C005B	2nd cassette failure to pickup
	1. check note inside cassette for any interference by foreign object 2. Check gears inside cassette for any debris between gear teeth 3. Check rollers inside cassette for any damage 4. Check push plate for any interference 5. Check cassette exit path for any blockage 6. Replace cassette
C006A	Note from 2nd CST not arriving at double timing sensor (H)
	1. checksensor (H) for any blockage 2. check sensor for its proper working 3. check cable from sensor to main B/D for any damage or loose connector 4. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Inlet sensor when the voltage is not in the normal range 5. replace Main B/D
C0080	2nd cassette exit sensor (J) blocked after dispensing
	1. checksensors RIGHT/LEFT for any blockage 2. check sensor for its proper working 3. check cable from sensor to main B/D for any damage or loose connector 4. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Inlet sensor when the voltage is not in the normal range 5. replace main B/D
C0081	Double detection timing sensor (H) blocked during dispensing
	1. checksensor for any blockage

	2. check cable from DBL sensor to main B/D for any damage or loose connector 3. Measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace sensor when the voltage is not in the normal range 4. Replace main B/D
C0082	Note from cassette not arriving at double timing sensor (H)
	1. check cables from cassette exit to double timing sensor for any damage of loose connector 2. Check belt for its proper engagement 3. Check cable from sensor to feed module B/D for any damage or loose connector 4. Measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Inlet sensor when the voltage is not in the normal range 5. Replace Main B/D
C0083	Reject gate timing sensor(E-LEFT), blocked during dispensing
	1. checksensor LEFT for any blockage 2. check cable from sensor to main B/D for any damage or loose connector 3. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Gate sensor when the voltage is not in the normal range 4. replace Main B/D
C0084	Reject gate timing sensor(E-RIGHT), blocked during dispensing
	1. checksensor RIGHT for any blockage 2. check cable from sensor to main B/D for any damage or loose connector 3. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace Gate sensor when the voltage is not in the normal range 4. replace Main B/D
C0085	Note not arriving at reject gate timing sensor (E-LEFT)
	1. check note path for any jam 2. check note for any interference or blockage 3. check belt for its proper engagement 4. replace CDU
C0086	Note not arriving at count sensor (B) during dispensing
	1. check note path for any jam 2. check belt for its proper engagement 3. check note path structure for any damage 4. Checkreject gate for any interference or damage 5. Checkbelt and gear for its proper engagement 6. measure sensor voltage <transmitter normal range of 1~3V> - normal range of 50~250 mV at empty - normal range of 2~5 V when blocked replace sensor when the voltage is not in the normal range 7. replace Main B/D

8.6 EMV Card Reader

Problem	Diagnostics

8.7 Receipt Printer



Problem	Diagnostics
Failure to detect paper	• Check the paper load sensor (A) if the sensor is displaced or dislocated from its mounting base

	• Check the sensor cable to control board for any loose connection
Failure to print message	• Check the paper for its correct loading • Thermal coated side of paper faces up while feeding (paper type of CSO) • Check the ribbon cable from control board to thermal head for any loose or skewed connection • Check the thermal head for its proper working and replace it

Failure to feed paper	• Check the paper feed roller and cutter lower support for loose lever
	• Check the feed roller sensor (C) for its proper working
	• Check the sensor cable to the control board
	• Check the motor of feed roller for its proper working, i.e., gear of the roller rotating
	• Check cables from the control board to sub-board for any loose connection
	• Remove paper fully out of its path by releasing the paper feed and cutter lower support
	  ○ Lock the paper feed and cutter lower support in position
	  ○ Cut the paper end straight
	  ○ Feed the paper
	• Check the paper feed sensor (B) for any loose connection

Failure to discharge receipt	• Check exit path for any paper jam • Check paper exit sensor (D) for its proper working • Check the roller of exit motor for its proper working • Check cables from motor/sensor to sub-board and all the way to control board for any loose connection
Thermal head overheating	• Check the thermal head
Cutter failure to cut paper	• Check the cutter module for its proper working • Check the movement of cutter blade by manually rotating the gear mechanism for any interference
Cutter failure to return to home position	• Check the movement of cutter blade by manually rotating the gear mechanism for any interference •

8.8 Bill Acceptor

Problem	Diagnostics

8.9 Encrypting PIN Pad (EPP)

NOTE: Do not remove EPP from the bezel until its mode is switched to Maintenance mode.

Problem	Diagnostics

Not responding to key press	• Check LED of power on its rear for green light
	• Check LED of CPU on its tear for blinking in green
	  ○ No light on CPU LED means that removal protection mechanism is triggered
	  ○ EPP should be replaced

	•

8.10 Coin Hopper

Problem	Diagnostics
Failure to open COM port (COM5) and get status of each coin hopper	• Check coin control board for LED light of DC power • Check cable to each hopper for any loose connection
Failure to dispense coin	• Check the coin hopper for any jam • Check if the hopper is empty • Check coin drop path for any blockage

8.11 Main Power Supply

Problem	Diagnostics
No light on ON/OFF switch	• Check AC input cable to power supply for any loose connection • Check AC input cable connection to the wall outlet or UPS
No AC power to PC unit	• Check AC OUT cord on top of power supply for any loose connection • Check AC IN cord to PC rear for any loose connection • Check power switch on both power supply and PC unit
No DC power to devices	• Replace power

8.12 Indicator Lights

Problem	Diagnostics
No light	• Check cable connection from SIC board to flicker board • Check the light signal with flicker board of working condition

8.13 Speakers

Problem	Diagnostics
No sound	• Check cable of sound out at PC rear • Check sound cables at SIC board • Replace speaker

8.14 ADA Earphone Jack

Problem	Diagnostics
No sound	• Check cable from SIC board to ADA board • Replace ADA board

9. Device Replacement

It describes a procedure of replacing individual device from the system. Replacing module itself is easy and simple in overall procedure and takes less time than diagnosing the problem deep into component level.

In most cases, it involves with

- Disconnecting power and data cable from the device
- Removing screws from its device mounting bracket or base
- Testing the device for its normal operation

10. Component Replacement

It describes a procedure of replacing components from individual device. Replacing component is more difficult and complicated in details than replacing device itself. Therefore, the component replacement will be limited to certain devices in which (1) the component replacement is pretty easy and simple, (2) the failure of component is clearly identified and (3) shipping and handling of device is vulnerable to damage.

In most cases, it involves with

- Disconnecting main power and data cable from the device
- Disconnecting cables in components
- Removing screws from its component mounting bracket or base
- Checking configuration settings of component
- Adjusting alignment of component to the device body or case
- Testing the device for its normal operation