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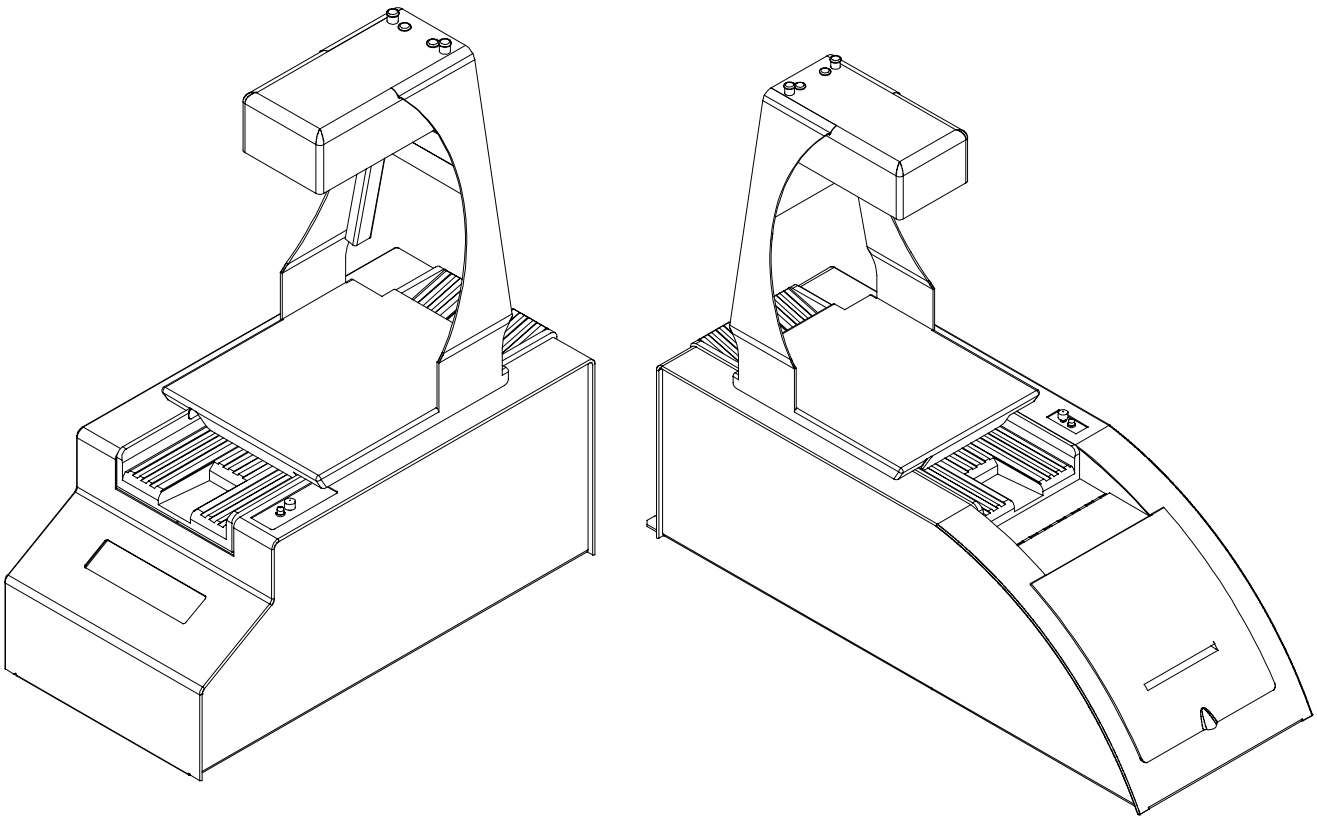
P/N: 71U-1409-100K, REV M1

Installation and Operator's Manual



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FCC Emission Interference

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by Unimark could void the operator's authority to operate the equipment under these conditions and rules.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own cost.

1.0 Introduction:

The Express Check 2000 and 2000se compact Boarding Gate Reader or BGR (hereafter referred to as the Unit) is a series of small footprint, fast, and versatile magnetic airline coupon readers, incorporating internal and externally connected options for bar code scanning, credit card mag and smart card reading, OCR reading, receipt printing, and keypad/display interfaces. The Unit incorporates an RS-232 Asynchronous Serial Communication port to interface to the host system. The host system interface port is configured as a DCE unit allowing for a straight 1:1 connection to a DTE host system.

The Unit is designed to fit into airline podiums or to sit on top of counters utilizing a minimum of counter space.

The Unit transport mechanism accepts full size ATB coupons, the ATB flight coupon section, the ATB boarding pass stub, and Wallet type coupons in any of these configurations.

The coupon is drawn into the transport mechanism through the Unit's front chute. The Unit accepts ATB coupons in two directions with the ATB coupon's printed side face up, reading both right or left directions. The Unit extracts magnetically encoded data from the coupon, uploads the data to the host system, and automatically ejects it out the rear of the Unit.

The EC2000se adds the ability of parking the coupon within the unit while waiting for a host response, then either ejecting it out the opposite side for a valid passenger or rejecting it back out the side inserted for an invalid passenger, wrong seat assignment, or other mismatched information for the boarding flight. The EC2000se also adds a RESET switch to allow the operator to manually reject an inserted coupon.

The Unit uses an internal audible alarm to provide audible pass or fail indications when reading ATB mag or bar code data (exact function depends on the firmware version). The bar code scanner module also has an internal audible alarm, which sounds when a bar code has been scanned.

The Unit uses GREEN and RED LEDs, which provide visible pass or fail indications when reading ATB mag or bar code data (exact function depends on the firmware version). These indicators may also be used to alert the operator to other conditions, which are not directly related to ATB or bar code reading operations.

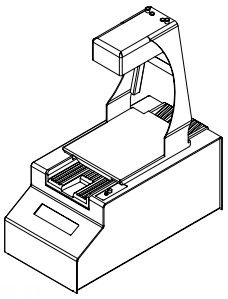
The bar code scanner is used to read 1D/2D bar codes on ATB boarding pass or E-Ticket coupons. This bar code typically represents the PNR number or some other critical data, which will allow the host system to identify the passenger.

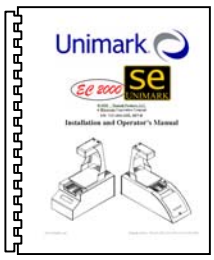
Units with receipt printing capability can provide on the spot printing of basic boarding passes, coupons, and other airline related documents. The display option provides visible feedback of processes being performed and the status of the Unit.

The Unit uses an auto-switching power supply, which allows automatic operation in both 110 and 220VAC environments.

2.0 Items Included:

1. EC2000 Unit.
2. AC Power Cord.
3. Manual or Product CD.
4. Optional items such as ticket catchers, back covers, interface cables & adaptors and receipt roll paper if applicable.





3.0 Installation

3.1 Unpacking

Open the top side of the shipping carton. Remove the top packing foam and the accessory box. Lift the Unit from the box, ensuring a firm grip on the main enclosure. Retain original shipping carton and packaging for future use.

The scanner mount should not be used to lift the Unit.

3.2 Location and Set-up

The Unit can be installed into any standard or specialized airline podium. Its compact size allows the Unit to sit on top of a podium or counter surface if appropriate for the application.

The Unit must be installed on a flat and stable surface. **Securing/mounting options are available**.

Do not install the Unit where it will be directly exposed to sunlight. Although the optical stock sensor(s) are located to shield them from light sources, sunlight may affect their functionality.

Sunlight will also affect the bar code scanner's ability to read boarding passes or properly lock onto the scan stand symbol for 2D based units.

3.3 Plugging into the Unit

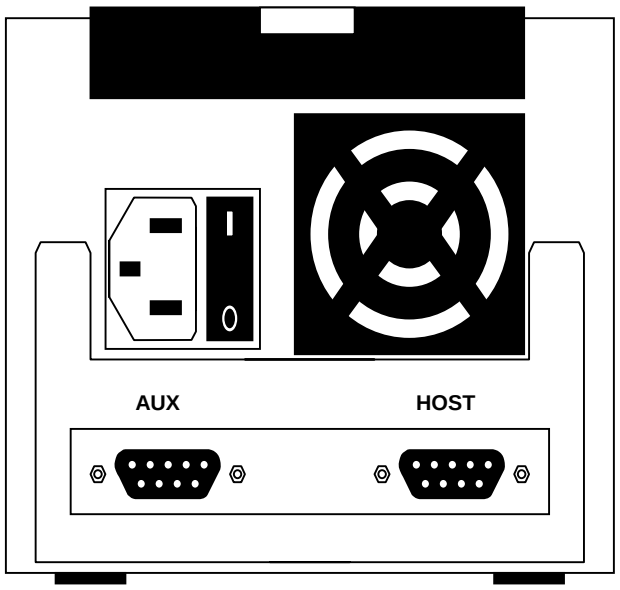
The Unit has the following physical connections:

1. An IEC 320 power connection accepting 110/220VAC (50/60Hz).

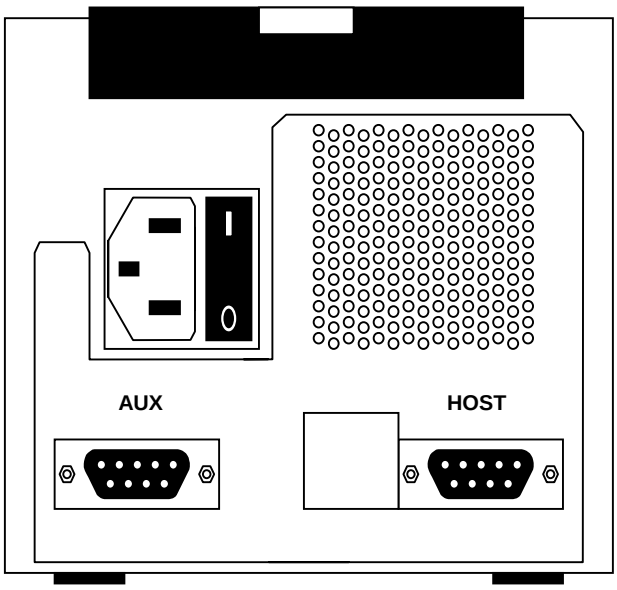
   The Unit must be installed into a properly grounded outlet to comply with electrical safety standards.

2. A Host RS-232 interface connection. This connector is a DB-9 female pin connector and is configured as DCE. A simple straight 1:1 cable quickly interfaces the Unit to a standard connection on a typical PC based host system.

3. An auxiliary (AUX) RS-232 interface connection. This connector is a DB-9 female pin connector also configured as a DCE. It is provided for option interface.



EC2000 Back Panel



EC2000se Back Panel

4.0 Host Interface Specifications

4.1 Hardware Interface

The Unit uses an RS-232 Asynchronous Serial Communications port to interface to the Host system. The physical connection is provided using a single DB-9 female pin connector marked HOST. The Unit is configured as a DCE unit and connects to an associated DTE host using a straight 1:1 cable (assuming the host system uses a corresponding DTE DB-9 connector). The pin-out below provides the basic cabling requirements to connect the Unit to a PC type host system.

Pins 1 and 9 are not required connections.

Host (DTE) PC/AT or equivalent		Signal Flow	**EC2000/2000se (DCE)**	
Pin #, DB-9	Signal Name		Signal Name	Pin #, DB-9F
1	CD	N/A	EC2000: Frame GND EC2000se: Signal GND	1
2	RxD	⇐	TxD	2
3	TxD	⇒	RxD	3
4	DTR	⇒	DSR	4
5	Signal GND	N/A	SIGNAL GND	5
6	DSR	⇐	DTR	6
7	RTS	⇒	CTS	7
8	CTS	⇐	RTS	8
9	RING	⇒	EC2000: CTRL1 EC2000se: Not Connected	9

4.2 Data Structure

The Unit uses an asynchronous serial data transmission method. Data is sent based on any combination of the following:

Model	Baud Rate	Data Length	Parity	Stop Bit
EC2000	19200, 9600, 4800, 2400	8, 7	None, Even, Odd	2, 1
EC2000se	115200, 57600, 38400, 19200, 9600, 4800, 2400, 1200	8, 7	None, Even, Odd	2, 1

5.0 ASCII Control Character List (some characters available with certain firmware versions only)

ACK - Acknowledge character (06_{HEX}). Used to notify host or Unit that the previous message was received correctly.

BEL - BEL character (07_{HEX}). May be used to initiate a beep from the attached 1D bar code scanner when passed through to the connected device port.

CR - Carriage Return character ($0D_{HEX}$). Used in conjunction with LF to separate mag TRACK and BLOCK fields.

DC1 - XON character (11_{HEX}). Used to indicate that the host serial port is ready.

DC2 - (12_{HEX}). Used to initiate a dual tone beep from the attached 1D bar code scanner when passed through to the connected device port.

DC3 - XOFF character (13_{HEX}). Used to indicate that the host serial port is NOT ready.

ETX - End Of Text character (03_{HEX}). Used to suffix the PECTAB format table and commands being sent to the Unit. Used by the Unit to suffix mag data and command responses.

LF - Line Feed character ($0A_{HEX}$). Used in conjunction with CR to separate mag TRACK and BLOCK fields.

NAK - Negative Acknowledge character (15_{HEX}). Used to notify host or Unit that the previous message was NOT received correctly.

NUL - NULL pad character (00_{HEX}). Character is always ignored by the Unit unless it is being passed through to one of the device ports.

SOH - Start Of Header character (01_{HEX}). Sometimes used to prefix special commands or messages.

STX - Start Of Text character (02_{HEX}). Used to prefix the PECTAB format table and commands being sent to the Unit. Used by the Unit to prefix mag data and command responses.

6.0 ATB MAG Reading Operation

6.1 ATB Coupon Insertion

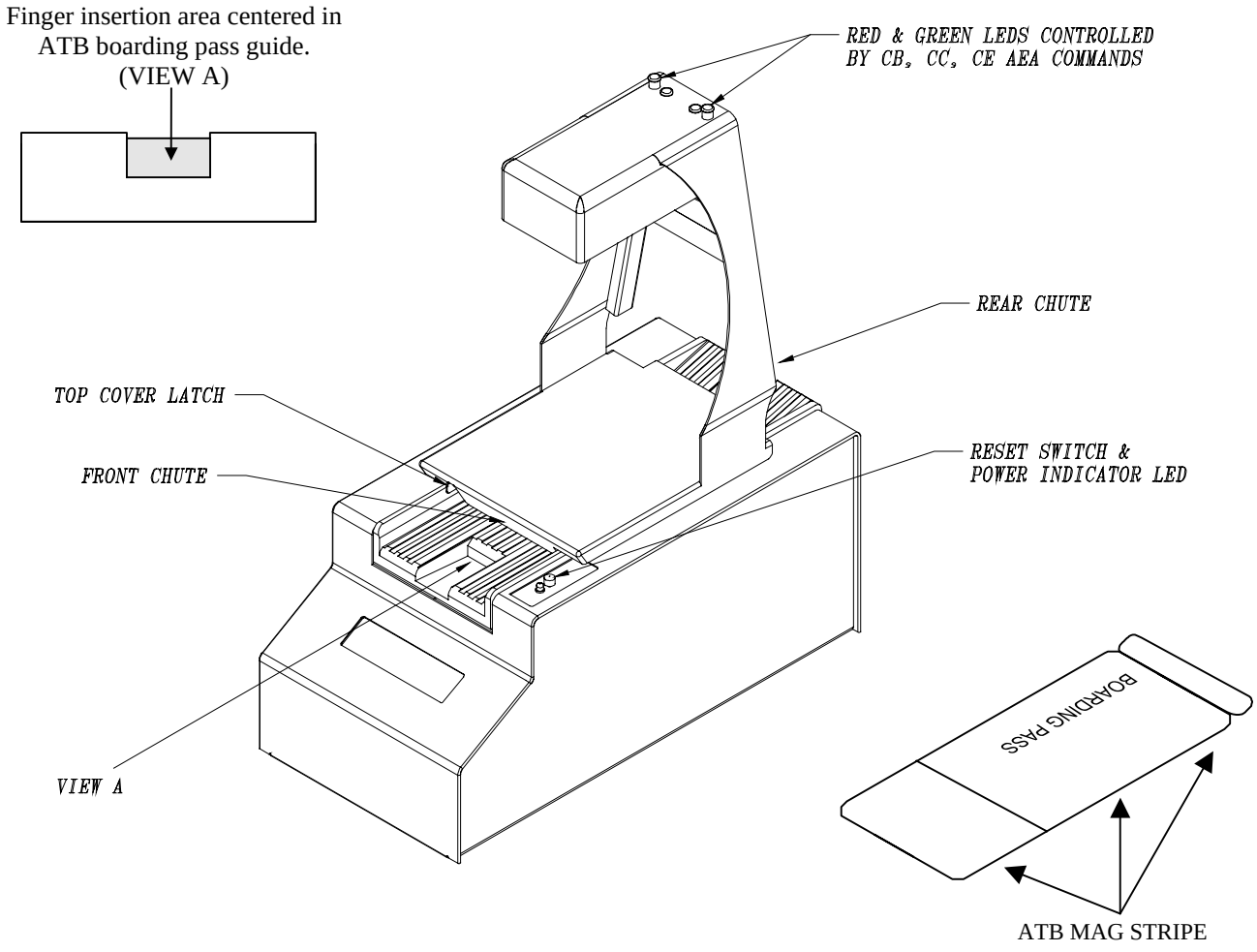
The Unit's transport mechanism accepts full size ATB coupons, the ATB flight coupon section, the ATB boarding pass stub, and Wallet type coupons. The coupon is inserted into the Unit as shown below. The coupon can be inserted either staple stub first or last with the coupon's printed side face up and the mag stripe down.

The EC2000 will pull the coupon in, read the magnetic data and transmit it to the host system, then continue processing it through the mechanism presenting it at the opposite chute.

The EC2000se will pull the coupon in, read the magnetic data and transmit it to the host system, then park the coupon inside the mechanism (so the operator cannot remove it without opening the Unit) and wait for the host to respond. Once the host responds the coupon will either be ejected (after receiving a CC command) or rejected back to the operator (after receiving a CB or CE command). Pressing the RESET switch next to the yellow power ON LED will also reject a coupon in the parked condition.

If a coupon is inserted upside down, the Unit will indicate an operation error. The error will be indicated using audible and/or visible indicators and will vary depending on the firmware version. In general, the RED LEDs are used to indicate read errors. An appropriate AEA error message (depending on the firmware version) is also sent back to the host system. The insertion of a non-mag or unencoded ATB coupon will produce similar results.

The ATB boarding pass stubs are the smallest part of the ATB coupon, and are therefore difficult to handle. The Unit's ATB front and rear chute is molded with a finger insertion area for ease of access to ATB boarding pass stubs.



6.2 ATB Coupon Jam Clearing

Occasionally, an ATB coupon will become jammed, especially in cases where multiple coupons get accidentally inserted or a coupon is accidentally folded over as shown below.

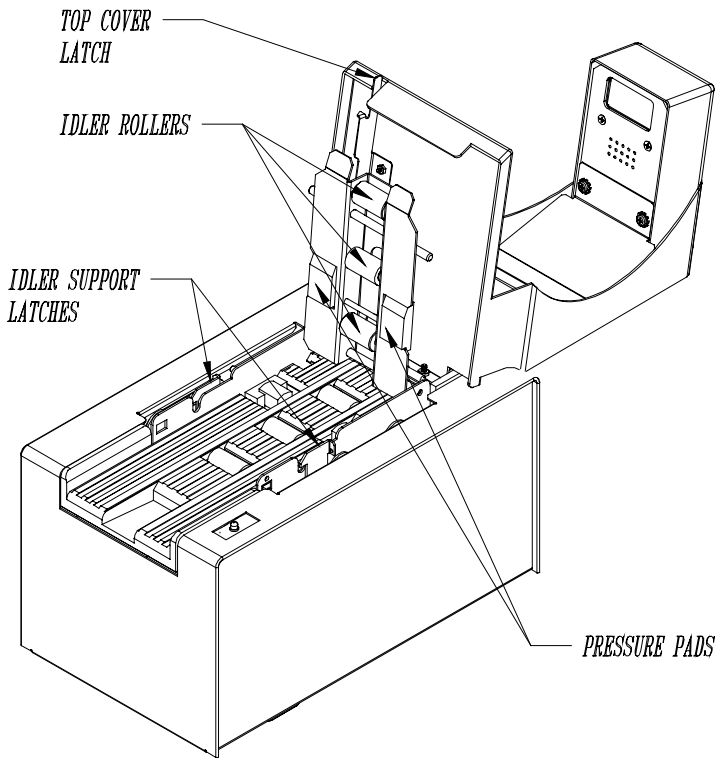
If an ATB coupon becomes jammed, perform the following steps to clear the Unit:

1. On EC2000se models, press the RESET switch and see if the Unit can automatically clear itself. Remove the rejected coupon.

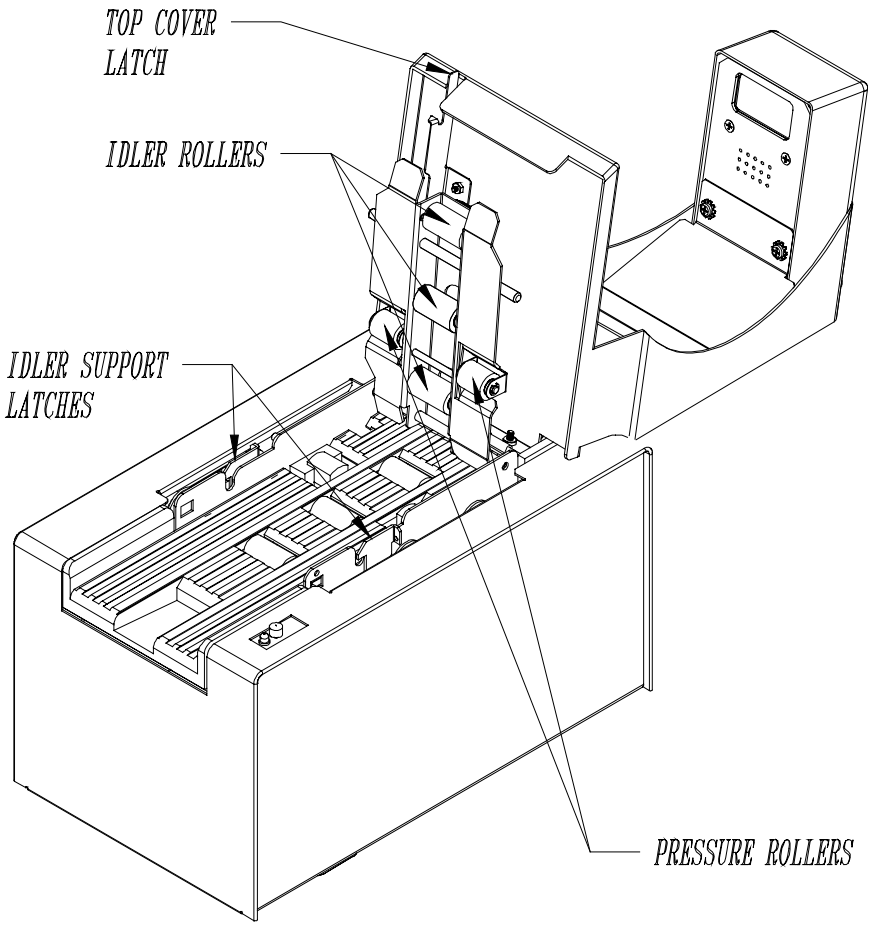
If the Unit cannot automatically clear the coupon, or an EC2000 model, proceed with the following:

The Unit can detect objects such as an operator's hand or clothing if either pass-through the sensor gaps when attempting to clear stock jams which could activate the stock movement coupon. Although the Unit is designed to be safely operated even with the top cover and idler assembly open, it is strongly recommended that the Unit be turned off and the power cord removed to eliminate any possibility of activating the motor when performing the following steps.

2. Move the top cover latch to the right and swing cover open (top cover may include a mounted bar code scanner).
3. Push down on the idler support latches (one on each side of the idler assembly).
4. Swing the idler assembly up and against the top cover.
5. Remove the ATB coupon.
6. For EC2000se models, verify that all idler rollers turn smoothly and spring up/down freely.
7. For EC2000 models, check idler rollers and pressure pads for free movement.
8. Close the idler assembly (by latching both sides) and the top cover to continue with operation.
9. **DO NOT** pull on the springs securing/mounting the mag head pressure pads (EC2000) or rollers (EC2000se).



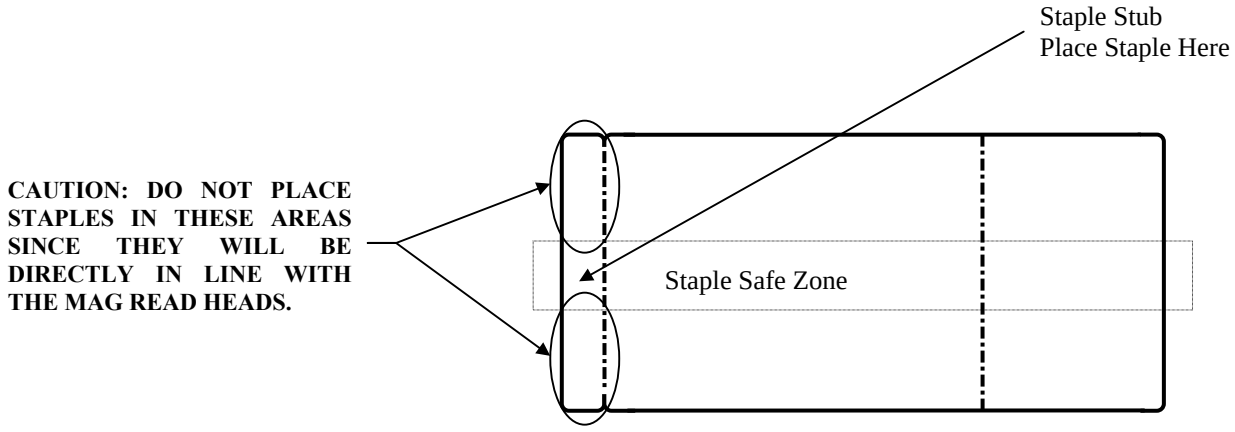
EC2000 With Original Pressure Pad Idler Assembly Shown



EC2000se With Pressure Rollers Shown

To avoid jams, follow these basic precautions:

1. Do not insert multiple coupons.
2. Do not insert torn or mangled coupons.
3. Do not insert any other kind of printout except ATB coupons.
4. Avoid inserting coupons which have staples in them. If this is unavoidable, make sure staples are placed in the center of the coupon. Staples placed at the top or the bottom of the coupon will cause damage to the MAG read heads.



6.3 Image Mode Operation

In this mode, the Unit transmits **all** data read from the ATB mag stripe. Exact format will vary depending on the firmware version (see basic example below):

[STX]
"Track 1/Block 1"[CR][LF] "Track 1/Block 2"[CR][LF] "Track 1/Block 3"[CR][LF]
"Track 2/Block 1"[CR][LF] "Track 2/Block 2"[CR][LF] "Track 2/Block 3"[CR][LF]
"Track 3/Block 1"[CR][LF] "Track 3/Block 2"[CR][LF] "Track 3/Block 3"[CR][LF]
"Track 4/Block 1"[CR][LF] "Track 4/Block 2"[CR][LF] "Track 4/Block 3"[CR][LF]
[ETX]

If the Unit correctly reads the ATB mag stripe, it will indicate a good read, typically by flashing the GREEN LEDs at least once (visible and audible indicators and will vary depending on the firmware version). Once the Unit indicates a good read, it is immediately ready to read another ATB coupon.

If the Unit cannot read any portion of the ATB mag stripe, it will indicate a read error, typically by flashing the RED LEDs at least once and initiating an audible alert (visible and audible indicators and will vary depending on the firmware version). Any data on the ATB mag stripe which could not be read is substituted with **%** characters. Once the Unit indicates a read error, it is immediately ready to read another ATB coupon.

Some versions may require the host to enable the Unit to read the next coupon, just as defined in PECTAB mode.

The EC2000se adds the ability of parking the coupon within the unit while waiting for a host response, and ejecting or rejecting depending on the validity of the passenger data to the specific flight.

6.4 PECTAB Mode Operation

In this mode, the Unit uses one of the downloaded PECTABs to retrieve all specified decoded magnetic data and transmits the data as PECTAB elements per the AEA standard. This mode can drastically reduce the amount of data sent to the host system, and uses the processing power of the Unit to sort through the mag data instead of the host system performing this task.

If the Unit cannot read a specified portion of the ATB mag stripe, a substitution character will be returned. The substitution character is defined by the PECTAB (see command set section). In PECTAB mode, the Unit will not immediately give an audible or visible alarm unless the host system response timeout period is reached (typically 7 - 10 seconds, but varies depending on the firmware version and may be set to infinite). If the timeout period is reached, a visible and/or audible alarm is initiated. This is typically the same as the alarm initiated by the AEA CB command but will vary depending on the firmware version.

A Unit operating in this mode waits for a response from the host system that the data it received was valid and correct, or had some issue requiring immediate attention by the operator.

The host system must respond with one of the AEA commands listed in the table below:

Host Data Status	AEA Command[1]	LED[2]	Audible[2]
Data sent to host system was valid	CC[3]	GREEN	NO
Data sent to host system was NOT valid	CE	RED	NO
Data sent to host system was NOT valid	CB	RED	YES

1. Each AEA command sets up the Unit to read the next ATB coupon.
2. Exact response for each command will vary depending on the firmware version.
3. CC command can have several variations for controlling the cut and sort operations.

The EC2000se adds the ability of parking the coupon within the unit while waiting for a host response, and ejecting or rejecting depending on the validity of the passenger data to the specific flight.

7.0 Bar Code Reading Operation (optional)

7.1 ATB/E-Ticket Coupon Reading Using the Internal 1D Bar Code Scanner

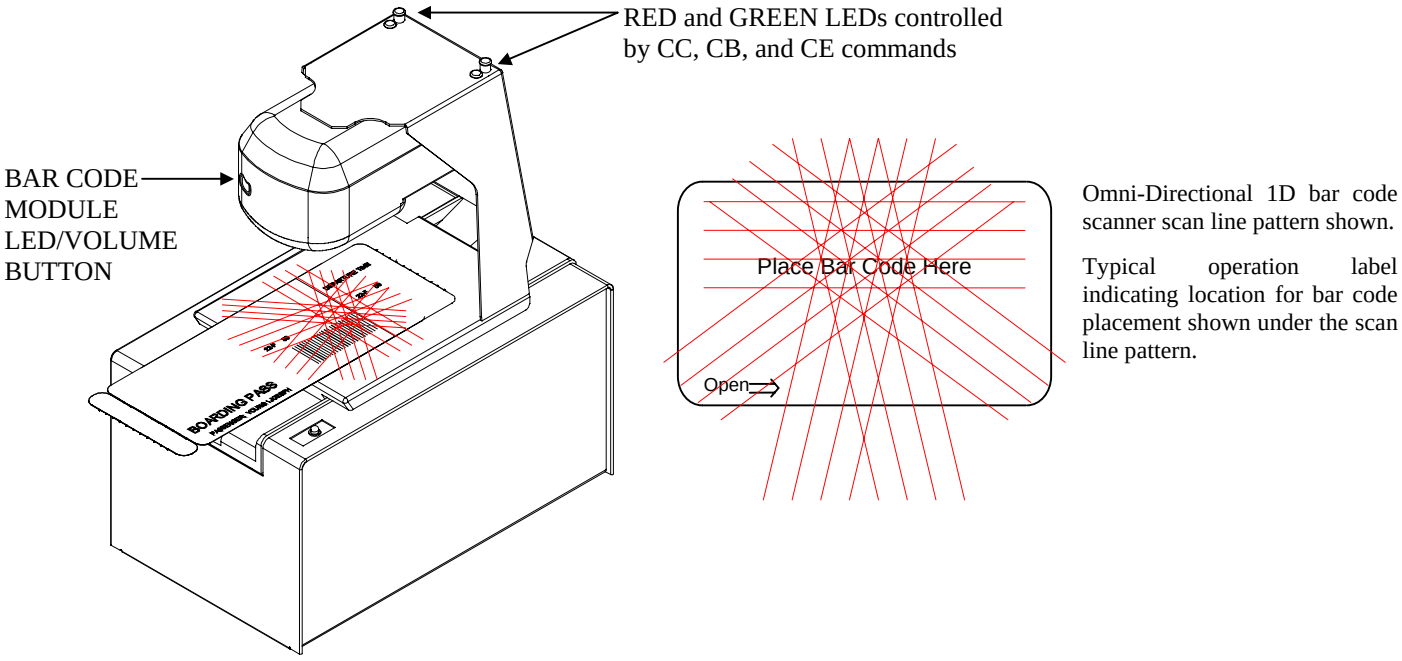
The Unit's integrated 1D bar code scanner is mounted above with the bar code target area directly below. The target area is clearly marked with a label indicating the bar code placement area. The integrated omni-directional 1D bar code scanner provides 20 individual scan lines for reliable reading of the bar code printed on the ATB or E-Ticket coupon.

The 1D bar code scanner provides an audible indication of bar code reading along with flashing the bar code LED. This audible indication does not indicate that the passenger data is valid for the specific flight, but only that the bar code presented was accurately scanned.

The internal 1D bar code scanner buzzer alarm can be used to provide audible alerts besides the one during a bar code scan.

The AEA CB, CC, and CE commands are used to generate audible and visible indications of valid or invalid data reads, just as defined in the ATB mag data reading sections.

INTERNALLY MOUNTED 1D BAR CODE SCANNER



Although the 1D bar code scanner is certified to safely operate as implemented in this design, the operator should never stare directly into the beam or lens.

7.2 ATB/E-Ticket Coupon Reading Using the Internal 2D Bar Code Scanner

The Unit's integrated 2D bar code scanner is mounted above with the bar code target area directly below. The target area is clearly marked with a Scan Stand Symbol, which only the 2D bar code scanner recognizes.

The 2D bar code scanner locks onto the Scan Stand Symbol and goes into an idle state waiting for the symbol to be covered by a boarding pass with a 1D or 2D bar code. When the symbol is covered, the bar code scanner turns on the illumination LEDs and attempts to lock onto and decode bar codes in its field of view.

The 2D bar code scanner has LEDs to illuminate the scan field area, and others to generate the locating beam in the center of the field. The locator beam is positioned approximately over the top of the Scan Stand Symbol location (when covered by the coupon).

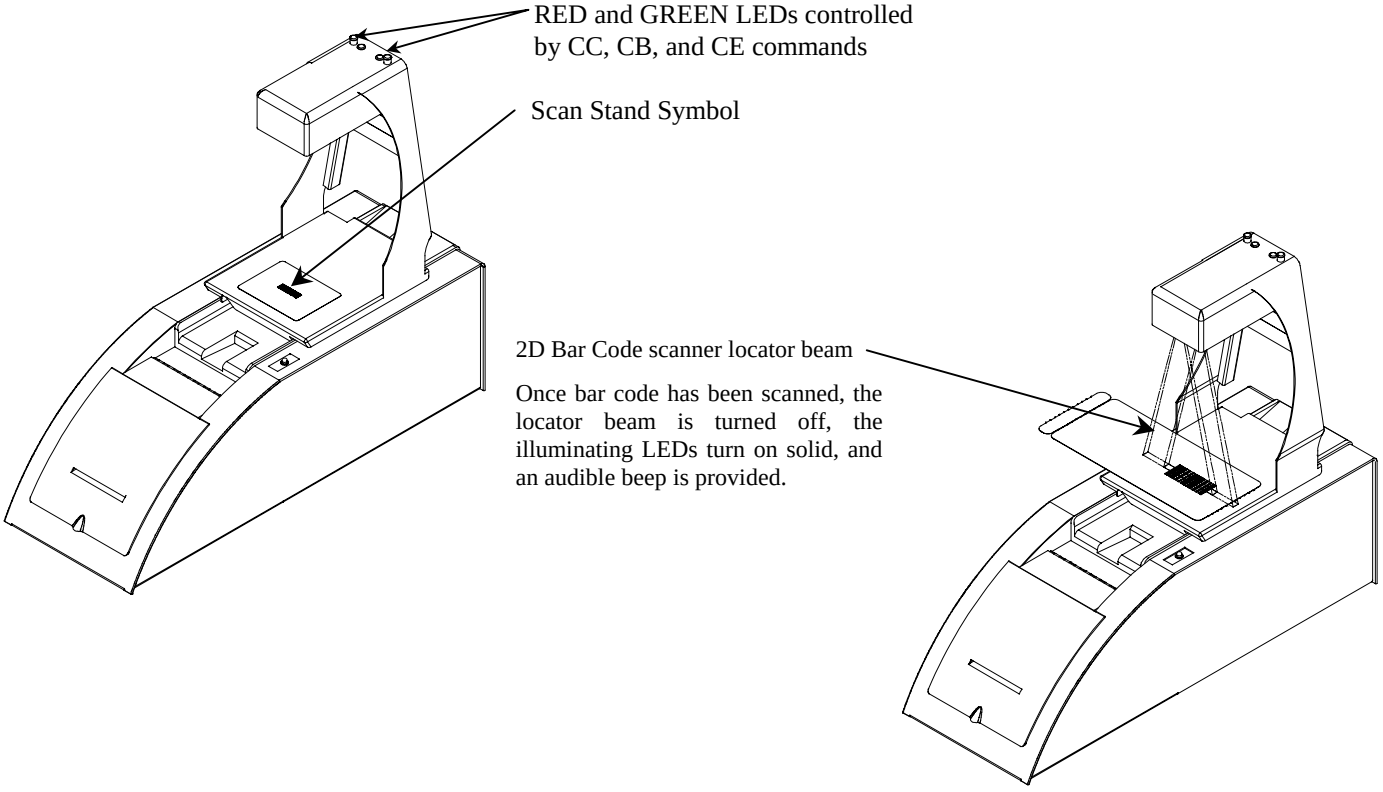
The 2D bar code scanner provides an audible indication of bar code reading. This audible indication does not indicate that the passenger data is valid for the specific flight, but only that the bar code presented was accurately scanned.

Once coupon is removed from the scan area, the scanner locks onto the Scan Stand Symbol and returns to the idle state.

The internal 2D bar code scanner buzzer alarm can be used to provide audible alerts besides the one during a bar code scan.

The AEA CB, CC, and CE commands are used to generate audible and visible indications of valid or invalid data reads, just as defined in the ATB mag data reading sections.

INTERNALLY MOUNTED 2D BAR CODE SCANNER

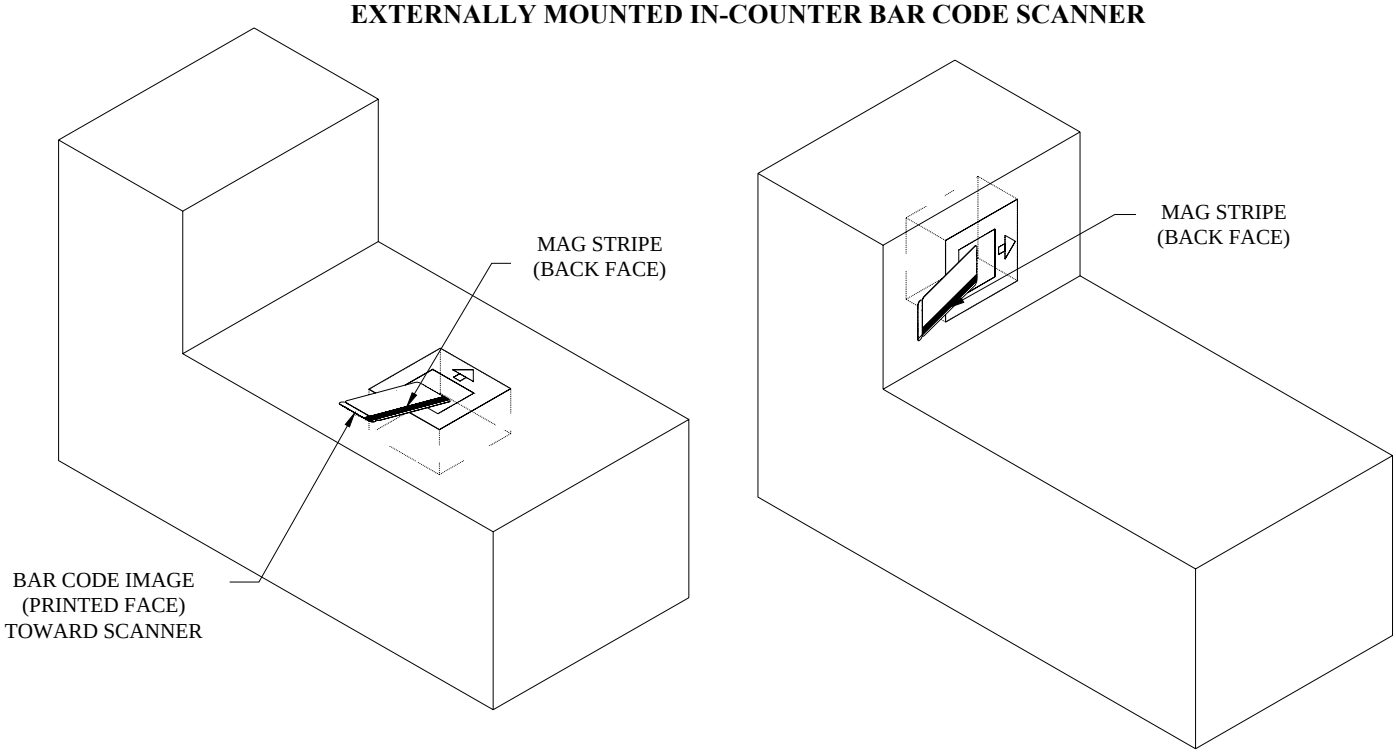


The 2D bar code scanner (or scan engine) does not have any laser components. **The scan engine uses light emitting diodes (LEDs) that create the aimer line and illumination sources**. **Although the operator is exposed to these light sources**, **testing has been done to demonstrate that the scan engine is safe for this type of application (under normal usage conditions)**.

Just as any light source, **the operator should never stare directly into the beam or lens**.

7.3 ATB/E-Ticket Coupon Reading Using the External Bar Code Scanner

EXTERNALLY MOUNTED IN-COUNTER BAR CODE SCANNER



The external bar code scanner can be mounted in multiple location/orientations. This is based primarily on space requirements, but also operator movements are used to determine the optimal location of the scanner.

To read the bar code on the Boarding Pass/E-Ticket, simply swipe the bar code past the window on the scanner following the directional arrow on the scanner surface.

Although integrated in-counter 1D bar code scanners are all certified to safely operate as implemented in this design, **the operator should never stare directly into the beam or lens**.

7.4 Bar Code Data and Configuration

The Unit utilizes an industry standard bar code scanner. Scanned bar code data is transmitted to the host system as straight data or with a bar code *type* identifier (typically the AIM ID code). See the typical format examples below:

[STX]“Bar Code Data”[ETX]

OR

[STX]‘AIM ID’“Bar Code Data”[ETX]

The original internal 1D bar code scanner can be configured through the serial port, and all bar code scanners are configurable via special configuration bar codes. The bar code scanners can be configured to read specific bar code symbologies (excluding others to increase their efficiency), set same and different bar code read timeout periods, and power save timeout options. This allows configuration of the bar code scanners for specific customer requirements and particular operating conditions.

See *Bar Code Commands* and the *Configuration Bar Codes* section for further details.

8.0 Credit Card Reading Operation (optional)

The Unit may have a credit card, smart card, or OCR reader interfaced to the Unit via an available RS-232 serial port. These devices can provide passenger identification information to the host via the Unit's host interface.

8.1 Credit Card Insertion and Removal

The credit card data is processed through the Unit's main processor and sent onto the host system. In many cases the data is manipulated to provide the data based on specific host system requirements.

Some credit card readers incorporate a smart card interface in the same module/package.

8.2 Credit Card Data

The Unit will typically use an industry standard credit card reader with a smart card interface. The data output format (in un-manipulated form) will be as follows:

[STX] 'Optional Characters' "CC Track 1 Data" 'Optional Characters' [ETX]
[STX] 'Optional Characters' "CC Track 2 Data" 'Optional Characters' [ETX]
[STX] 'Optional Characters' "CC Track 3 Data" 'Optional Characters' [ETX]

Optional characters include industry standard start and stop sentinel characters:

% and **?** for track 1
; and **?** for tracks 2 and 3

Other characters may be used to identify the track and block location.

DC1 = 11_{HEX} indicating track 1/block 1
! = 21_{HEX} indicating track 2/block 1
1 = 31_{HEX} indicating track 3/block 1

9.0 Receipt Printing Operation (optional)

9.1 Accessing the Printer/Paper Area

The integrated receipt printer is located in the front of the Unit.

To access the receipt printer, lift up on the outer door at the finger lift point (deformation in the center/bottom of the door).

The door will rotate back past 90° toward the rear of the Unit and hold in that location providing access to the printer/paper area.

Make sure the door is secure in the fully upright position to ensure it will not swing down to the closed position while loading stock.

9.2 Loading Stock/Auto Feed Paper Load

Verify that the thermal surface of the roll stock is facing down toward the bottom of the Unit.

Set the roll down in the paper roll reservoir and then insert the free end of the roll into the paper feed slot at the top of the printer assembly.

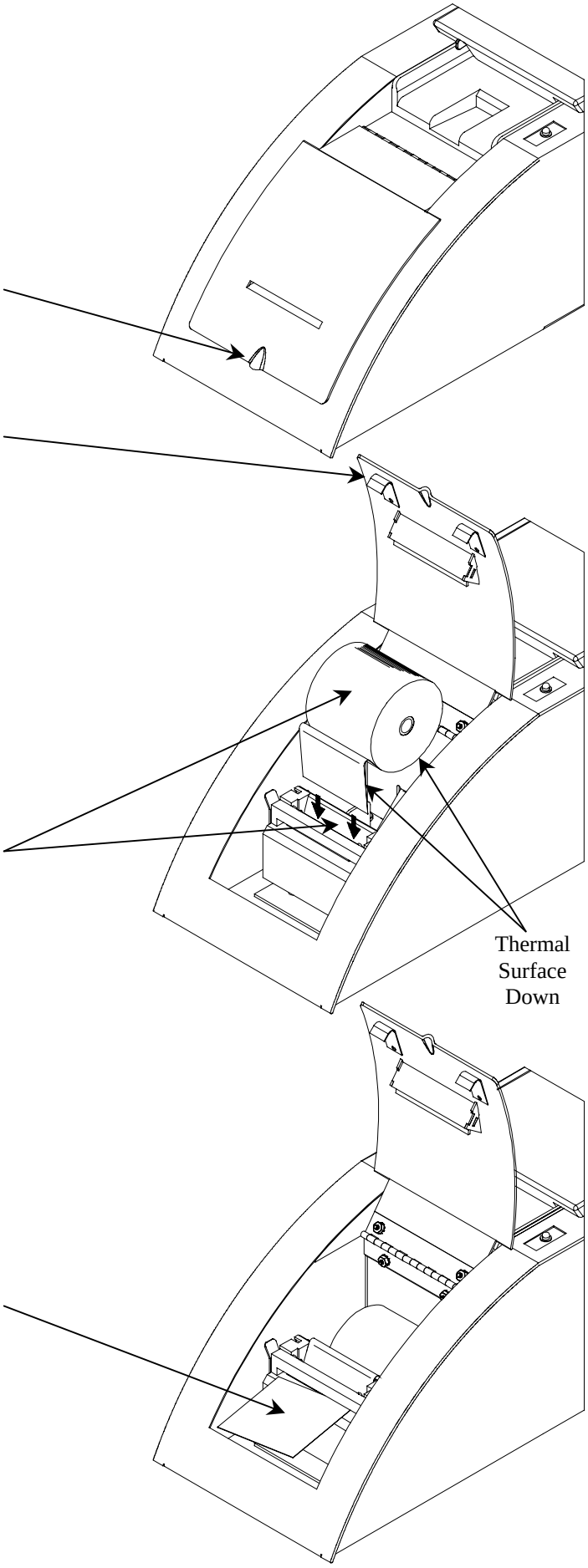
The receipt printer will automatically detect the stock, pull the stock into the print mechanism and through the cutter mechanism.

Do not hold or pull the stock while the printer is auto loading the stock, **or after the auto loading process is complete**. **Unlatch the print head before manually removing stock**.

After feeding a default distance, the cutter will activate and perform a full cut.

Remove the excess stock (previously cut off) and close the outer door. Make sure that the door closes securely (door will latch in place).

Reference Receipt Printer Commands section for generating and printing coupons.



9.3 Releasing Cutter Mechanism and Relock

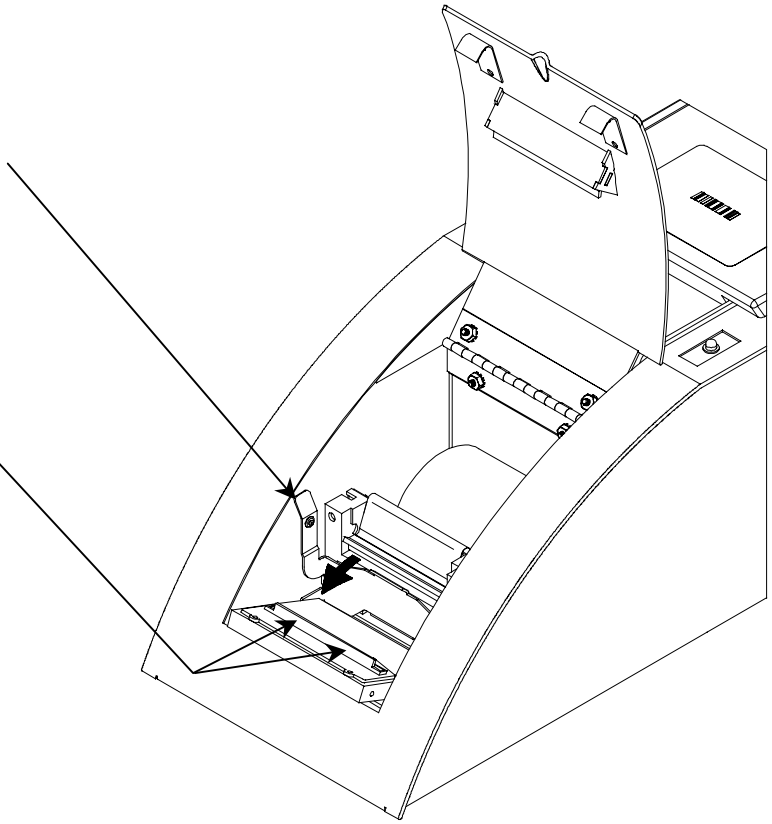
If the stock does not load through the cutter mechanism, pull the cutter mount latch arm toward the outside of the Unit and drop the cutter mechanism down toward the front of the Unit.

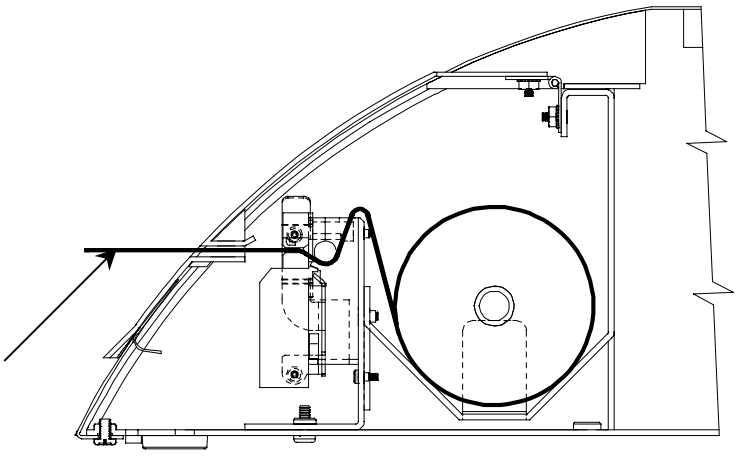
Manually feed the stock through the slot in the rear of the cutter mechanism.

While pulling the stock taught, swing the cutter mechanism up to the print mechanism and relock it into the cutter mount latch arm.

Now carefully tear the excess stock from the front edge of the cutter mechanism, or initiate a full cut command from the host and remove the excess stock.

Then close the outer door.

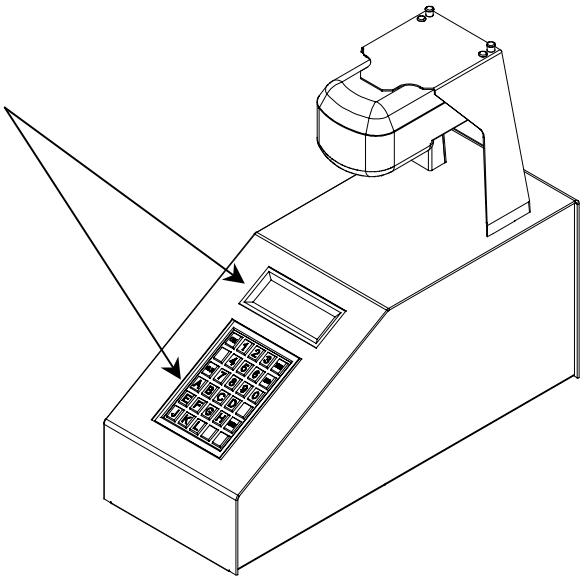




Printed surface exiting the Unit.

10.0 Keypad/Display Operation (optional)

10.1 Keypad Basics and Options (EC2000 only)



The integrated keypad/display option (sometimes referred to as a terminal) is located in the front of the Unit.

The keypad/display is mounted at approximately a 30° angle.

The keypad is used to provide operator input of customer specific information. The keypad will be configured for each specific customer requirement and the keypad configuration will vary depending on the host system.

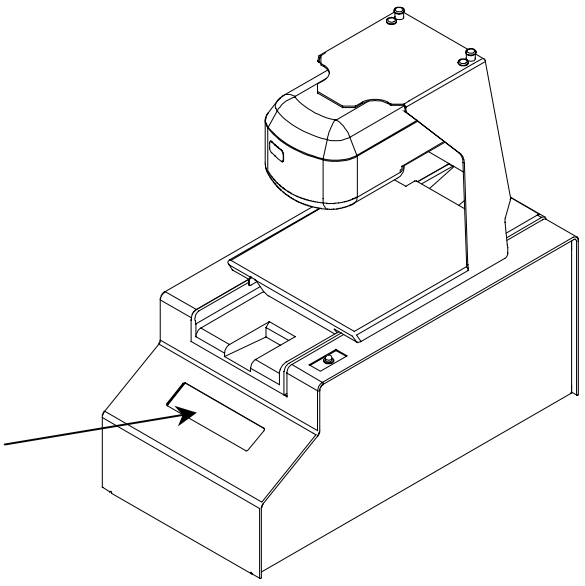
For example, the layout for a SABRE host will be configured totally different from the layout required by a SITA CUTE host. There may also be individual airline requirements that may require additional layout changes.

The standard layout is a matrix of six (6) rows and five (5) columns with the two lower right buttons (last two in the bottom row) reserved for factory use.

Each key can be defined as characters, numbers, or special function keys. The exact function of the key will be defined by the host system requirements.

The standard layout color scheme is black background with white lettering, but multiple color patterns can be provided as part of a custom layout configuration.

10.2 Display Options



The integrated display option is located in the front of the Unit.

The keypad/display is mounted at approximately a 30° angle.

The display option can be provided as part of the keypad option (as shown above) or separately as a display module alone.

The configuration shown above provides 20 columns or characters with a maximum of 4 lines or rows available (20x4). LCD and Vacuum Florescent display options are available for the 20x4 configuration shown above.

The display module configuration shown here provides 20 columns or characters with a maximum of 2 lines (display only) or 4 lines (terminal only; see figure above) available (20x2 or 20x4 configurations). Standard configuration utilizes a Vacuum Florescent Display (VFD) module and Liquid Crystal Display (LCD) versions are available for the display configuration shown.

11.0 Accessory Item Installation and Optional Mounting Schemes

11.1 1D Bar Code Scanner Installation for Scanner Ready Units

1.0 Locate and remove the bar code scanner mount clamp from its mounting location (Nuts are 6-32 KEPS). Use a 5/16" hex socket to loosen and tighten the nuts (torque to 8.0 in.-lbs).

2.0 Locate the bar code scanner and install the 8-Pin RJ connector to the back of the module.

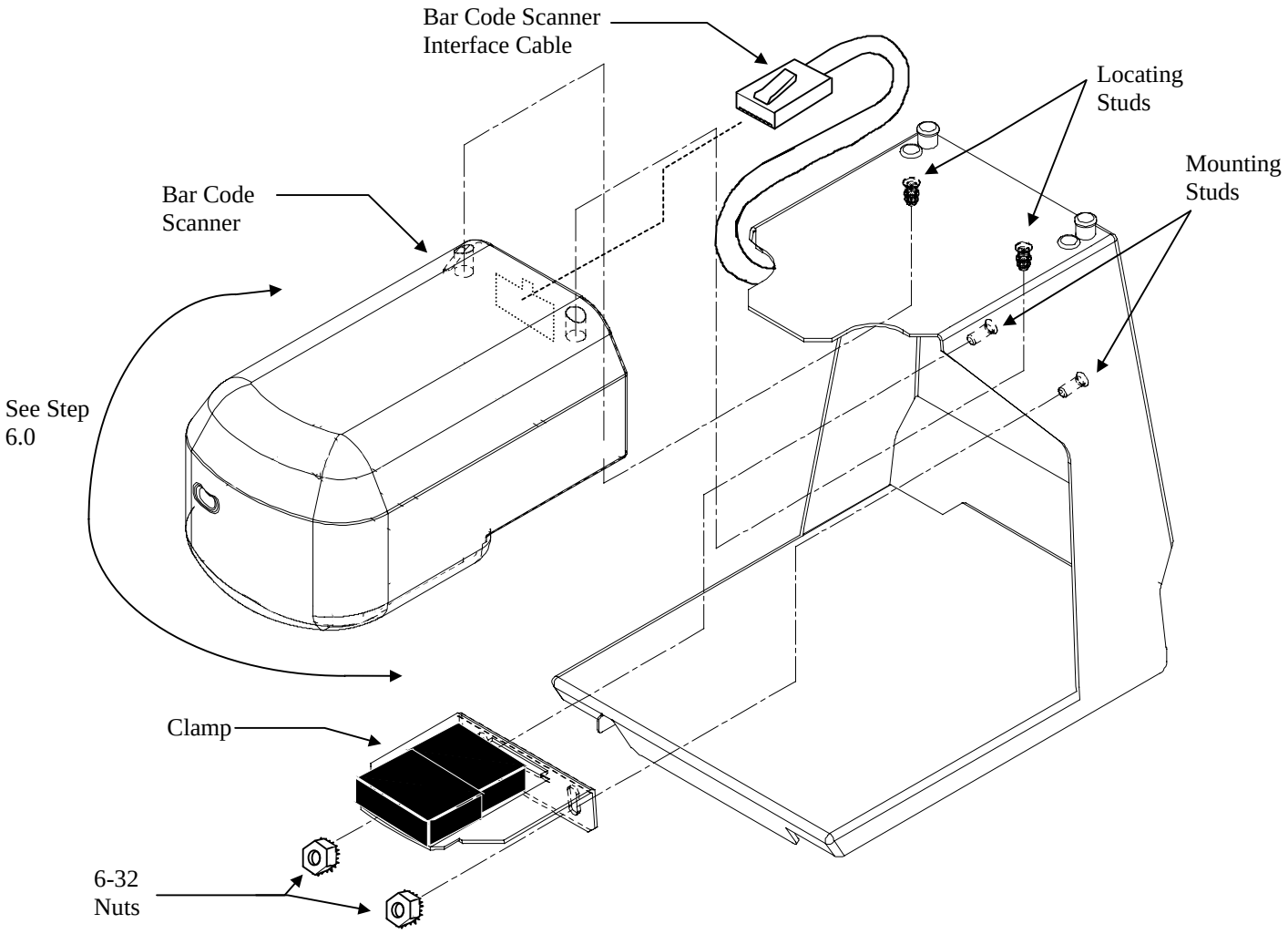
3.0 Carefully pack the service loop of the interface cable in the back of the scanner mount. Identify the locating studs in the back/top of the scanner mount and match them to the holes in the scanner as shown below. Do not crush or bind any cables while positioning the scanner.

4.0 Locate the mounting studs in the back/rear of the scanner mount. While holding the scanner module in place, install the scanner mounting clamp onto the mounting studs.

5.0 Use the two 6-32 nuts to secure the clamp while pressing up towards the scanner module.

6.0 Once the scanner is secured, shift the scanner back and forth to ensure that the scanner rests in the proper final mounting position.

7.0 Specific scanner options can be set through the Unit's host connection. If the communication parameters are not set correctly or are unknown, use the configuration bar codes (for the SE9100-552CC) in the back of this manual to establish the minimum configuration to allow set-up by the host system.



11.2 2D Bar Code Scanner Installation for Scanner Ready Units

1.0 Locate the bar code scanner module and install the 8-Pin RJ connector to the back of the module.

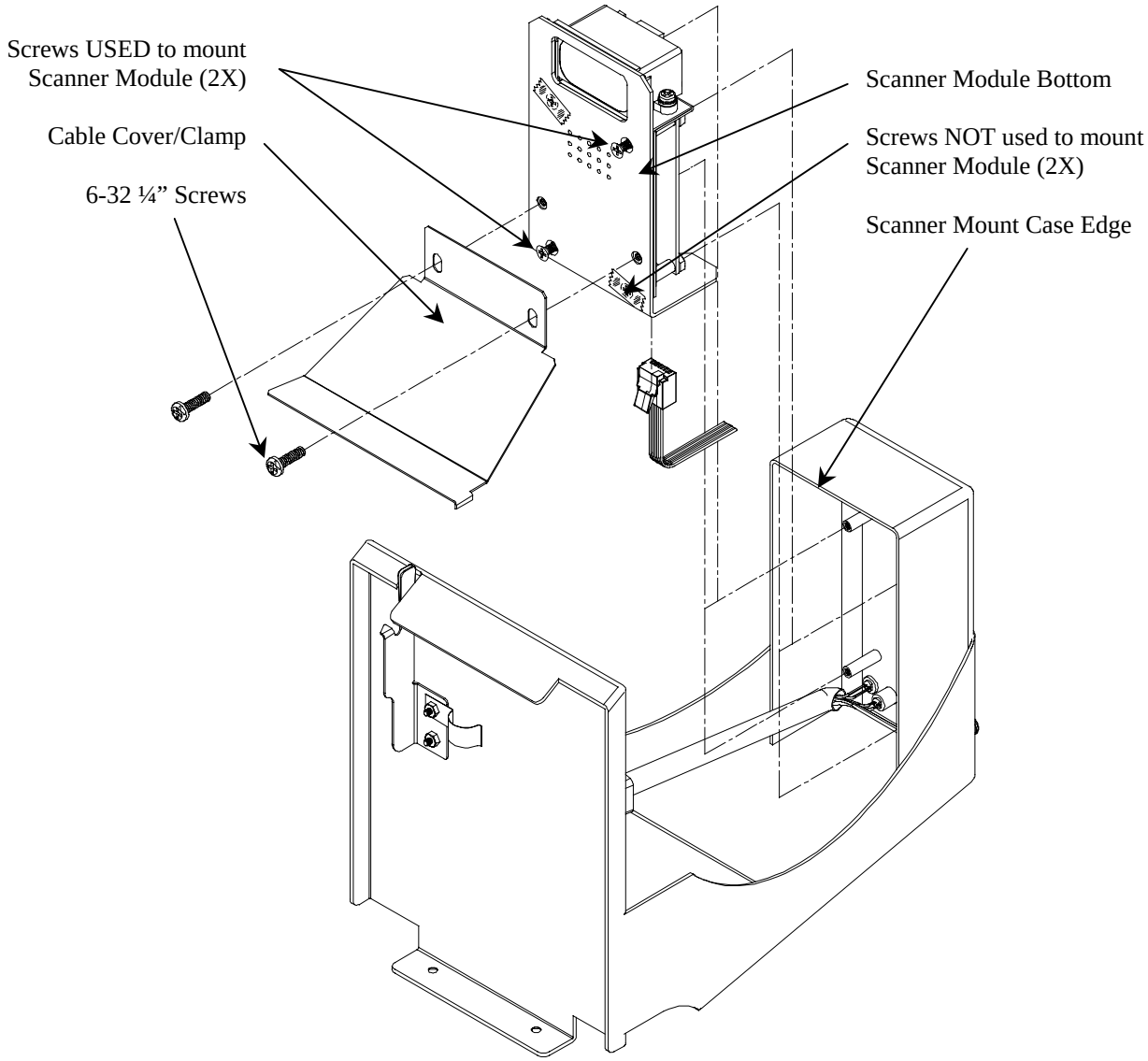
2.0 Identify the mounting/locating studs in the top of the scanner mount and match them to four mounting screws in the bottom of the scanner module. Do not crush or bind any cables while positioning the scanner.

NOTE: Only two (2) of the four (4) screws are used to mount the assembly into the scanner mount. The other two (2) screws are covered with tape and are only used to hold the scanner module together.

3.0 Install the scanner module using the two screws as indicated. Tighten one screw a few turns, then the other. Repeat this until the screws tighten and the module bottom lines up with the scanner mount case edge.

4.0 Carefully pack the service loop of the interface and LED cable in the back of the scanner mount.

5.0 Locate the cable cover/clamp and the two 6-32 ¼" screws. Place the cover/clamp in position and hand install the 6-32 screws. Then press the clamp against the cable at the rear of the scanner mount and tighten the 6-32 screws.



11.3 Rear Cover Shroud/Canopy Installation

If the Unit is supplied with a shroud/canopy accessory item to cover the Unit's rear panel, perform the following installation procedure:

1.0 Set the Unit at the final mounting/secured location (refer to the next section if the Unit is to be hard mounted to the counter top).

2.0 Loosen the top two screws securing the back cover panel. Back screws out about 1/16" from the back panel.

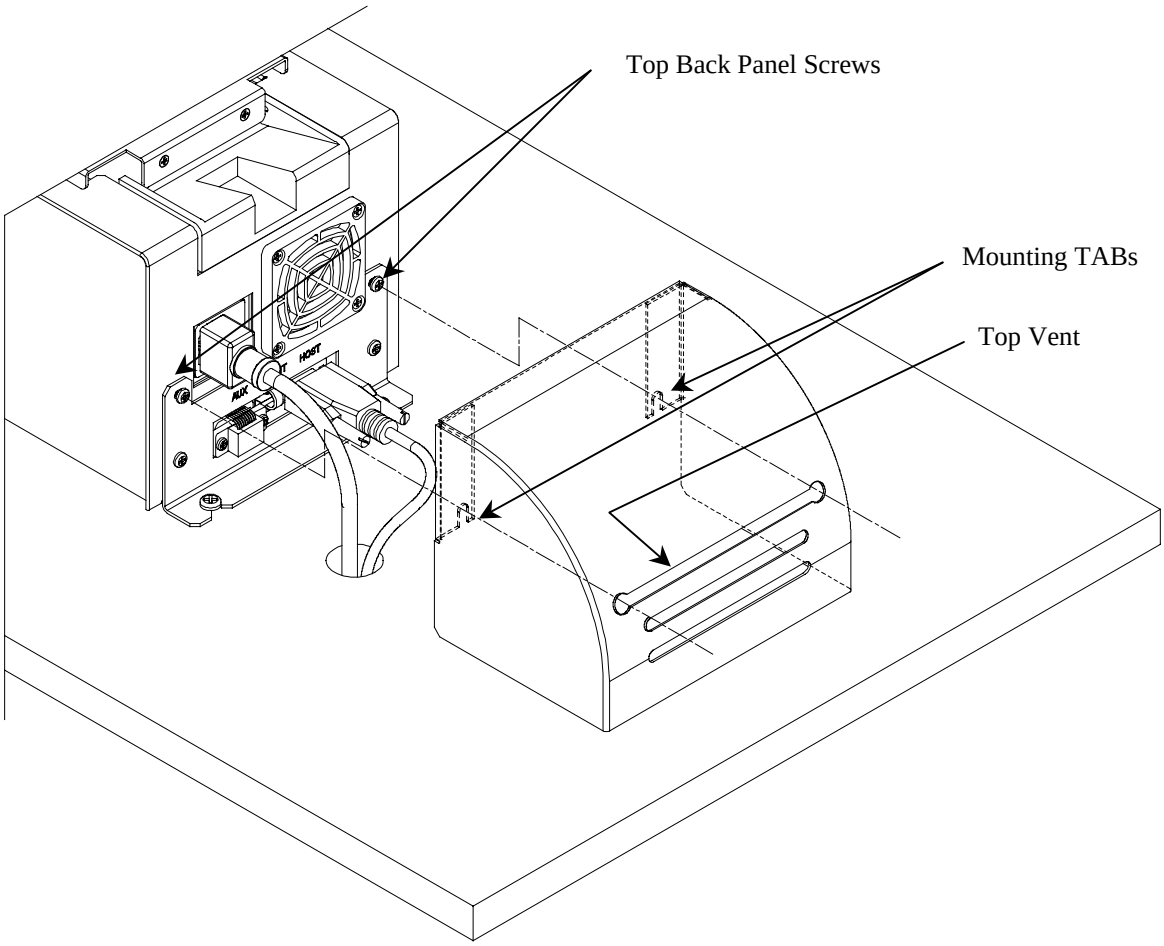
3.0 Route and install the AC power cord into the Unit (routing through hole in counter top shown as example).

4.0 Route and install the host interface cable into the Unit.

5.0 Locate the power switch and turn on the Unit. Verify Unit operation.

6.0 Slip the shroud/canopy over the rear of the Unit locating the mounting tabs of the shroud/canopy behind the head of the top two back panel screws.

7.0. Run the screw driver through the access holes in the ends of the top vent slot and tighten the back panel screws. It is not necessary to aggressively tighten these screws. Just tighten them enough to hold the shroud/canopy securely.



11.4 Mounting Schemes

11.4.1 Back Panel L-Bracket Mounting

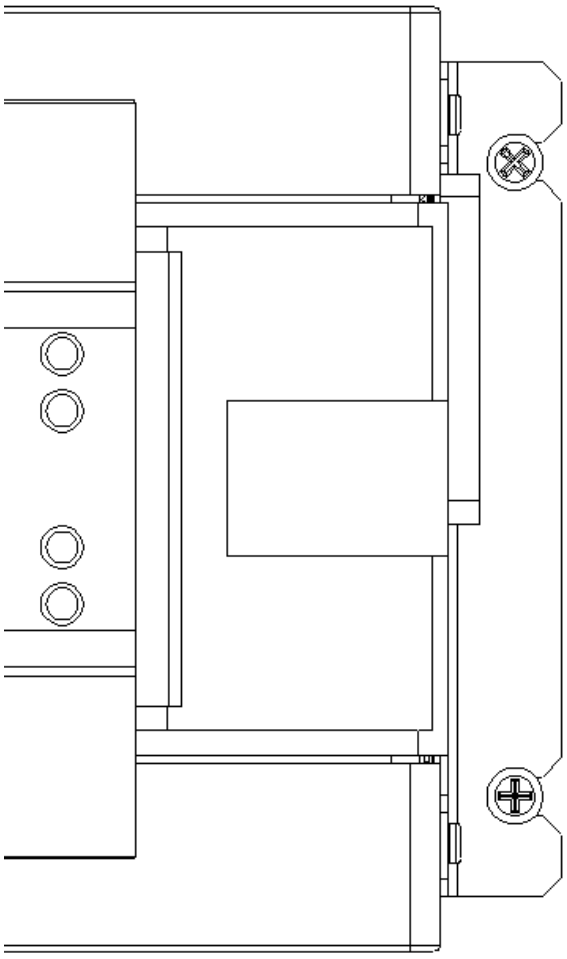
If the Unit is equipped with a special L-Bracket back panel, it comes with two slots cut into the bottom edge/side (side parallel with mounting surface) that can be used to secure the Unit to the counter top.

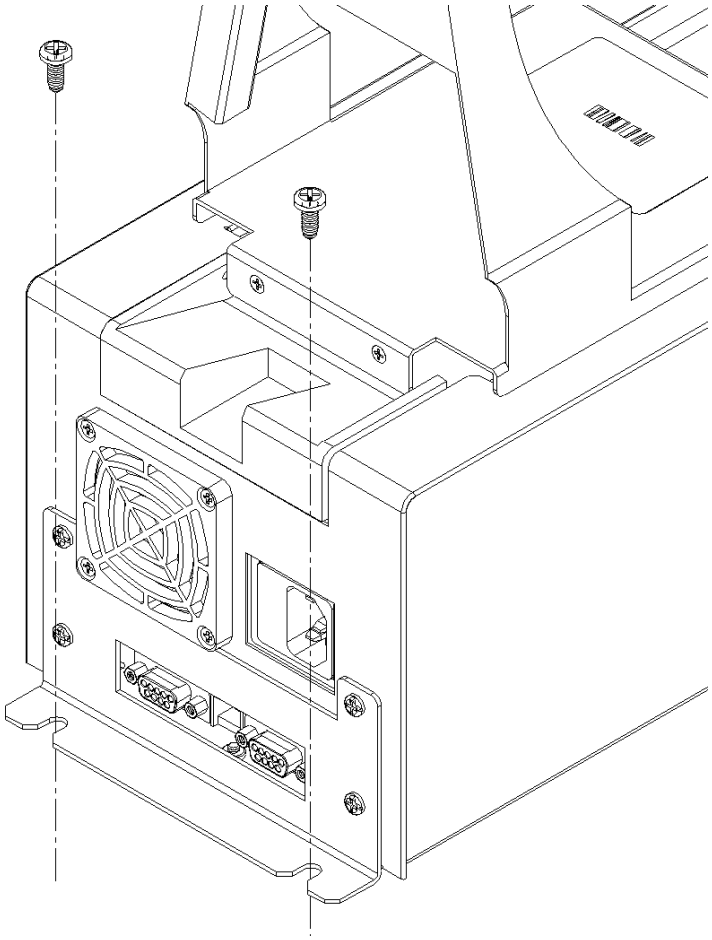
1.0 Locate the L-Bracket back panel mounted to the rear of the unit. The bottom of the L-Bracket should be set at the counter top surface level.

2.0 Locate two mounting screws (may be supplied by Unimark). Mounting slots will accommodate up to a #10 screws.

3.0 Position Unit at intended location. Mark screw location at the center of the slots in the L-Bracket. Drill pilot holes if using wood mounting screws.

4.0 Reposition Unit and secure with screws.





11.4.2 Back Panel L-Bracket Mounting and Receipt Printer Area Hole

If the Unit is equipped with a special L-Bracket back panel refer to previous 11.4.1 section.

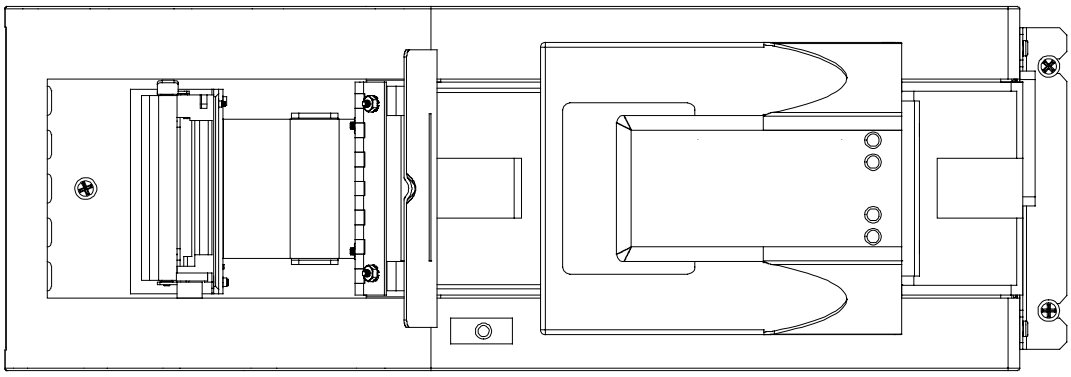
If the Unit is equipped with an optional receipt printer, the front access area may have a hole through the base plate where a mounting screw can be inserted through it to secure the Unit to the counter top.

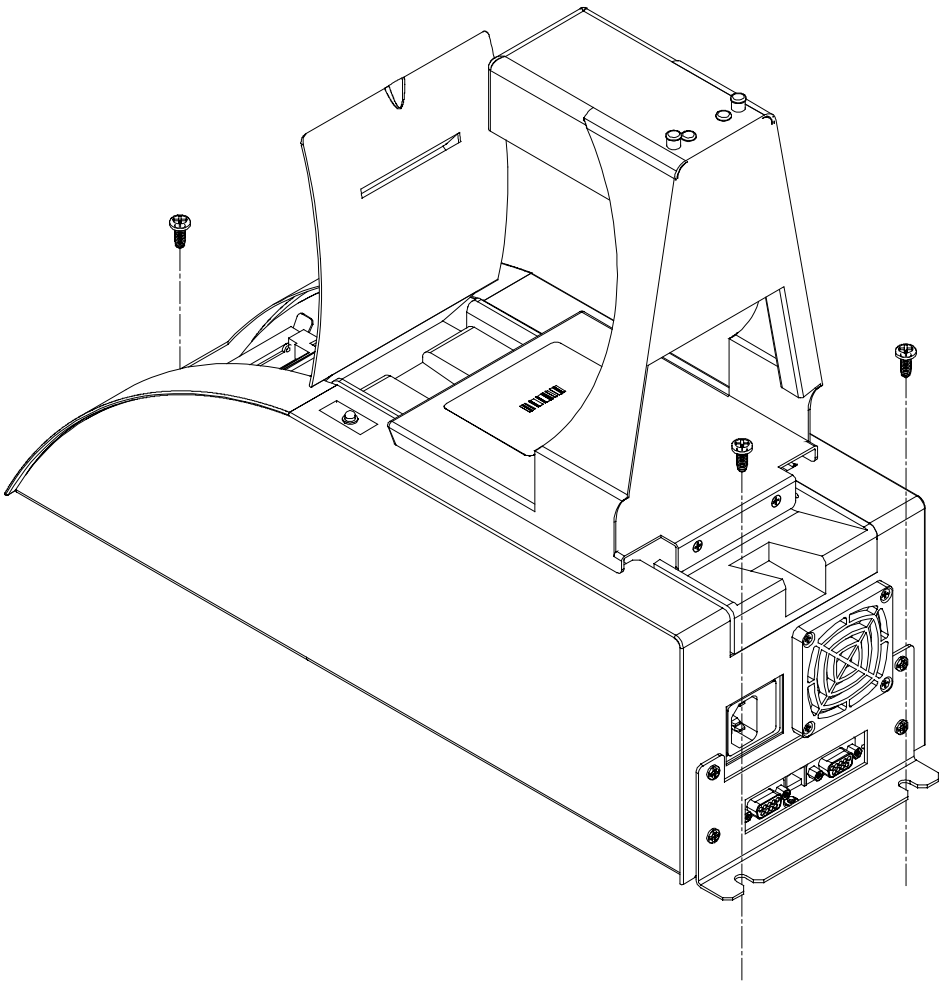
1.0 Open the outer door and access the front receipt printer access area.

2.0 Locate the mounting hole positioned in front of the receipt printer.

3.0 Position Unit at intended location. Mark screw locations at the center of the slots in the L-Bracket and the front access area hole. Drill pilot holes if using wood mounting screws.

4.0 Reposition Unit and secure with screws.





12.0 Command Sets

Commands sent to the Unit are executed as soon as they are received. While executing some commands, the Unit will not be able to receive data from the host system. Also, when the Unit is actively reading ATB mag data, it may not act on received commands until mag processing is complete (depends on firmware version).

The Unit's command set is broken into AEA, Non-AEA, Bar Code Scanner, Credit Card and Smart Card, Keypad and Display, and Printer Interface commands.

Some functions are only available/functional on Basic AEA versions or are specific to the EC2000 or the EC2000se.

12.1 AEA Commands/Sequences

CB - This command initiates an audible and visual error sequence to alert the operator to an issue with the data read from the ATB coupon. The internal audible alarm and RED LED(s) are used.

HOST command sequence: [STX]CB[ETX]
Unit response: [STX]EC2:CBOK[ETX]

CC - This command initiates a visual good read condition to indicate to the operator that the data read from the ATB coupon was valid. The GREEN LED(s) are used.

HOST command sequence: [STX]CC[ETX]
Unit response: [STX]"pectab tran. code"PROK[ETX]; after ATB coupon has been read
[STX]EC2:PROK[ETX]; no ATB coupon has been read

There are variations of this command intended to control cutting and stacking of coupons (such as CC#L1). These are processed in the same manner as the standard CC command.

CE - This command initiates a visual error sequence to alert the operator to an issue with the data read from the ATB coupon. The RED LED(s) are used.

HOST command sequence: [STX]CE[ETX]
Unit response: [STX]EC2:CEOK[ETX]

CT - Hard coded Transaction code change or status. The default transaction code is "EC2:" (not counting the "" marks). As defined by AEA, the transaction code can be any printable ASCII character, from 1 to 5 characters maximum length. Issuing the CT command alone will cause the first response specified below. The second example demonstrates how to change the hard coded transaction code to "UNMK".

HOST command sequence: [STX]CT[ETX]
Unit response: [STX]EC2:CTOKEC2:[ETX]

HOST command sequence: [STX]CTUNMK[ETX]
Unit response: [STX]UNMKCTOKUNMK[ETX]

KP - Program Delete or Terminate process is used to stop all internal processing and set up the Unit so that it can receive a new version of firmware to be downloaded using the PD command.

HOST command sequence: [STX]KP[ETX]
Unit response: [STX]EC2:KPOK[ETX]

PC - PECTAB Clear command is used to clear the Non-Volatile memory of all PECTAB tables which may be loaded.

HOST command sequence: [STX]PC[ETX]
Unit response: [STX]EC2:PCOK[ETX]

PD - Program Download command is used to update the firmware within the Unit. This is performed automatically from the host system without the need of user intervention assuming the host system supports the download function.

HOST command sequence: [STX]PD**vvvvvvvvvvbbbbbbb**[ETX]
Unit response: [STX]EC2:PDOK**vvvvvvvvvv**[ETX]

Where: **vvvvvvvvvv** is the 10 digit version number being loaded
bbbbbbb is the program data length in bytes (decimal)

PS - PECTAB Status command is used to identify all PECTABs which are currently loaded in the Non-Volatile memory of the Unit.

HOST command sequence: [STX]PS[ETX]
Unit response: [STX]EC2:PSOK**v#v#v#v#v#**[ETX]

Where: **v#v#v#v#** are the loaded PECTABs

PT - PECTAB Table load command is used to download a PECTAB table into the Unit's Non-Volatile memory.

HOST command sequence: [STX]PT**s**.....[ETX]
Unit response: [STX]EC2:PTOK**v#v#v#v#v#[**ETX]

Where: **s** is the single digit separator character used in the PECTAB
v#v#v#v#v# are the loaded PECTABs

See AEA specification for complete details.

PV - Program Version command is used to identify the firmware version currently installed in the Unit.

HOST command sequence: [STX]PV[ETX]
Unit response: [STX]EC2:PVOK**vvvvvvvvvvv**[ETX]

Where: **vvvvvvvvvv** is the 10 digit version number being reported

Notes:
1. [STX] represents the Start of Text character (02_{HEX}). Do not send the actual [STX] string.
2. [ETX] represents the End of Text character (03_{HEX}). Do not send the actual [ETX] string.
3. Refer to the AEA standard for further details on these commands.
4. EC2: is the default Hardcoded Transaction code for the Unit.
5. The exact function of the commands as listed may vary depending on customer requirements. For example, the response to the CC command is usually a flash of the GREEN LEDs, but some versions also produce a single audible beep to indicate a good read or valid passenger boarding.

12.2 Non-AEA Commands/Sequences

[STX]*A[ETX] - Used to switch the Unit into an Auxiliary (AUX) port data pass-through mode. After receiving this sequence, all data (except the [STX]**[ETX] sequence) received at the host port will be sent to the device connected to the Auxiliary (AUX) port.

Data will be sent to the port in data packets approximately 570 bytes long. However, if the Unit receives the [STX]**[ETX] sequence, all data remaining in the buffer will be sent to the AUX port. The Unit must be in the HOST mode before it will recognize the [STX]*A[ETX] sequence.

Unit response - None

[STX]*M[ETX] - Used to switch the Unit into a Maintenance (MAINT) port data pass-through mode. After receiving this sequence, all data (except the [STX]**[ETX] sequence) received at the host port will be sent to the device connected to the Maintenance (MAINT) port.

Data will be sent to the port in data packets approximately 570 bytes long. However, if the Unit receives the [STX]**[ETX] sequence, all data remaining in the buffer will be sent to the MAINT port. The Unit must be in the HOST mode before it will recognize the [STX]*M[ETX] sequence.

Unit response - None

[STX][ETX]** - Used to switch the Unit back into regular HOST mode. Once the Unit is in either data pass-through modes, only this sequence will switch the unit back into HOST mode.

If data needs to be sent to the AUX port and the host is currently being sent to MAINT port, the host must first send the [STX]**[ETX] sequence to switch the unit back to the HOST mode and then the [STX]*A[ETX] sequence to switch to the data pass-through mode for the AUX port.

Unit response - None

[STX]*CAbpds[ETX] - Used to independently set the communication parameters of the Auxiliary (AUX) port. This aids in the interface of devices whose communication parameters are set and cannot be independently changed to match the Unit.

Unit response - [STX]EC2:*COKA**bpds**[ETX]

[STX]*CMbpds[ETX] - Used to independently set the communication parameters of the Maintenance (MAINT) port. This aids in the interface of devices whose communication parameters are set and cannot be independently changed to match the Unit.

Unit response - [STX]EC2:*COKM**bpds**[ETX]

Where: **CA** accesses AUX port configuration
CM accesses MAINT port configuration
b is baud rate selection (1 - 300, 2 - 600, 3 - 1200, 4 - 2400, 5 - 4800, 6 - 9600, 7 - 19200)
p is parity selection (N - none, E - even, O - odd)
d is data word size (5, 6, 7, or 8 bits)
s is the stop bit length (1 or 2 bits)

[STX]*CA[ETX] - Polls the Unit to determine the current Auxiliary (AUX) port configuration.

Unit response - [STX]EC2:*COKA**bpds**[ETX]

[STX]*CM[ETX] - Polls the Unit to determine the current Maintenance (MAINT) port configuration.

Unit response - [STX]EC2:*COKM**bpds**[ETX]

[STX]*I[ETX] - Polls the Unit and reports the value in the reset counter.

Unit response - [STX]EC2:*IOK**xxh**[ETX]

Where: **xx** is the hex value from 00 to FF
h indicates that the value is in hex format

[STX]*II[ETX] - Polls the Unit and reports the value in the reset counter and clears the counter to 00_{HEX}.

Unit response - [STX]EC2:*IOK**xxh**[ETX]

Where: **xx** is the hex value from 00 to FF
h indicates that the value is in hex format

Note that the value reported is the current value before being cleared to 00_{HEX}.

[STX]*Sma[ETX] - Used to set the alternate [STX] character for data received at the Auxiliary (AUX) and Maintenance (MAINT) ports. The command does not allow the alternate [STX] character for each port to be set independently (one at a time), and requires that they both be set at the same time.

Unit response - [STX]EC2:*SOK**ma**[ETX]

Where: **m** is the alternate [STX] character for the MAINT port
a is the alternate [STX] character for the AUX port

The default alternate [STX] character is different depending on specific customer requirements.

[STX]*S[ETX] - Polls the Unit to determine the current alternate [STX] character for each port.

Unit response - [STX]EC2:*SOK**ma**[ETX]

Notes:
1. [STX] represents the Start of Text character (02_{HEX}). [ETX] represents the End of Text character (03_{HEX}).
2. Some of these non-AEA commands will not function with host systems with complicated interaction requirements (such as ARINC and SITA).
3. Options that require close control over the AUX and MAINT ports have firmware that will automatically exclude some of these commands.

12.3 1D Bar Code Commands/Sequences (SE9100-552CC equipped Units only)

All bar code scanner command sequences include the Non-AEA commands used to switch into the Maintenance (MAINT) port data pass-through and HOST modes. This is necessary to pass the commands to the bar code scanner module. If a bar code scanner is connected to the Auxiliary (AUX) port, substitute *A for *M in the following commands.

[STX]*M[ETX][BEL][STX][ETX]** - Transmits the [BEL] character to the bar code scanner. This initiates a single beep from the bar code scanner module.

[STX]*M[ETX][DC2][STX][ETX]** - Transmits the [DC2] character to the bar code scanner. This initiates a dual tone beep from the bar code scanner module.

[STX]*M[ETX][STX]00E005S[NUL][NUL][NUL][NUL][ETX]20$_{HEX}$[STX][ETX]** - Puts the bar code scanner into programming mode

[STX]*M[ETX][STX]00E005E[NUL][NUL][NUL][NUL][ETX]36$_{HEX}$[STX][ETX]** - Takes the bar code scanner out of programming mode

[STX]*M[ETX][STX]00E0055[NUL][NUL][NUL][NUL][ETX]46$_{HEX}$[STX][ETX]** - Requests the bar code scanner firmware version. Scanner must be in programming mode before issuing this command.

12.4 Receipt Printer Commands/Sequences

All receipt printer command sequences include the Non-AEA commands used to switch into the Auxiliary (AUX) port data pass-through and HOST modes. This is necessary to pass the commands to the receipt printer.

The receipt printer commands can be sent individually or grouped together with the data pass-through commands around the individual command sequences or the entire group of receipt printer commands and printed data.

Once a receipt printer command is processed (such as font select or text justification) the receipt printer mode of operation stays in that resultant state until another command is received that alters that state or power is cycled on the Unit.

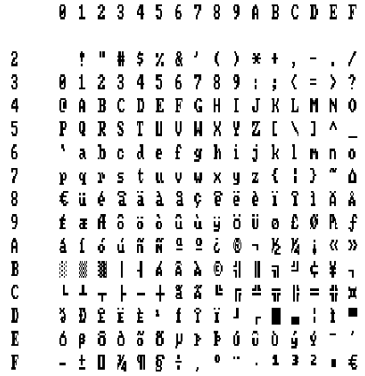
Only the basic printing commands are listed in this document. Contact Unimark for complete receipt printer document if you require a more in depth command set explanation.

Select Font Set: [ESC]%n ⇒ 1B$_{HEX}$25$_{HEX}$n

[STX]*A[ETX][ESC]%n[STX][ETX]** - Selects the font set resident in the receipt printer. "n" is the variable where:
n = 00$_{HEX}$ to select the **8x16** font bank
n = 01$_{HEX}$ to select the **7x16** font bank
n = 02$_{HEX}$ to select the **12x10** font bank

The following Font Set diagrams are shown for reference purposes and may not be an exact match to the actual print generated by the receipt printer. All character bitmaps will be shown with their hexadecimal code (row being the most significant nibble, and column the least significant nibble). Example: ASCII code for "A" is 41_{HEX} (or 65 decimal).

8x16 Font bank: Character size is 9 pixels (8 active dots plus one intercharacter) x 20 pixels (16 active dots plus 4 interlines including underline), 1.125mm by 2.5mm. With double and quadruple height and width, maximum character size can go up to 4.5mm width by 10mm height.



7x16 Font bank: Character size is 8 pixels (7 active dots plus one intercharacter) x 20 pixels (16 active dots plus 4 interlines including underline), 1 mm by 2.5mm. With double and quadruple height and width, maximum character size can go up to 4 mm width by 10mm height.

12x20 Font bank: Character size is 13 pixels (12 active dots plus one inter-character) x 24 pixels (20 active dots plus 4 interlines including underline), or 1.625 mm x 3 mm. With double and quadruple height and width, maximum character size can go up to 6.5mm width x 12mm height.

Select Text Justification: [ESC]Cn ⇒ $1B_{HEX}43_{HEX}n$

[STX]*A[ETX][ESC]Cn[STX][ETX]** -** Selects the justification for text following this command. "n" is the variable where:

n = 00_{HEX} to select **center** justification
n = 01_{HEX} to select **right** justification
n = 02_{HEX} to select **left** justification

Select Text Print Options: [ESC]!n ⇒ $1B_{HEX}21_{HEX}n$

[STX]*A[ETX][ESC]!n[STX][ETX]** - Selects Print Options for text following this command. "n" is the variable that defines a large variety of print options (see table):

Bit; n = $b_7b_6b_5b_4b_3b_2b_1b_0$	Function	Bit = 0	Bit = 1
0	Not used	-	-
1	Quadruple Height	Cancelled	Set
2	Quadruple Width	Cancelled	Set
3	Not used	-	-
4	Double Height	Cancelled	Set
5	Double Width	Cancelled	Set
6	Not used	-	-
7	Underlined	Cancelled	Set

Example: 1) To set the text format to Quadruple Height and Width set bits 2 and 1 to 1 and all others to 0. The result will be [ESC]!04_{HEX}

Example: 2) To set the text format to Double Height and underlined set bits 7 and 4 to 1 and all others to 0. The result will be [ESC]!90_{HEX}

Select Text Rotation: [ESC]{n ⇒ $1B_{HEX}7B_{HEX}n$

[STX]*A[ETX][ESC]{n[STX][ETX]** - Selects the rotation for text following this command. "n" is the variable where:
n = 00_{HEX} to select **normal** text rotation
n = 01_{HEX} to select **rotated** text (180°)

Normal text rotation means that the text comes out of the unit so that it can be read as the paper exits the unit. If the command is set for rotated text the characters are upside down as the paper exists the unit. Text still prints out in the order sent to the Unit.

Feed Paper Forward: [ESC]Jn ⇒ $1B_{HEX}4A_{HEX}n$

[STX]*A[ETX][ESC]Jn[STX][ETX]** - Feeds paper forward (out of the unit). "n" is the variable where distance is n x 0.125mm. The range of n is 00-FF_{HEX} (0-255 decimal). The print position is at the beginning of the next line.

Continuous Stock Note: When the unit finishes printing the paper stops advancing when using continuous stock. The Feed Forward command is used to position the print beyond the cutter position so that all print is on the coupon after the full or partial cut.

Feed Paper Backward: [ESC]jn ⇒ $1B_{HEX}6A_{HEX}n$

[STX]*A[ETX][ESC]jn[STX][ETX]** - Feeds paper backwards (into the unit). "n" is the variable where distance is n x 0.125mm. The range of n is 00-FF_{HEX} (0-255 decimal). The print position is at the beginning of the next line.

Full Cut: [ESC]i ⇒ $1B_{HEX}69_{HEX}$

[STX]*A[ETX][ESC]i[STX][ETX]** - Causes the unit to perform a full cut (cut through the full width) of the stock

Partial Cut: [ESC]m ⇒ $1B_{HEX}6D_{HEX}$

[STX]*A[ETX][ESC]m[STX][ETX]** - Causes the unit to perform a partial cut (cut through leaving an uncut area about 1/16" wide in the center) of the stock

Print Bar Code: [GS]kn[start byte]<data>[NUL] ⇒ $1D_{HEX}69_{HEX}$n[start byte]<data>00_{HEX}

[STX]*A[ETX][GS]kn[start byte]<data>[NUL][STX][ETX]** - Prints a bar code encoding <data> in the command. "n" is the bar code type selection variable where:
n = 00_{HEX} for UPC-A
n = 02_{HEX} for EAN 13
n = 03_{HEX} for EAN 8
n = 04_{HEX} for Code 39
n = 05_{HEX} for Interleaved 2 of 5
n = 07_{HEX} for Code 128

The [start byte] character is used for Code 128 bar code types and is used to select between subsets.
[start byte] = 87_{HEX} for subset A
[start byte] = 88_{HEX} for subset B
[start byte] = 89_{HEX} for subset C

The <data> is the actual data to be encoded into the bar code. The acceptable data is determined by the bar code type.

UPC-A	data is numeric only (30_{HEX} - 39_{HEX}) and the data length is set at 11
EAN-13	data is numeric only (30_{HEX} - 39_{HEX}) and the data length is set at 12
EAN-8	data is numeric only (30_{HEX} - 39_{HEX}) and the data length is set at 7
Code 39	data is numeric (30_{HEX} - 39_{HEX}), upper case alpha (41_{HEX} – $5A_{HEX}$), and special characters (20_{HEX}, 24_{HEX}, 25_{HEX}, $2A_{HEX}$, $2B_{HEX}$, 2D-$2F_{HEX}$) and the data length varies up to 20 characters
I 2 of 5	data is numeric only (30_{HEX} - 39_{HEX}) and the (30_{HEX} - 39_{HEX})
Code 128A	data is numeric, alpha, and special (20_{HEX} – $7F_{HEX}$) and the data length varies up to 20 characters
Code 128B	data is numeric, alpha, and special (20_{HEX} – $7F_{HEX}$) and the data length varies up to 20 characters
Code 128C	data is numeric only (30_{HEX} – 39_{HEX}) and the data length varies with an even number of characters up to 20

Set Vertical Height of Bar Code: [GS]hn ⇒ $1D_{HEX}68_{HEX}$n

[STX]*A[ETX][GS]hn[STX][ETX]** - Sets the vertical height of the bar code. "n" is the variable where n is a range from 01_{HEX} to FF_{HEX} in multiples of 1/8mm.

Set Horizontal Magnification of Bar Code: [GS]wn ⇒ $1D_{HEX}77_{HEX}$n

[STX]*A[ETX][GS]{n[STX][ETX]** - Sets the horizontal magnification of the bar code. "n" is the variable that determines the number of 0.125mm units that are used to establish the module of each bar code symbol. The thick lines are set to twice the value of variable "n". Variable "n" ranges from 2-6 (default is 3).

Select Printing Position of Bar Code Text: [GS]Hn ⇒ $1D_{HEX}48_{HEX}$n

[STX]*A[ETX][GS]Hn[STX][ETX]** - Selects the position of the bar code text. This text is a human readable representation of the data encoded in the bar code. "n" is the variable where:
n = 00_{HEX} to turn **off** bar code text printing
n = 01_{HEX} to print text **above** bar code
n = 02_{HEX} to print text **under** bar code
n = 03_{HEX} to print text **above** and **under** bar code

Select Bar Code Rotation: [GS]Rn ⇒ $1D_{HEX}52_{HEX}$n

[STX]*A[ETX][GS]Rn[STX][ETX]** - Selects the rotation (horizontal or vertical) of the bar code. "n" is the variable where:
n = 00_{HEX} selects **horizontal** (picket fence) bar code
n = 01_{HEX} selects **vertical** (ladder) bar code

Set Print Intensity: [GS]Dn ⇒ $1D_{HEX}44_{HEX}n$

[STX]*A[ETX][GS]Dn[STX][ETX]** - Sets the intensity or darkness on the print. "n" is the variable which ranges from 00_{HEX} to FF_{HEX} where 00_{HEX} is the lightest and FF_{HEX} is the darkest. It is suggested that programmers not utilize this command, accept the default setting of 80_{HEX},and use the stock recommended by Unimark.

Note that if the intensity is set to FF_{HEX}, the print speed is automatically slowed down by the print mechanism so that the power consumption rate is maintained at the proper level. Conversely a lower intensity setting will result in a faster print speed.

Select Normal and Inverse Video Printing: [ESC]bn ⇒ $1B_{HEX}62_{HEX}n$

[STX]*A[ETX][ESC]bn[STX][ETX]** - Selects the normal vs inverse video print mode. "n" is the variable where:
n = 00_{HEX} selects **normal video** print mode
n = 01_{HEX} selects **inverse video** print mode

Printer Reset: [ESC]@ ⇒ $1B_{HEX}40_{HEX}$

[STX]*A[ETX][ESC]@[STX][ETX]** - Resets the printer and cutter mechanism which restores operational defaults and clears the data input buffer.

Send Printer Status: [ESC]v ⇒ $1B_{HEX}76_{HEX}$

[STX]*A[ETX][ESC]v[STX][ETX]** - Requests printer status from the print mechanism. See receipt printer messages section for further details.

Send Printer Identity: [ESC]I ⇒ $1B_{HEX}49_{HEX}$

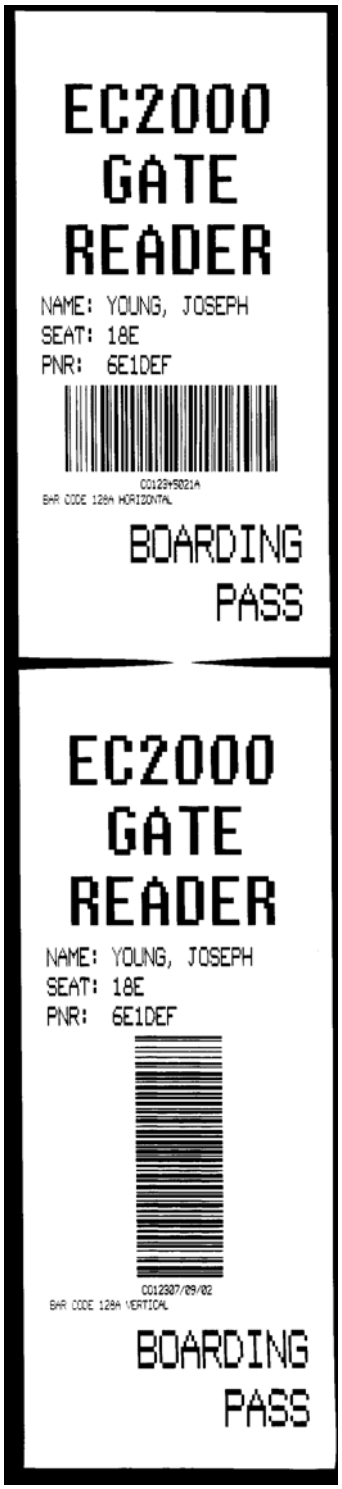
[STX]*A[ETX][ESC]I[STX][ETX]** - Requests printer identification information. See receipt printer messages section for further details.

General Text Printing Notes:

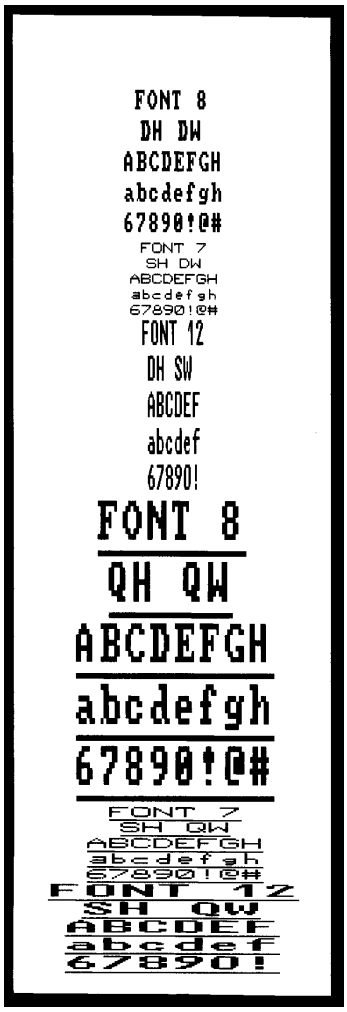
1. Text is printed exactly as sent to the printer.
2. If the text length (line) is longer than the paper width (as calculated by the printer based on the font and print mode selected) the print is automatically wrapped around to the beginning of the next line.
3. Command that selects different fonts and/or sets print modes that affect height and width characteristics must be sent before the text that it is intended to affect.
4. [LF] ($0A_{HEX}$) should be used to move the print position to the beginning of the next line. Correct use of the [LF] will smoothly define the beginning of each line and should eliminate and text wrap issues. [CR] ($0D_{HEX}$) acts the same as [LF]. [CR][LF] = [CR] = [LF]. Unimark suggests just using [LF] to simplify the printer command structure.
5. [LF] also provides an affective way of added spaces, where desired, between lines of text. Note that when using [LF] to provide spaces, the space height equals the height currently defined by the text print mode command.

Receipt Printer Samples

[STX]*A[ETX]
[ESC]C[NUL]
[ESC]![ACK]
[ESC]%[STX]
EC2000[LF]
GATE[LF]
READER[LF]
[ESC]%[SOH]
[ESC]C[STX]
[ESC]!0
NAME: YOUNG, JOSEPH[LF]
SEAT: 18E[LF]
PNR: 6E1DEF[LF]
[ESC]![NUL]
[GS]R[NUL]
[GS]H[STX]
[GS]w[STX]
[GS]k[BEL]<87$_{HEX}$>
CO12345021A[NUL]
BAR CODE 128A<20$_{HEX}$>
HORIZONTAL[LF][LF]
[ESC]![ACK]
[ESC]C[SOH]
BOARDING[LF]
PASS
[ESC]J<80$_{HEX}$>
[ESC]m
[ESC]C[NUL]
[ESC]![ACK]
[ESC]%[STX]
EC2000[LF]
GATE[LF]
READER[LF]
[ESC]%[SOH]
[ESC]C[STX]
[ESC]!0
NAME: YOUNG, JOSEPH[LF]
SEAT: 18E[LF]
PNR: 6E1DEF[LF]
[ESC]![NUL]
[GS]R[SOH]
[GS]H[STX]
[GS]w[STX]
[GS]k[BEL]<87$_{HEX}$>
CO12307/09/02[NUL]
BAR CODE 128A<20$_{HEX}$>
VERTICAL[LF][LF]
[ESC]![ACK]
[ESC]C[SOH]
BOARDING[LF]
PASS
[ESC]J<80$_{HEX}$>
[ESC]i
[STX]**[ETX]



[STX]*A[ETX]
[ESC]C[NUL]
[ESC]!0
[ESC]%[NUL]
A,FONT 8[LF]
DH DW[LF]ABCDEFGH[LF]
abcdefgh[LF]67890!@#[LF]
[ESC]!<20$_{HEX}$>
[ESC]%[SOH]
FONT 7[LF]
SH DW[LF]ABCDEFGH[LF]
abcdefgh[LF]67890!@#[LF]
[ESC]!<10$_{HEX}$>
[ESC]%[STX]
FONT 12[LF]
DH SW[LF]ABCDEF[LF]
abcdef[LF]67890![LF]
[ESC]!<86$_{HEX}$>
[ESC]%[NUL]
FONT 8[LF]
QH QW[LF]ABCDEFGH[LF]
abcdefgh[LF]67890!@#[LF]
[ESC]!<84$_{HEX}$>
[ESC]%[SOH]
FONT 7[LF]
SH QW[LF]ABCDEFGH[LF]
abcdefgh[LF]67890!@#[LF]
[ESC]!<84$_{HEX}$>
[ESC]%[STX]
A,FONT 12[LF]
A,SH QW[LF]A,ABCDEF[LF]
A,abcdef[LF]A,67890![LF]
[ESC]J<80$_{HEX}$>
[ESC]i
[ESC]C[STX]
[STX]**[ETX]



13.0 Response and Error Messages

Error messages are sent by the Unit to the host system in response to either an invalid command from the host, or an invalid operation sequence.

The Unit's message set is broken into AEA, Non-AEA, Bar Code Scanner, and Printer Interface messages.

Some functions are only available/functional on Basic AEA versions or are specific to the EC2000 or the EC2000se.

13.1 AEA Error Messages

ERR1 - Indicates that the operator has manually rejected the inserted ATB coupon by pressing the RESET switch, or an internal timeout has been reached and the Unit automatically rejects the coupon.

ERR2 - Illogical Command Received. Sent to the host system if any command outside the AEA or Non-AEA commands listed here is used.

ERR5 - Unsuccessful Processing Operation. Used specifically to notify the host when the paper sensor detects paper but no mag data is read. Possible circumstances for this error would include insertion of a coupon upside down, coupon is not encoded, or a non-mag coupon/E-ticket is inserted.

ERR6 - No parametric table (PECTAB) available for the coupon inserted.

ERR7 - The Unit responds with this error when receiving a non-CB/CC/CE AEA command after parking an ATB mag coupon (sometimes applicable to bar code reading/processing).

ERR8xx - Erroneous element detected in PECTAB download. **xx** defines the first detected erroneous element.

ERR9 - PECTAB exceeds memory capacity of Unit.

ERRP - When the Unit receives the KP command, it switches to a special firmware download mode. This error message is sent to the host as a response to any AEA command received except the PD (program download) command and certain others allowed in this state such as program version (PV).

13.2 Non-AEA Error Messages

ERRR - Unit detects an invalid reset sequence. After Unit completes its reset process it sends the ERRR message to the host as a means of notifying it that the Unit has been improperly reset (EC2000 only).

13.3 1D Bar Code Scanner Messages (SE9100-552CC equipped EC2000 Units only)

[STX]008[ACK]S[ETX] - Message from scanner indicating that it is in programming mode.

[STX]00F[ACK]**vvvvvvvv**[ETX] - Scanner firmware version message, where **vvvvvvvv** is the firmware version.

[STX]008[ACK]E[ETX] - Message from scanner indicating that it is out of programming mode.

[STX]**ccc**[NAK]**llll**[ETX] - NAK message from scanner indicating that the format of the command received by the scanner was not correct. **ccc** and **llll** will vary depending on the command sent to the scanner.

13.4 Receipt Printer Messages

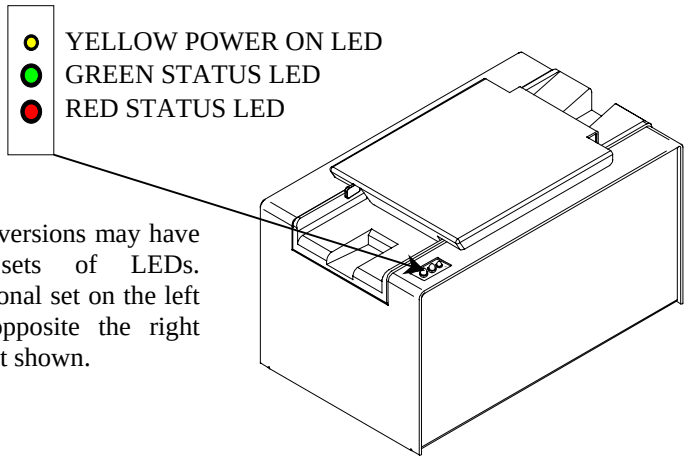
[STX]**mmmmmmmmmmmmmmmmsvv.vv**[NUL][ETX] - ID Message from printer mechanism, where mmmm···mmm is a 16 character length string indicating the print mechanism name (padded with spaces), s is a hard coded space, vv.vv is a 5 character firmware version number (“.” In the middle)

[STX]$\mathbf{XX}_{HEX}$[ETX] - Printer mechanism status byte response (XX = $b_7b_6b_5b_4b_3b_2b_1b_0$).

Bit	Function	Bit = 0	Bit = 1	Bit	Function	Bit = 0	Bit = 1
0	Head temperature	OK	Too high or too low	4	Printer in use	Ready	Action in progress
1	Head-up	No	Yes	5	On/Off line	Off	On
2	Paper out	No	Yes	6	Hole/Mark detection Error	No	Too short, too long or not found
3	Power supply	OK	Too high or too low	7	Cutter failure	Yes	No

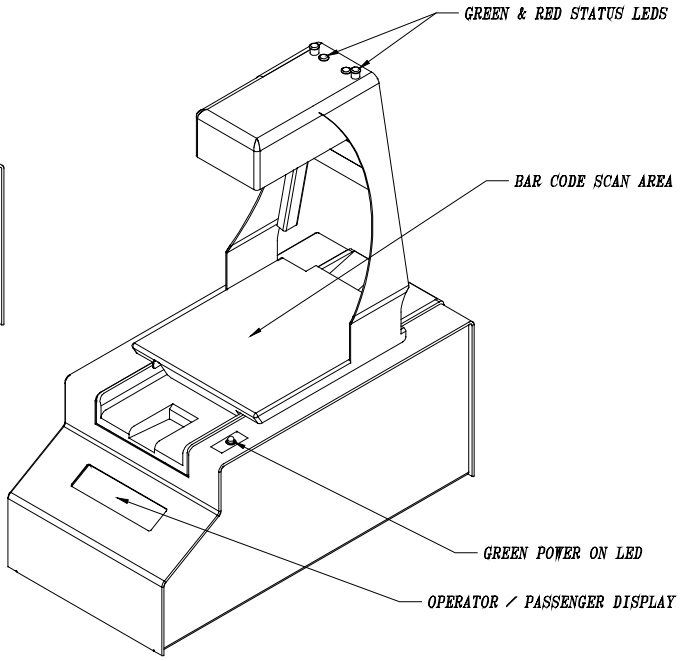
14.0 Models/Options with LED Locations and Function Diagram

14.1 EC2000 Models

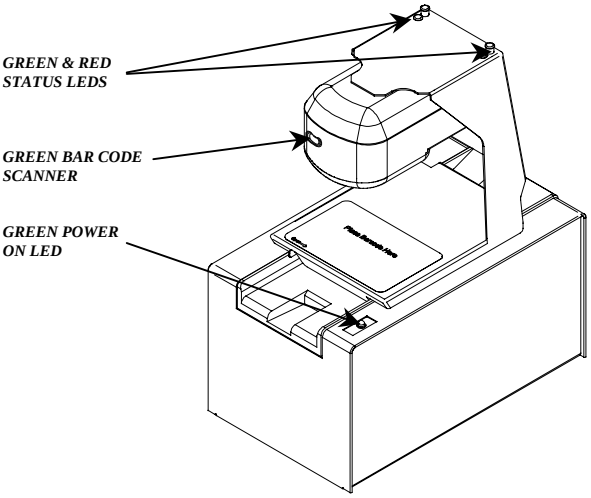


Some versions may have two sets of LEDs. Additional set on the left side opposite the right side set shown.

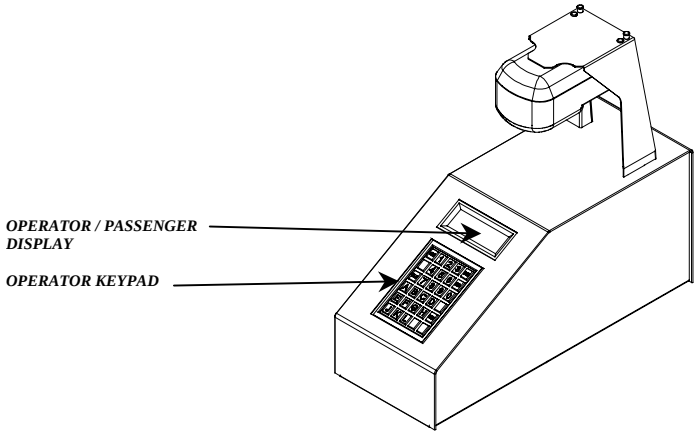
EC2000 Base Model



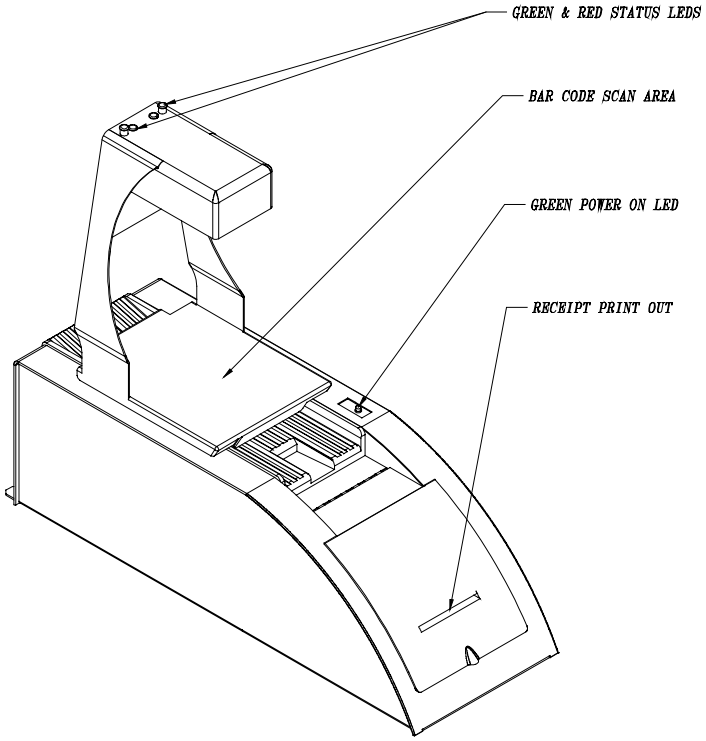
EC2000 with 2D Bar Code Scanner and Display



EC2000 with 1D Bar Code Scanner



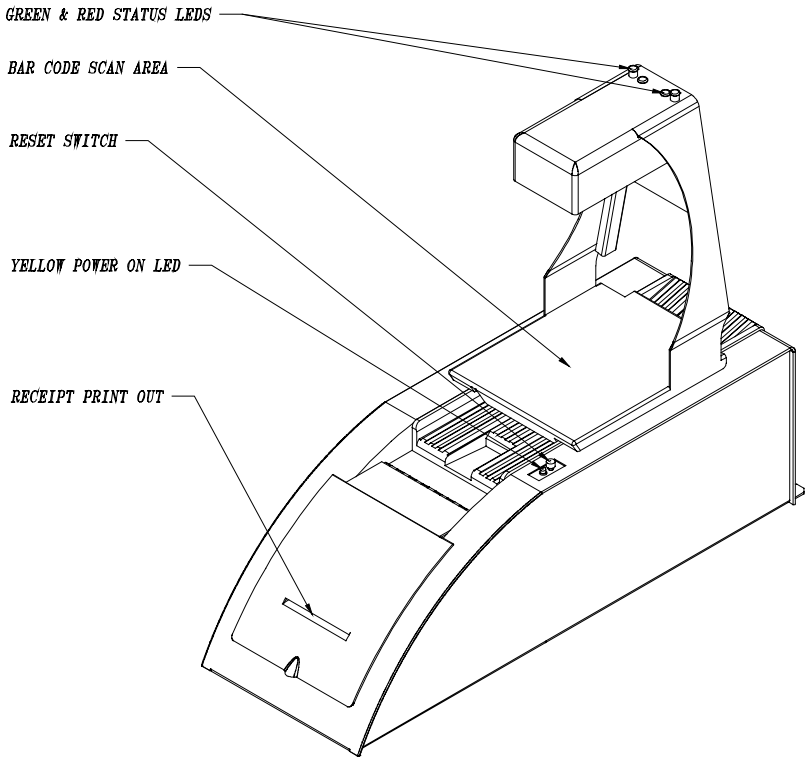
EC2000 with 1D Bar Code Scanner and Terminal (Operator Display and Keypad combination)



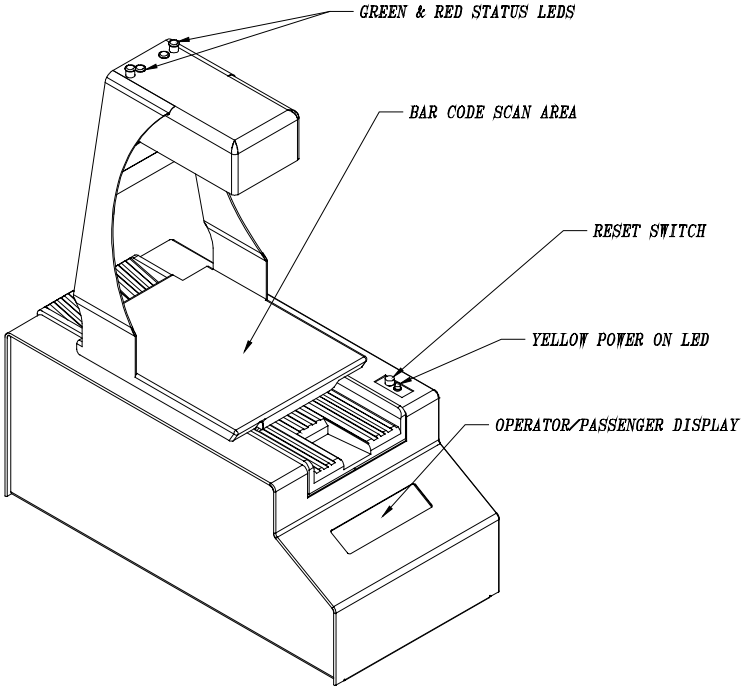
EC2000 with 2D Bar Code Scanner and Receipt Printer

14.2 EC2000se Models

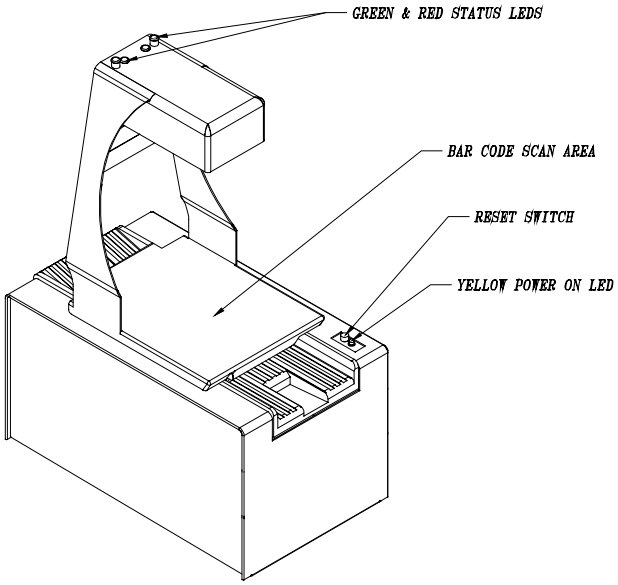
Three primary models of the EC2000se are shown. Contact sales if other variations are required.



EC2000se with 2D Bar Code Scanner and Receipt Printer



EC2000se with 2D Bar Code Scanner and Display



EC2000se with 2D Bar Code Scanner

15.0 Cleaning

The following section is provided to assist in basic cleaning procedures for the Unit. This section is not intended for regular maintenance or repair of the Unit.

15.1 Bar Code Scanners

As a general rule, the bar code scanner option should require very little cleaning. Both the 1D and 2D scanner components are enclosed to minimize effects from the environment.

The primary item requiring cleaning is the scanner lens. The lens prevents access to the scanner laser or image engine. The lens can become dirty from environmental dust and smudged by operators touching the lens.

To clean the lens:

1. Locate a soft non-abrasive/lint free cloth.
2. Wipe the lens area (refer to the Troubleshooting section for diagrams of the 1D and 2D lens locations).
3. If some particles continue to cling to lens area, use canned air to dislodge and clear them away.

DO NOT use a cloth soaked in any cleaning agent. Some cleaning agents can attack the plastic lens material and cause it to become cloudy instead of transparent. Using an abrasive cloth can scratch the lens, and a cloth that is not lint free may cause more material to be collected on the lens than what was originally present.

15.2 ATB MAG Reader

When cleaning the Unit's ATB MAG Reader, the only acceptable cleaning solution is 99% Isopropyl Alcohol.

NEVER use a water based solution to clean the Unit's rollers or read heads. Some water based solutions can damage the rubber elastomer on the rollers. Be very cautious about cleaning pouches like the ones used to clean PC screens. The solution for this type of cleaning pad is typically 50% water and 50% Isopropyl Alcohol and is unacceptable.

Use Unimark ATB cleaning cards (P/N 700-5014-000, –200 or equivalent), which are presoaked in a solution of 99% Isopropyl Alcohol.

To clean the ATB MAG Reader option:

1. Locate the EC2000 Unit and make sure it is powered on and ready to accept an ATB coupon (this may require host setup to enable the ATB Mag input; Look for display messages like Shutter Closed, Link down, or Insert Coupon)
2. Tear open the ATB cleaning card pouch
3. Insert the cleaning card just as though it were an ATB coupon to be read
4. Flip the card over and reinsert the cleaning card again
5. Repeat a couple more times

Note that the cleaning card will dry out very quickly with 99% Isopropyl Alcohol. Do not insert the cleaning card dry.

15.3 Receipt Printer

Turn the Unit off before attempting any cleaning procedure on the receipt printer.

Use a cleaning solution of 99% Isopropyl Alcohol and a lint free cloth or swab.

NEVER use a water based solution to clean the printers platen roller. Some water based solutions can damage the Platen.

To clean the ATB MAG Reader option:

1. Open the access door on the Unit and flip the cutter mechanism down.
2. Flip the green print head position lever and release the print head free from the platen roller. Use the green knob and rotate the platen roller looking for pieces of label stock. Clean the platen roller using the cleaning solution and cloth or swab.
3. Using the green lever, flip the print head back against the platen roller.
4. Check the cutter mechanism for pieces of label stock. Wipe the mechanism with a list free cloth or swab. It is not recommended to use any kind of cleaning solution on the cutter mechanism.

If the cutter blade is not in the lower (home) position or appears to be stuck, you may use the gear knob in the front of the cutter (identified by an up and down arrow) to manually move the blade. Rotate the gear knob using a small flat blade screwdriver. When the Unit is powered on, the cutter should automatically reset to the home position.

Note that the knob is geared so that you must turn it many turns to move the blade only a very slight amount.

16.0 Troubleshooting

The following section is provided to assist in the installation of the Unit, and covers the issues which commonly exist when installing new equipment. This section is not intended for regular maintenance or repair of the Unit.

1.0 Unit will not power up

1.1 Verify AC plug is installed into the rear of the Unit.
1.2 Check the AC line level. The Unit is designed to operate at voltages as low as 90VAC.

2.0 Unit will not communicate with the host system

2.1 Verify communication cable is plugged into the connector marked HOST on the rear of the Unit.
2.2 Verify that the communication parameters of the host system match the Unit's host port parameters.

3.0 Unit will not recognize a coupon when inserted into the ATB MAG read slot

3.1 Verify that the optical sensor in the front of the ATB MAG read slot is not exposed directly to sunlight. Relocate the Unit if necessary.

3.2 Verify that the optical sensor is free of foreign material. Clear sensor if blocked.

3.3 The EC2000se also incorporates a rear sensor, which must be clear for stock to be properly recognized and processed.

4.0 Cannot read the display

4.1 Verify that the display is not exposed directly to sunlight. LCD displays can be difficult to see in sunlight. Relocate the Unit if necessary. Vacuum Florescent displays are more visible in brightly lighted areas.

4.2 Shade the display with your hand. If the display still cannot be seen, return the Unit to Unimark or a certified service center.

5.0 Optional Internal 1D bar code scanner will not transmit data or appears to be off (EC2000 only)

5.1 Verify that the 6-pin RJ connector is plugged into the connector marked MAINT on the rear of the Unit.

5.2 If the bar code scanner was installed at the airport site location, it is possible that the communication parameters are not set. Use the configuration bar codes in the back of the manual to establish the minimum parameter settings to allow the scanner to be configured via the host system.

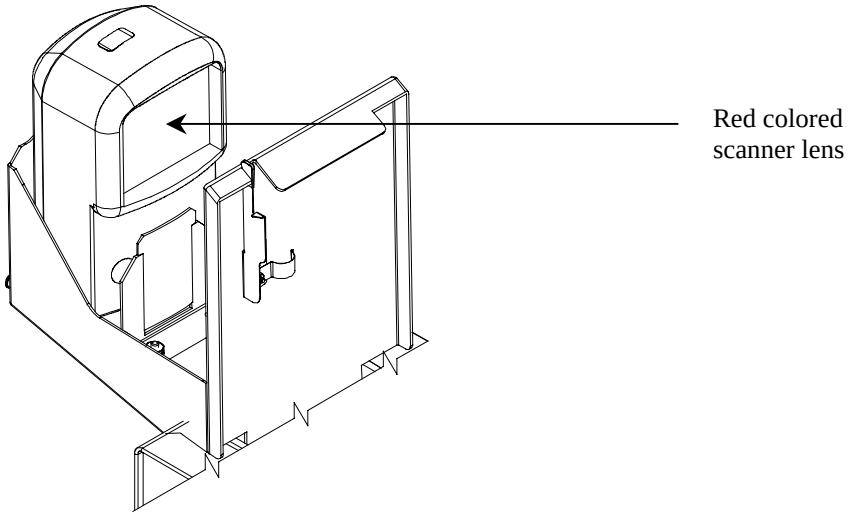
5.3 If the bar code scanner appears to be powered off:

5.3.1 Remove the bar code mounting clamp.

5.3.2 Remove the bar code scanner and verify the interface connection.

5.4 Verify that the bar code scan area is not exposed directly to sunlight. Relocate the Unit if necessary.

5.5 If the scanner reads bar codes randomly, the scanner lens may be dirty or smudged. Locate the scanner lens area (as shown below) and clean with a soft non-abrasive/lint free cloth.



6.0 Optional Internal 2D bar code scanner will not transmit data, appears to be off, or flashes continuously

6.1 Verify that the 6-pin RJ connector is plugged into the connector marked MAINT on the rear of the Unit (EC2000 only).

6.2 If the bar code scanner was installed at the airport site location, it is possible that the communication parameters are not set. Use the configuration bar codes in the back of the manual to establish the minimum parameter settings to allow the scanner to communicate with the Unit.

6.3 If the bar code scanner illumination LEDs flash continuously or erratically, the scanner may not be locking onto the scan stand symbol:

6.3.1 Clean the scanner lens.

6.3.2 Verify that the scan stand symbol label is intact below the scanner mount.

6.3.3 Verify that the scan stand symbol label is clean and has not been marked up (label is white background with a 1D style symbol centered on the surface). Clean the label with a 50% alcohol and 50% water mixture or equivalent cleaner. Replace label if necessary.

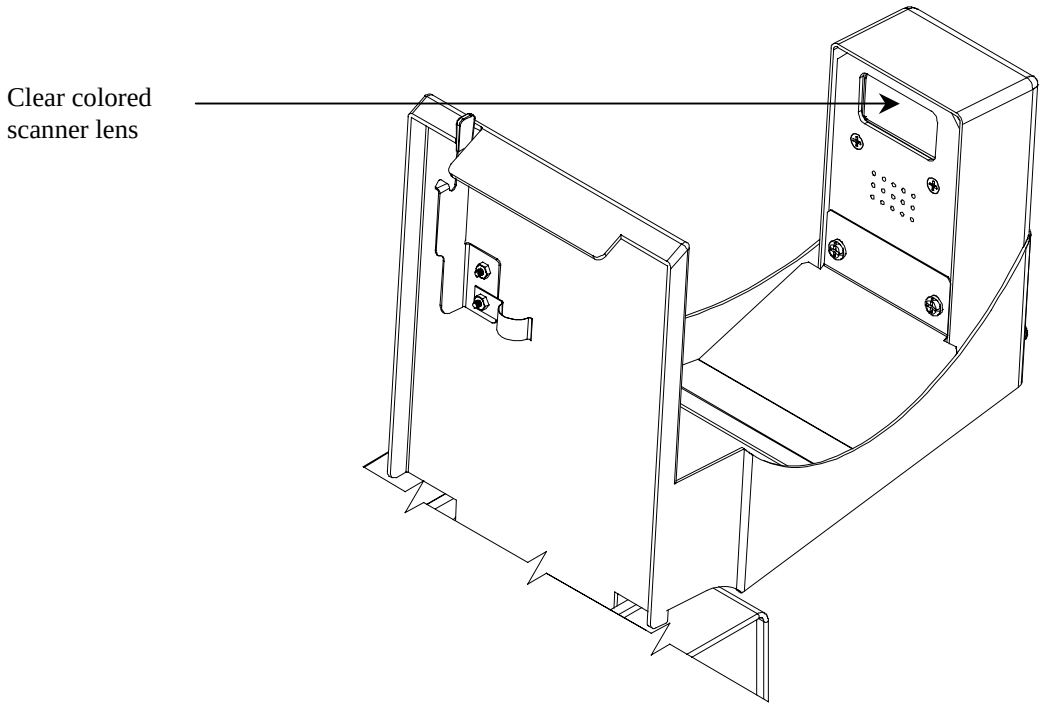
6.4 If the bar code scanner appears to be powered off:

6.4.1 Cover the scan stand symbol on the white label below. This should cause the scanner to turn on (flash) its illumination LEDs so the scanner can read a bar code.

6.4.2 If the LEDs do not turn on, remove the cable cover/clamp.

6.4.3 Remove the bar code scanner and verify the interface connection.

6.5 If the scanner reads bar codes randomly, the scanner lens may be dirty or smudged. Locate the scanner lens area (as shown below) and clean with a soft non-abrasive/lint free cloth.



If the Unit still does not function properly, contact Unimark Service at (800) 255-6356 or (913) 649-2424.

17.0 Customer/Technical Support

17.1 Return Authorization/Customer Service

To return a product to Unimark for repair or other assistance, please be prepared with the following information before calling our Customer Service department at (800) 255-6356 or (913) 649-2424 (U.S. office).

- Customer name and telephone number
- Product model number or description
- Product serial number
- Description of failure
- Billing address
- Customer ship to address and method of shipping
- Repair option selection (Warranty, Flat Rate, Time and Materials or Refurbishment)

Our Customer Service Specialist will be entering the information into our system during your call to ensure quick and accurate handling of your return. You will then be given a return authorization number. Perform the following steps to complete the return process:

1.0 Prepare item for return to Unimark - Do NOT include accessories, power cable or ancillary items unless directed otherwise by Customer Service. **DO NOT SHIP WITH RECEIPT PAPER ROLL INSTALLED!**

2.0 Packaging – Use original packaging materials or equivalent. If not available, Unimark can provide at a small cost.

3.0 Enter the RA # on the packing list and on the outside of the container in at least two locations for easy identification at Unimark.

4.0 Shipping label to include return address as well as “ship to”.

5.0 Notify your “carrier of choice” for pick-up and delivery to Unimark.

17.2 Technical Support

As a purchaser or Unimark authorized third party maintainer of Unimark products, you have the added benefit of technical assistance in the installation, diagnosis and use of Unimark products.

Just call our toll free number (800) 255-6356 or (913) 649-2424 and allow the auto-attendant to guide you to our technical support line. A technical support analyst will assist you.

To better serve you, please have the product in question on-line and ready to test prior to calling technical support. In addition, have the following information available:

- Model Number/description
- Serial Number
- Failure message/code/description

Unimark operates two service support centers. Select the office closest to you from the Unimark Contacts web page (www.unimark.com). The customer support telephone number and e-mail address are listed for your convenience.

18.0 Configuration Bar Codes

18.1 1D SE9100-552CC Equipped EC2000 Units

The following section contains special bar codes which can be used to configure the bar code reading performance on the integrated 1D bar code scanner module. The bar codes in this section only function with the integrated 1D bar code scanner module (specified above) and are not compatible with any other bar code scanners which may be interconnected with the Unit.

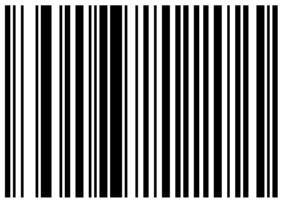
The primary purpose is to provide a means to fine tune or configure the scanning performance of the three primary 1D bar code formats used in the industry. These formats are Code 128, Code 39, and Interleaved 2 of 5.

Contact Unimark if more enhanced options or changes are required for your operation.

As a general rule, the fewer bar code options that are turned on the better the performance of the Unit. For example, if only Code 128 will be used for your application, turning off or disabling all other types will typically improve the performance of the scanner because it will have fewer parameters to manage.

When configuring the integrated 1D bar code scanner module with these bar codes, it is important to scan only one bar code at a time and avoid double and multiple scans. If necessary, photocopy the page(s) with the required bar codes and cut the pages down so that only one bar code appears on each page.

AIM CODE ID CHARACTER (SE9100-552CC)

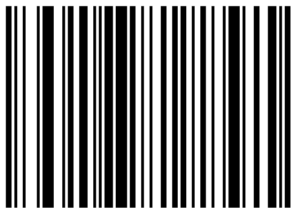


Scan this bar code to enable the AIM Code ID Character prefix.

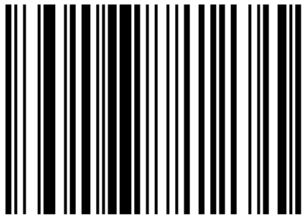
This prefix identifies the code type of the scanned bar code. This may be useful when the scanner is decoding more than one code type.

This option is turned on by default and should not be turned off. Some customer firmware versions strip out or alter the AIM Code ID before sending the data to the host system.

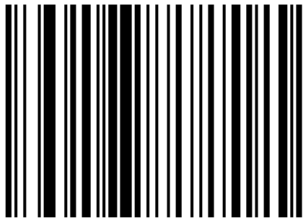
SETTING COMMUNICATION PARAMETERS (SE9100-552CC)



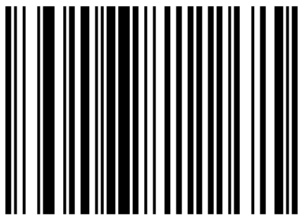
BAUD RATE 9600



EVEN

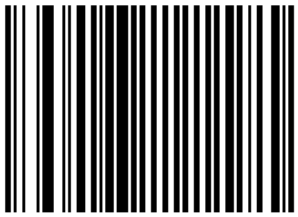


7-BIT

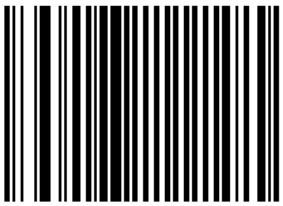


1 STOP BIT

ENABLE/DISABLE CODE 128 (SE9100-552CC)



ENABLE CODE 128

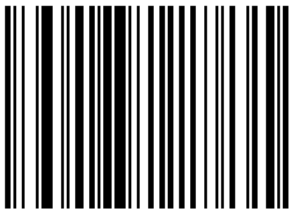


DISABLE CODE 128

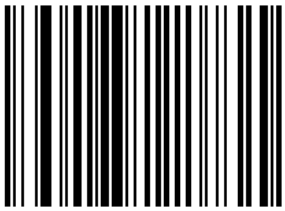
ENABLE/DISABLE CODE 128 DECODE PERFORMANCE (SE9100-552CC)

This option offers three levels of decode performance or "aggressiveness" for Code 128 symbols. Increasing the performance level reduces the amount of required bar code orientation, which is useful if you are scanning very long and/or truncated bar codes.

If you enable this option, you may select a Decode Performance level from the next page.

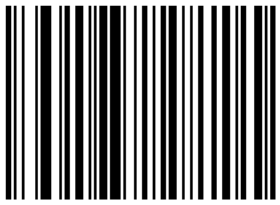


ENABLE CODE 128 DECODE PERFORMANCE

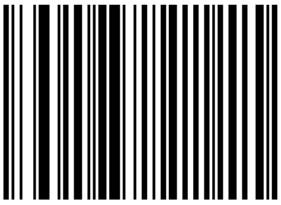


DISABLE CODE 128 DECODE PERFORMANCE

SELECT CODE 128 DECODE PERFORMANCE LEVEL (SE9100-552CC)



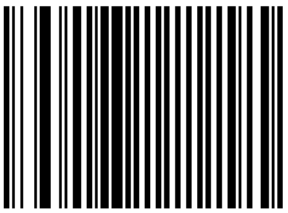
CODE 128 DECODE PERFORMANCE LEVEL 1



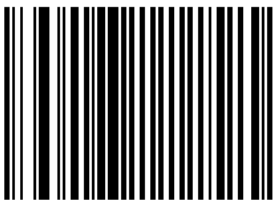
CODE 128 DECODE PERFORMANCE LEVEL 2

CODE 128 DECODE PERFORMANCE LEVEL 3

ENABLE/DISABLE CODE 39 (SE9100-552CC)



ENABLE CODE 39

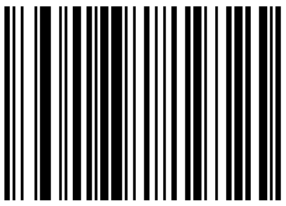


DISABLE CODE 39

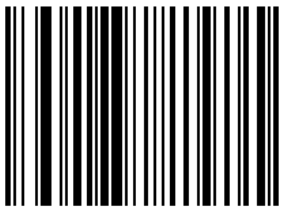
ENABLE/DISABLE CODE 39 DECODE PERFORMANCE (SE9100-552CC)

This option offers three levels of decode performance or "aggressiveness" for Code 39 symbols. Increasing the performance level reduces the amount of required bar code orientation, which is useful if you are scanning very long and/or truncated bar codes.

If you enable this option, you may select a Decode Performance level from the next page.

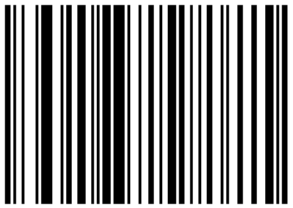


ENABLE CODE 39 DECODE PERFORMANCE

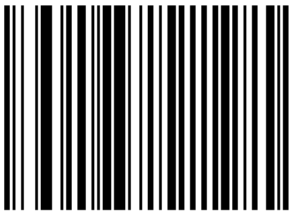


DISABLE CODE 39 DECODE PERFORMANCE

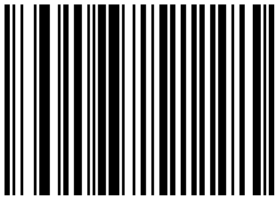
SELECT CODE 39 DECODE PERFORMANCE LEVEL (SE9100-552CC)



CODE 39 DECODE PERFORMANCE LEVEL 1



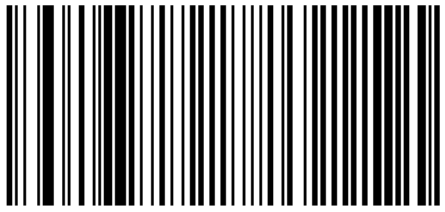
CODE 39 DECODE PERFORMANCE LEVEL 2



CODE 39 DECODE PERFORMANCE LEVEL 3

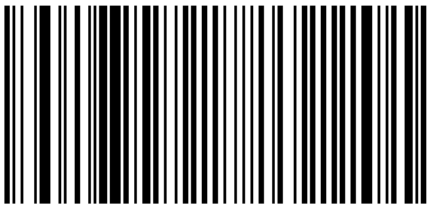
SELECT CODE 39 DECODE RANGE (SE9100-552CC)

Lengths for Code 39 may be set for any length, one or two discrete lengths, or lengths within a specific range. The length of a code refers to the number of characters (i.e., human readable characters) the code contains.



CODE 39 - ONE DISCRETE LENGTH

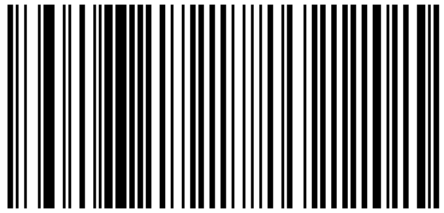
This option allows you to decode only those codes containing a selected length. For example, if you select **Code 39 One Discrete Length**, then scan numeric bar codes **1**, **4**, only symbols containing 14 characters are decoded. Numeric barcodes are at the end of this section.



CODE 39 - TWO DISCRETE LENGTHS

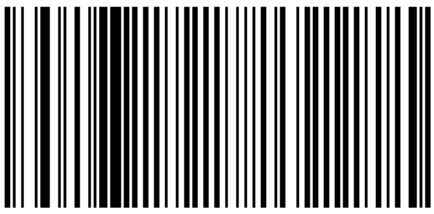
This option allows you to decode only those codes containing two selected lengths. For example, if you select **Code 39 Two Discrete Lengths**, then scan numeric bar codes **0**, **2**, **1**, **4**, (single digit numbers must always be preceded by a leading zero) only symbols containing 2 or 14 characters are decoded. Numeric barcodes are at the end of this section.

SELECT CODE 39 DECODE RANGE (SE9100-552CC)



CODE 39 - LENGTH WITHIN RANGE

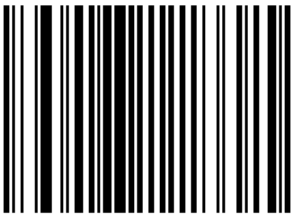
This option allows you to decode a code type within a specified range. For example, to decode symbols containing between 4 and 12 characters, first scan **Code 39 Length Within Range**. Then scan numeric bar codes **0**, **4**, **1, 2** (single digit numbers must always be preceded by a leading zero). Numeric barcodes are at the end of this section.



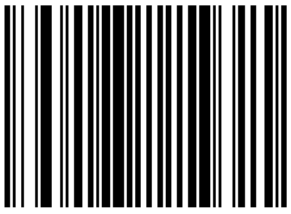
CODE 39 - ANY LENGTH

This option will allow decoding of any length Code 39 symbol as long as it is small enough to fit within the scanning range of the Unit.

ENABLE/DISABLE INTERLEAVED 2 OF 5 (SE9100-552CC)



ENABLE I 2 OF 5

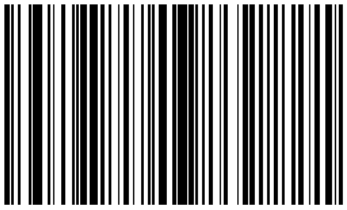


DISABLE I 2 OF 5

SELECT INTERLEAVED 2 OF 5 DECODE RANGE (SE9100-552CC)

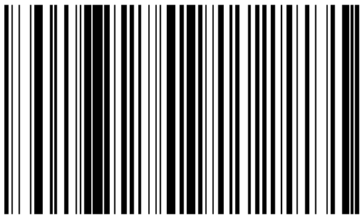
Lengths for Interleaved 2 of 5 may be set for any length, one or two discrete lengths, or lengths within a specific range. The length of a code refers to the number of characters (i.e., human readable characters) the code contains.

Note: Interleaved 2 of 5 is susceptible to misreads. It is strongly suggested that the any length option NOT be used.



I 2 of 5 - ONE DISCRETE LENGTH

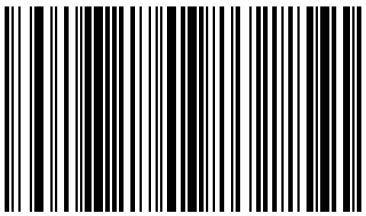
This option allows you to decode only those codes containing a selected length. For example, if you select **Interleaved 2 of 5 One Discrete Length**, then scan numeric bar codes **1**, **4**, only symbols containing 14 characters are decoded. Numeric barcodes are at the end of this section.



I 2 of 5 - TWO DISCRETE LENGTHS

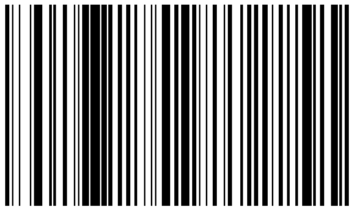
This option allows you to decode only those codes containing two selected lengths. For example, if you select **Interleaved 2 of 5 Two Discrete Lengths**, then scan numeric bar codes **0**, **2**, **1**, **4**, (single digit numbers must always be preceded by a leading zero) only symbols containing 2 or 14 characters are decoded. Numeric barcodes are at the end of this section.

SELECT INTERLEAVED 2 OF 5 DECODE RANGE (SE9100-552CC)



I 2 of 5 - LENGTH WITHIN RANGE

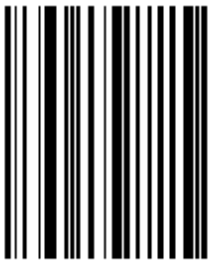
This option allows you to decode a code type within a specified range. For example, to decode symbols containing between 4 and 12 characters, first scan **Interleaved 2 of 5 Length Within Range**. Then scan numeric bar codes **0**, **4**, **1, 2** (single digit numbers must always be preceded by a leading zero). Numeric barcodes are at the end of this section.



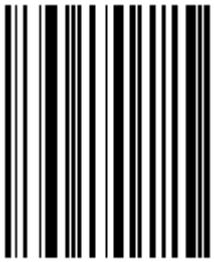
I 2 of 5 - ANY LENGTH

This option will allow decoding of any length Interleaved 2 of 5 symbol as long as it is small enough to fit within the scanning range of the Unit.

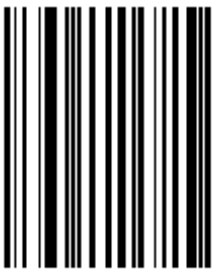
NUMERIC BAR CODES (SE9100-552CC)



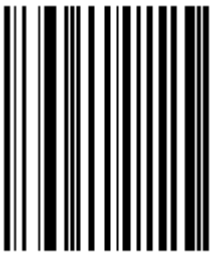
0



1

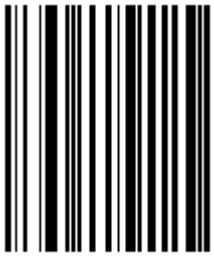


2

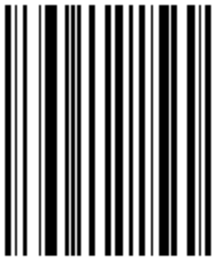


3

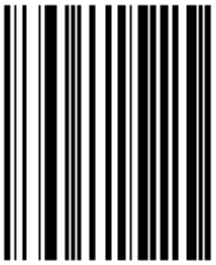
NUMERIC BAR CODES (SE9100-552CC)



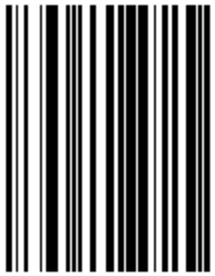
4



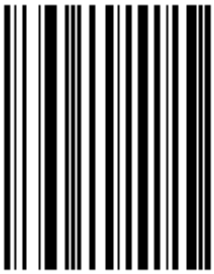
5



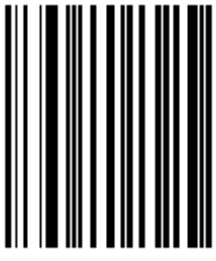
6



7



8



9

18.2 1D MS860i Equipped Units

The following section contains special bar codes which can be used to configure the bar code reading performance on the external In-Counter 1D bar code scanner module. The bar codes in this section only function with the external 1D bar code scanner module (specified above) and are not compatible with any other bar code scanners which may be interconnected with the Unit.

The primary purpose is to provide the basic programming configuration to make the bar code scanner module communicate and operate with the Unit.

Contact Unimark if more enhanced options or changes are required for your operation.

When configuring the external 1D bar code scanner module with these bar codes, it is important to scan each bar code in the exact order shown here and to scan only one bar code at a time. Avoid double and multiple scans. If necessary, photocopy the page(s) with the required bar codes and cut the pages down so that only one bar code appears on each page.

ENTER PROGRAMMING MODE (MS860i)

Enter/Exit Program Mode

DISABLE IR TIMEOUT/SLEEP MODE (MS860i)

No Touchplate/IR Time-outs

AIM CODE ID CHARACTER (MS860i)

Transmit AIM ID Characters

Scan this bar code to enable the AIM Code ID Character prefix.

This prefix identifies the code type of the scanned bar code. This may be useful when the scanner is decoding more than one code type.

This option is turned on by default and should not be turned off. Some customer firmware versions strip out or alter the AIM Code ID before sending the data to the host system.

PREVENT/BLOCK SAME SYMBOL SCAN (MS860i)

*Disable No Same Symbol Time-out

Scanning this bar code will set-up the Unit so that it will NOT duplicate the scan of the same bar code symbol.

Same Symbol Rescan Time-out: 1250

Scan this bar code to set the same symbol rescan timeout to 1250mSec (1.25 Sec).

SETTING COMMUNICATION PARAMETERS (MS860i)

*9600 Baud Rate

Even Parity

*7 Data Bits

CONFIGURE END OF TEXT CHARACTERS or SUFFIX (MS860i)

Enable ETX Suffix

Disable Carriage Return (CR)

Disable Line Feed

ENABLE BEEP ON BEL (MS860i)

Enable Reserved Code 22

Enable BEEP on BEL

EXIT PROGRAMMING MODE (MS860i)

Enter/Exit Program Mode

Scan this bar code to exit the programming mode on the bar code scanner module.

18.3 1D MS7600 Series Equipped Units

The following section contains special bar codes which can be used to configure the bar code reading performance on the external In-Counter 1D bar code scanner module. The bar codes in this section only function with the external 1D bar code scanner module (specified above) and are not compatible with any other bar code scanners which may be interconnected with the Unit.

The primary purpose is to provide the basic programming configuration to make the bar code scanner module communicate and operate with the Unit.

Contact Unimark if more enhanced options or changes are required for your operation.

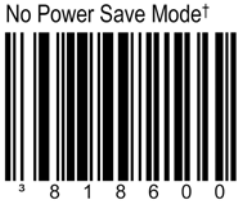
When configuring the external 1D bar code scanner module with these bar codes, it is important to scan each bar code in the exact order shown here and to scan only one bar code at a time. Avoid double and multiple scans. If necessary, photocopy the page(s) with the required bar codes and cut the pages down so that only one bar code appears on each page.

ENTER PROGRAMMING MODE (MS7625)

Enter/Exit Configuration Mode

DISABLE POWER SAVE MODE (MS7625)

No Power Save Mode†



AIM CODE ID CHARACTER (MS7625)

Enable AIM ID Characters

Scan this bar code to enable the AIM Code ID Character prefix.

This prefix identifies the code type of the scanned bar code. This may be useful when the scanner is decoding more than one code type.

This option is turned on by default and should not be turned off. Some customer firmware versions strip out or alter the AIM Code ID before sending the data to the host system.

SAME SYMBOL SCAN TIMEOUT (MS7625)

Same Symbol Time Out
2000 msecs

SETTING COMMUNICATION PARAMETERS (MS7625)

* 9600 BAUD Rate

Even Parity

* 7 Data Bits

1 Stop Bit

CONFIGURE END OF TEXT CHARACTERS or SUFFIX (MS7625)

Enable ETX Suffix

Disable CR Suffix

Disable LF Suffix

ENABLE BEEP ON BEL (MS7625)

Beep on BEL Command

EXIT PROGRAMMING MODE (MS7625)

Enter/Exit Configuration Mode

18.4 2D 4250 Image Engine Equipped Units

The following section contains special bar codes which can be used to configure the bar code reading performance on the integrated 2D bar code scanner module. The bar codes in this section only function with the integrated 2D bar code scanner module (specified above) and are not compatible with any other bar code scanners which may be interconnected with the Unit.

The primary purpose is to provide the basic programming configuration to make the bar code scanner module communicate and operate with the Unit.

Contact Unimark if more enhanced options or changes are required for your operation.

When configuring the internal 2D bar code scanner module with these bar codes, it is important to scan each bar code in the exact order shown here and to scan only one bar code at a time. Avoid double and multiple scans. If necessary, photocopy the page(s) with the required bar codes and cut the pages down so that only one bar code appears on each page.

AIM CODE ID CHARACTER (4250 IMAGE ENGINE)

Add AIM ID Prefix
All Symbologies

Scan this bar code to enable the AIM Code ID Character prefix.

This prefix identifies the code type of the scanned bar code. This may be useful when the scanner is decoding more than one code type.

This option is turned on by default and should not be turned off. Some customer firmware versions strip out or alter the AIM Code ID before sending the data to the host system.

CONFIGURE POWER HOLD MODE (4250 IMAGE ENGINE)

On

Scanning this bar code will set-up the Unit so that the scanner module will always be in the ready to read state.

SETTING COMMUNICATION PARAMETERS (4250 IMAGE ENGINE)

9600

Even

7 Data Bits

* 1 Stop Bit

CONFIGURE END OF TEXT CHARACTERS or SUFFIX (4250 IMAGE ENGINE)

Clear All Suffixes

Add Suffix †

Scanning this bar code will set-up the Unit so accept the new ETX suffix entry. Following bar codes must be scanned in order (9, 9, 0, 3, then SAVE). Scanning out of order will not configure the ETX as 03_{HEX} as required.

9

9

ADD [ETX] SUFFIX FOR ALL BAR CODE FORMATS (4250 IMAGE ENGINE)

0

3

Save

Scanning this bar code accepts and saves the new ETX suffix entry.

CONFIGURE SCAN MODES (4250 IMAGE ENGINE)

Note that these operating modes can be turned on independently or together, but at least one MUST be turned on for the unit to operate and scan bar codes.

NEVER TURN BOTH MODES OFF AT THE SAME TIME. If both modes are turned off at the same time, the scanner module will have to be removed from the unit and reprogrammed using the trigger button on the interface board of the scanner module.

On

* Off

SCAN STAND MODE

These bar codes can be used to switch the unit in and out of the Scan Stand mode. In this mode it remains idle as long as it sees the Scan Stand symbol. When the Scan Stand symbol is covered (by presenting a bar code to be read), the scan engine is triggered to read the new code. Once the coupon is removed, the scan engine locks onto the Scan Stand symbol and switches back into the idle state.

The Scan Stand mode takes precedence over the Presentation mode. When turned off, the scan engine operates as detailed below.

On

PRESENTATION MODE

Scanning this bar code enables the Presentation mode. In this mode (when Scan Stand mode is turned off) the unit does not power off the illumination LEDs and does not go into an idle state. The scan engine continually scans for variations in the view area. A white background (or Scan Stand symbol label) is required to be placed below the scan engine so that it can determine changes or variations in the view area.

To enable the Presentation Mode, disable or turn OFF the Scan Stand mode using the bar code above.

This mode is turned on by default and should NEVER be turned off.

18.5 2D 4080 Image Engine Equipped Units

The following section contains special bar codes which can be used to configure the bar code reading performance on the integrated 2D bar code scanner module. The bar codes in this section only function with the integrated 2D bar code scanner module (specified above) and are not compatible with any other bar code scanners which may be interconnected with the Unit.

The primary purpose is to provide the basic programming configuration to make the bar code scanner module communicate and operate with the Unit.

Contact Unimark if more enhanced options or changes are required for your operation.

When configuring the internal 2D bar code scanner module with these bar codes, it is important to scan each bar code in the exact order shown here and to scan only one bar code at a time. Avoid double and multiple scans. If necessary, photocopy the page(s) with the required bar codes and cut the pages down so that only one bar code appears on each page.

SET COMMUNICATION PARAMETERS (4080 IMAGE ENGINE)

7 BITS, 1 STOP, EVEN PARITY

9600 BAUD RATE

ADD PREFIX

SELECT ALL BC (9)

SELECT ALL BC (9)

SELECT AIM ID (5)

SELECT AIM ID (C)

SELECT AIM ID (8)

SELECT AIM ID (1)

SAVE AIM ID PREFIX

ADD SUFFIX

SELECT ALL BC (9)

SELECT ALL BC (9)

SELECT ETX (0)

SELECT ETX (3)

SAVE ETX SUFFIX

IMAGER TIMEOUT

SET TIMEOUT TO ∞

SAVE TIMEOUT SETTING

SET REREAD DELAY TO 2SEC

DISABLE TIMEOUTS and SET REREAD DELAY (4080 IMAGE ENGINE)

OFF

HIGH LED POWER LEVEL (100%)

LOW LED POWER LEVEL (50%)

CONFIGURE SCAN MODES (4080 IMAGE ENGINE)

Note that these operating modes can be turned on independently or together, but at least one MUST be turned on for the unit to operate and scan bar codes.

NEVER TURN BOTH MODES OFF AT THE SAME TIME. If both modes are turned off at the same time, the scanner module will have to be removed from the unit and reprogrammed using the trigger button on the interface board of the scanner module.

SCAN STAND MODE

These bar codes can be used to switch the unit in and out of the Scan Stand mode. In this mode it remains idle as long as it sees the Scan Stand symbol. When the Scan Stand symbol is covered (by presenting a bar code to be read), the scan engine is triggered to read the new code. Once the coupon is removed, the scan engine locks onto the Scan Stand symbol and switches back into the idle state.

The Scan Stand mode takes precedence over the Presentation mode. When turned off, the scan engine operates as detailed below.

PRESENTATION MODE

Scanning this bar code enables the Presentation mode. In this mode (when Scan Stand mode is turned off) the unit does not power off the illumination LEDs and does not go into an idle state. The scan engine continually scans for variations in the view area. A white background (or Scan Stand symbol label) is required to be placed below the scan engine so that it can determine changes or variations in the view area.

To enable the Presentation Mode, disable or turn OFF the Scan Stand mode using the bar code above.

This mode is turned on by default and should NEVER be turned off.

19.0 Unimark Products, LLC. Warranty Statement

Reader

Unimark Products, LLC. warrants to Purchaser that under normal use and service, the products (with the exception of the magnetic read heads, rollers, and belts) purchased hereunder shall be free from defects in material and workmanship for a period of one year (365 days) from the date of shipment by Unimark.

Expendable and/or consumable items or parts such as lamps, fuses, and labels are not covered under this warranty. This warranty does not cover equipment or parts, which have been misused, altered, neglected, handled carelessly, or used for purposes other than those for which they were manufactured. This warranty also does not cover loss, damages resulting from accidents, or damages resulting from unauthorized service.

Magnetic Read Heads, Rollers and Belts

This warranty is limited to a period of one year, (365 days) or 1,000,000 linear inches of use, whichever comes first, for the magnetic read heads, rollers, and belts. This warranty does not cover magnetic read heads, rollers, and belts which have been misused, altered, neglected, handled carelessly, or damaged due to improper cleaning or unauthorized repairs.

Warranty Service Procedures

If a defect should occur during the warranty period, the defective Unit shall be returned, freight and insurance prepaid, in the original shipping containers, to Unimark Products, LLC. A Return Authorization (RA) number must be issued before the product can be returned. To open an RA, please call the Customer Service Department at (800) 255-6356 or (913) 649-2424. Please print your RA number on the outside of the box and on the shipping document. Include a contact name, action desired, a detailed description of the problem(s), and examples when possible with the defective Unit. Unimark shall not be responsible for any loss or damages incurred in shipping. Any warranty work to be performed by Unimark shall be subject to Unimark's confirmation that such product meets Unimark warranty. In the event of a defect covered by its warranty, Unimark will return via ground transportation, the repaired or replaced product to the Purchaser at Unimark's cost.

With respect to a defect in hardware covered by the warranty, the warranty shall continue in effect until the end of the original warranty period, or for ninety (90) days after the repair or replacement, whichever is later.

General Warranty Provisions

Unimark makes no warranty as to the design, capability, capacity or suitability of any of its hardware, supplies, or software.

Software is licensed on an "as is" basis without warranty. Except and to the extent expressly provided in this warranty and in lieu of all other warranties, there are no warranties, expressed or implied, including, but not limited to, any warranties of merchantability or fitness for a particular purpose.

Purchaser shall be solely responsible for the selection, use, efficiency and suitability of Unimark's products.

Limitation of Liability

In no event shall Unimark be liable to the purchaser for any indirect, special or consequential damages or lost profits arising out of or relating to Unimark's products, or the performance or a breach thereof, even if Unimark has been advised of the possibility thereof. Unimark's liability, if any, to the purchaser or to the customer of the purchaser hereunder shall in no event exceed the total amounts paid to Unimark hereunder by the purchaser for a defective product.

In no event shall Unimark be liable to the purchaser for any damages resulting from or related to any failure or delay of Unimark in the delivery or installation of the computer hardware, supplies or software or in the performance of any services.

Some states do not permit the exclusion of incidental or consequential damages, and in those states the foregoing limitations may not apply. The warranties herein give you specific legal rights, and you may have other legal rights which vary from state to state.