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

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.
3. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure

To comply with FCC RF exposure requirements for mobile transmitting devices, this transmitter should only be used or installed at locations where there is at least 20cm separation distance between the antenna and all persons.

FCC ID

NUC-BEPM13

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Technical Support

Brady Worldwide, Inc. provides several Brady WavePoint™ XE2000 system support options:

1. To speak with a Technical Support Representative, call (800) 643-8766; Monday – Friday 7:00 a.m. – 7:00 p.m. (CST), or

2. FAX your inquiry to (414) 358-6767, or

3. Contact Brady's Technical Support Team on-line at: tech_support@bradycorp.com.

Technical Support / Canada	(800) 643-8766
Technical Support / Europe	32-52-457.994

Table of Contents

Chapter 1 - Getting Started

Brady WavePoint™ XE2000 is designed to be an integral part of your asset management and tracking system. The XE2000 is easy to use right out of the box, and works with a variety of RFID Smart Labels and thermal transfer printers.

Unpacking the XE2000

Take a few moments to read over this documentation and inventory the contents of your shipment.

When unpacking the Brady WavePoint™ XE2000, use a sharp knife or razor to carefully cut along the taped seam on top of the carton, and open it. Remove the material cushioning the XE2000 and lift it from the carton.

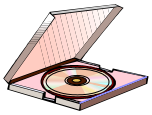
Save all packing materials.

Equipment Checklist and Inspection

Upon receipt of your XE2000 shipment, check your package contents for the items listed below, then fill out and return the enclosed product registration card.

If shortages exist, please contact your local distributor or Brady Worldwide, Inc. immediately.

Components Included

Item	Description		
1		Brady WavePoint™ XE2000 (including Mounting Base, Foam Spacer, Feet, Post, Bolt, Adjustment Knob, Spring, and Retaining Ring)	Encodes RFID Smart Labels after the labels are imaged by a thermal transfer printer. The Mounting Base provides a rigid structure for the XE2000. The Post for the XE2000 is mounted to the base, allowing the XE2000 to be positioned using the bolt, spring, and adjustment knob.
2		12V DC Power Adapter	Provides power to the Brady WavePoint™ XE2000.
3		RS-232 Cable	Connects the XE2000 to a host computer.
4		XE2000 Software CD (including documentation)	Used to install XE2000 host library functions on the host PC. Documentation is also included on the CD, in PDF form.
5		XE2000 User's Guide (this manual)	Explains how the XE2000 is assembled, along with setup and positioning tips, and offers suggestions for properly using the XE2000 and RFID Smart Labels.
6		Product Registration Card	Registers your product for support, warranty, and product updates.

Reporting Damage

Inspect the XE2000 for possible damage incurred during shipment. If you discover shipping damage upon inspection, do the following:

1. Immediately notify the shipping company of the damage.
2. Retain all packaging material for shipping company inspection.
3. File a Damage Report with the shipping company and notify your local distributor and Brady Worldwide, Inc. of the damage. Brady Worldwide, Inc. is not responsible for any damage occurring during shipment of the equipment and will not repair this damage under warranty. Immediate notification of damage to the shipping company or its insuring agency will generally result in ensuring any damage claim validity and ultimate monetary compensation.

Storage and Reshipping

If not operating the XE2000 immediately, repackage it using the original packing materials. The Brady WavePoint™ XE2000 may be stored under the following conditions:

Temperature	-4° to 140° F (-20° to 60° C)
Relative Humidity	20% to 85% non-condensing

Should it become necessary to ship your Brady WavePoint™ XE2000, carefully pack it in a suitable container to avoid damage during transit. Whenever possible, the original container from the factory should be used. If you use a different container, follow a similar procedure to that originally used to package the XE2000.

Chapter 2 - XE2000 Specifications

Consider the following product specifications when setting up or working with the Brady WavePoint™ XE2000:

Input Voltage	+12V DC Nominal 
Input Current *While Activated* *Standby*	 150 mA 20 mA
Frequency of Operation	13.56 MHz
Temperature *Operating* *Storage*	 5° to 40° C (41° to 104° F) 20% to 85% RH, non-condensing -20° to 60° C (-4° to 140° F) 20% to 85% RH, non-condensing
RS-232 Communications	19.2kb, 8 data, 1 stop, No parity
Host Software OS	Windows 95, 98, or NT 4.0 (or later)

Power Adapter Specifications

Consider the following product specifications with regard to the 120V AC-DC/12V DC power adapter.

Input Voltage	120VAC ± 10%, 60Hz (UL and CSA approvals)
Output	12V DC, 1 A
Temperature *Operating* *Storage*	 0° to 40° C (continuous) (32° to 104° F) 10% to 90% RH, non-condensing -20° to 80° C (-4° to 176° F) 10% to 90% RH, non-condensing

Chapter 3 - System Requirements

The Brady WavePoint™ XE2000 requires the following hardware and software components:

- Pentium processor-based personal computer running Windows 95, 98, or NT 4.0 (or later) as the operating system.
- 16 MB of RAM
- CD-ROM drive
- Free Serial Port
- 50 MB of (free) hard drive space

Chapter 4 - Product Description

The Brady WavePoint™ XE2000 is an encoding device for RFID Smart Labels, generally used with label creation software. The XE2000 provides a peripheral approach to programming RFID Smart Labels. This external approach allows various label configurations to be used with existing thermal transfer printers. The external approach also checks the RFID functionality of the label to verify that it was not damaged during the printing process by high printhead pressure or extreme angles.

Background Information

RFID Smart Labels are an alternative to traditional RFID cards and tags. The labels operate at a higher frequency than traditional RFID cards and tags, which allows the physical construction to be thinner, more flexible, and lower in cost.

With the advent of RFID functionality embedded into standard converted labels, there is a growing need for a seamless system with which to image and encode labels. The combination of the Brady WavePoint™ XE2000, label creation software, RFID Smart Labels, and a thermal transfer printer—along with Brady's traditional application and integration support—brings the full RFID solution to hand.

To learn more about Brady RFID Smart Labels and label creation software, refer to the PDF included on the XE2000 software CD-ROM, or visit the Brady RFID website at **http://www.bradyrfid.com**.

XE2000 Components

The following components make up the total Brady WavePoint™ XE2000 unit.

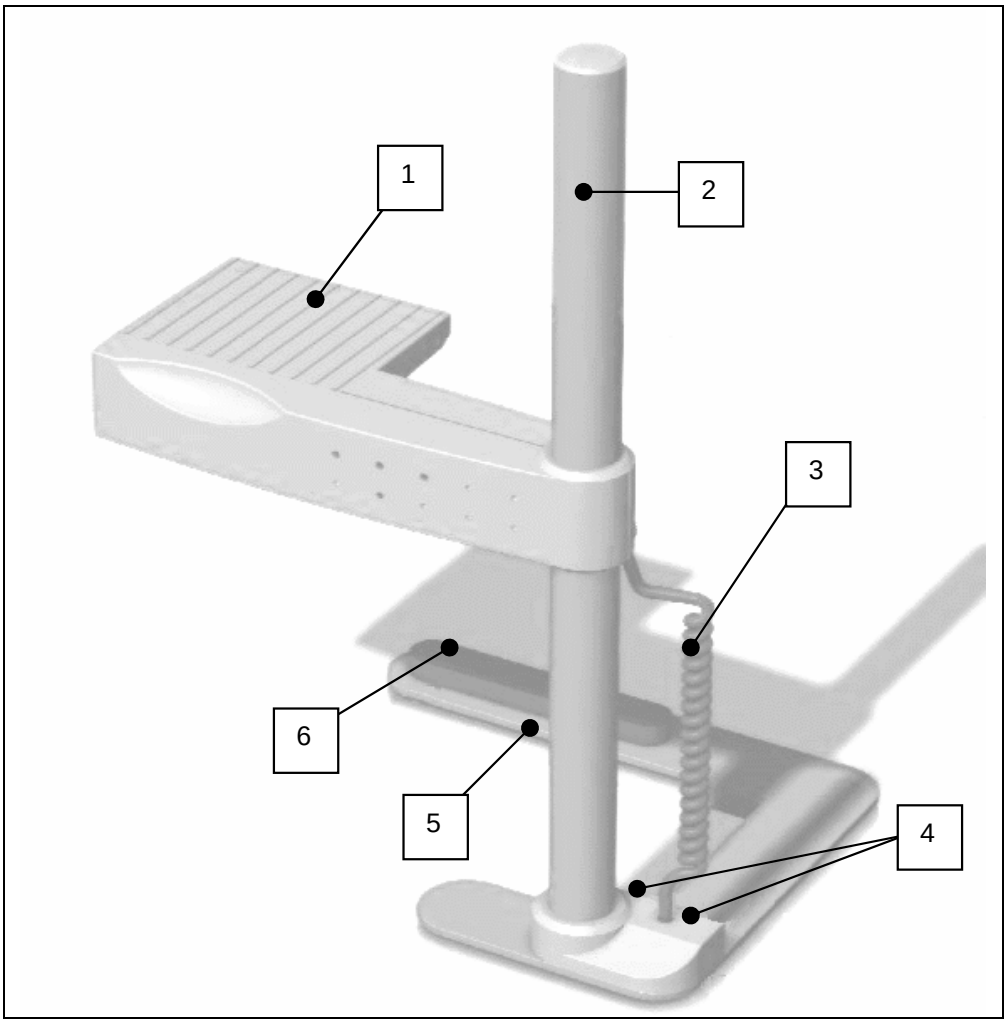
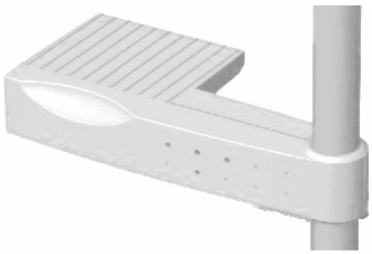


Figure 4-1 XE2000 Components

1. Encoder Module
2. Post
3. Power & Serial Cable Coil
4. Serial & Power Connection
5. Mounting Base
6. Foam Spacer

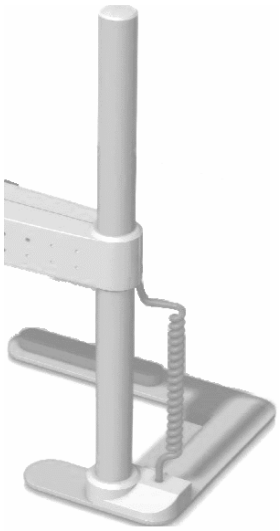
Figure 4-2 Encoder Module



The Encoder Module is the portion of the XE2000 that reads and writes to RFID Smart Labels. The Encoder Module is placed adjacent to the exit bay of the printer so labels are encoded as they rest over it after being printed.

The Encoder Module contains three LEDs to indicate the operation status of the XE2000 (see Chapter 5 for more information).

Figure 4-3 Mounting Base and Post



The mounting base and post provide the XE2000 Encoder Module with a rigid foundation for use with a thermal transfer printer. The base is positioned under the printer and is held in place by a foam spacer and rubber feet.

The post supports the Encoder Module via a bolt and adjustment knob located on the back of the post. The height of the Encoder Module can be adjusted by loosening the knob and sliding the module up or down.

The XE2000 can be set up and used to encode a wide variety of labels simply by adjusting the Encoder Module's position on the post. For example, the Encoder Module may be placed directly adjacent to the exit bay of the printer for shorter labels, while longer labels may require a gap between the module and the exit bay.

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The post also allows the Encoder Module to swing out of the way so the user can gain access to the printer or the printed labels.

The physical construction of the base, post, and spring loaded retaining ring precludes—for the most part—accidental movement of the XE2000. This is extremely helpful in averting possible alignment issues during encoding.

Figure 4-4 12V DC Adapter

The adapter provides the XE2000 with 12 volts direct current for proper operation. The output of the adapter plugs into the connector located on the mounting base. The power is then supplied to the Encoder Module via the coiled cable.

Figure 4-5 Serial Cable

The serial cable provides a communication channel between the host and the XE2000. A connector located on the mounting base routes signals (along with power) to the Encoder Module via the coiled cable.

Chapter 5 - XE2000 Setup and Positioning

Setting up the Brady WavePoint™ XE2000 is remarkably simple. Right out of the box, all you need to do is connect the power and serial cables, and install the software. Correctly positioning the XE2000 with respect to your thermal transfer printer—although equally simple—may require a bit of trial and error.

Following is a summary of the steps necessary to setup and position the XE2000. Detailed instructions for each step follow later in this chapter. After completing these steps, you are ready to begin encoding labels.

Step	Brief Summary of Step	Page
Setup XE2000	Install software. Connect power and serial cable.	22
Position XE2000	Position mounting base arm under the printer. Adjust encoder module vertically and horizontally.	25
Check LED Display	Determine XE2000 status and optimal positioning.	27
Position XE2000 For Use with RFID Smart Labels	Optimize label location. Use the XE2000 Utilities Program to view positioning options.	28
Test	Test for connectivity and positioning using the XE2000 Utilities Program.	33

XE2000 Setup

The following sections describe how to set up the XE2000 to work with your printer and host PC.

Software Installation

The CD that accompanies the XE2000 contains software necessary for XE2000-enabled programs to interface with the module. The software also contains a test program.

Use the auto-run CD to install the software on the PC that will serve as the host.

The XE2000-enabling software should not be confused with your label design and/or creation software application.

In addition to the host software installation program, the CD also includes:

- XE2000 Utilities Program
- Brady RFID Smart Label Demo
- Documentation PDFs

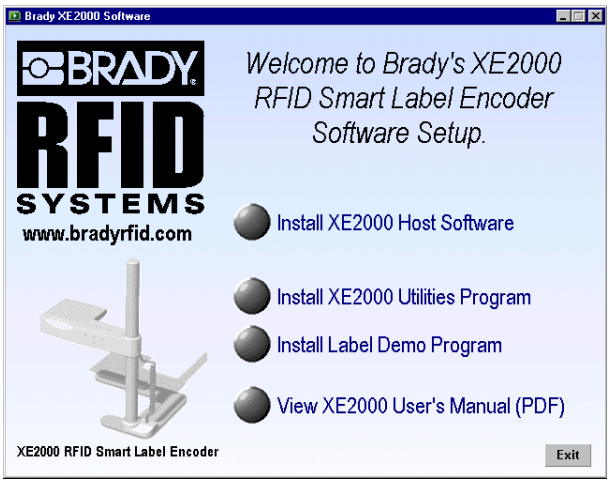


Figure 5-1 XE2000 Software Setup Screen

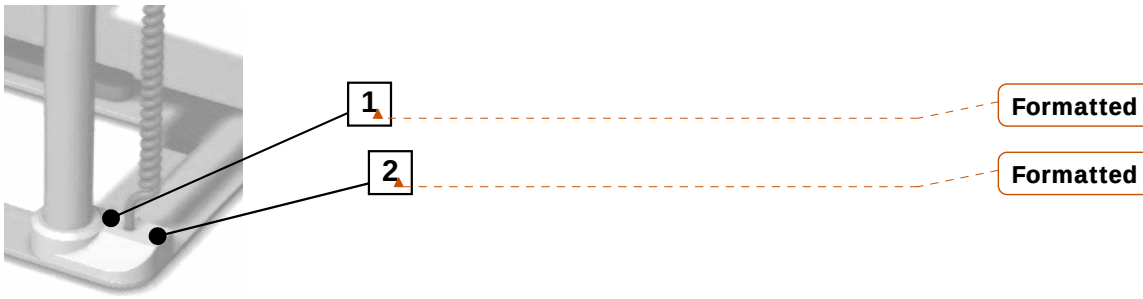
To verify the hardware is working correctly, all software applications and programs on the CD must be installed.

Power Connection

Plug one end of the 12V DC power connection into an outlet and the other end into the power port on the back of the mounting base (near the post). When properly connected, the amber LED on the XE2000 is activated, indicating it is receiving power.

Serial Connection

Plug one end of the DB9 serial cable into the host PC, and the other end into the DB9 connector next to the power connection on the XE2000.



1. The Serial Connection is plugged in on the right side (when viewed from back) of the coiled cable.
2. The 12V DC Power Connection is plugged in on the left side (when viewed from back).

XE2000 Positioning

Positioning of the XE2000 is crucial to operational effectiveness in reading and encoding RFID Smart Labels. Exact positioning will differ depending on the printer and labels being used.

The padded portion of the mounting base (mounting base arm) is designed to go under the printer.

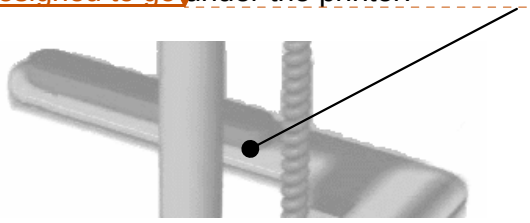


Figure 5-2 Mounting Base Arm

Tilt the printer slightly to position the mounting base arm about halfway under the printer. This is a good starting position, but the exact position depends on the printer and labels, and therefore may require adjustment.

When the XE2000 mounting base is positioned correctly, the Encoder Module itself should be located in such a manner that it easily swings out of the way without catching on—or hitting—any part of the printer. This allows for easy adjustments to the Encoder Module, as well as providing access to the label exit area on the printer.

Figure 5-3 XE2000 Mounting Base Positioned to Printer

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Encoder Module Height Adjustment

The Encoder Module height can be adjusted by loosening the adjustment knob on the back of the post and sliding the module up or down.

The height of the Encoder Module should be such that the Encoder Module sits just beneath the label exit area of the printer (approximately 1/8 inch below the horizontal exit plane of the labels). This ensures that labels will flow easily out of the printer and over the Encoder Module.

Encoder Module Horizontal Adjustment

The encoder module can be adjusted horizontally by positioning the mounting base arm either more or less under the printer. The exact horizontal or vertical adjustment will depend on the printer and labels.

The XE2000 Encoder Module was intentionally designed to have a long but narrow "RF Active Area" for encoding RFID Smart Labels.

RF Active Areas

Antennas in both the Brady WavePoint™ XE2000 Encoder Module and RFID Smart Labels are used to send and receive RF energy and data. The areas where these antennas receive most of the energy are referred to as RF Active Areas in this manual. Refer to *Figure 5-5 RFID Smart Label RF Active* .

The length of the Encoder Module's RF Active Area allows for a variety of label widths, while the narrowness allows you to encode either long or short labels without encoding adjacent labels. The current offering of Brady RFID Smart Label sizes can be found on the CD-ROM provided, or by visiting the Brady RFID website at **http://www.bradyrfid.com**.

LED Functions

Once the XE2000 is positioned adjacent to the printer, and the power and serial connections are made, refer to the LEDs (Light Emitting Diodes) on the front of the XE2000 to check its status and help determine its optimal positioning.

Figure 5-4 LED Display

XE2000 Status

The following list indicates the XE2000 state to which each LED corresponds.

	**Amber**	XE2000 is receiving power
	**Red**	XE2000 is attempting to read/write a label
	**Green**	XE2000 has successfully read/written a label

Positioning the XE2000 for Use with RFID Smart Labels

There is no size standard for RFID Smart Labels, so the optimal placement of various labels cannot be specified exactly. It is suggested, however, that the most advantageous placement for an effective read/write of an RFID Smart Label is one where a majority of the label's RF Active Area rests over the XE2000's RF Active Area after the label exits the thermal transfer printer, as shown in the following illustration:

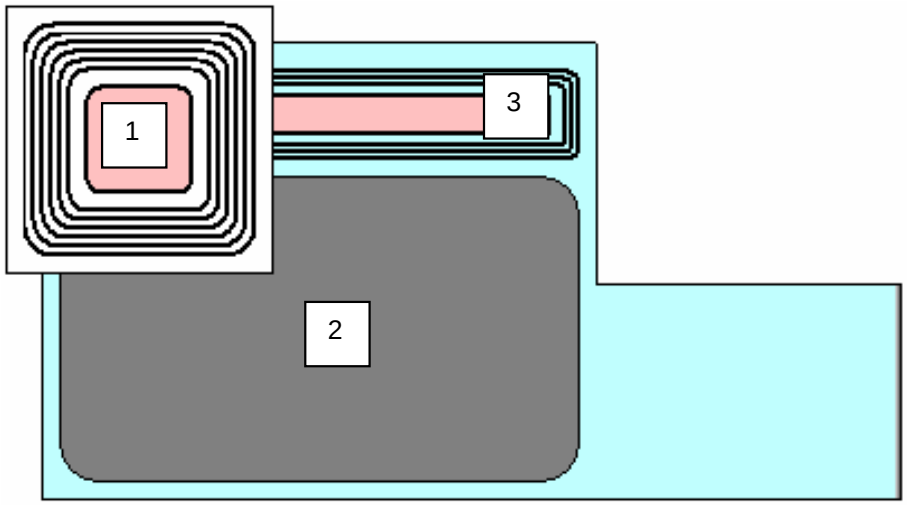

Figure 5-5 RFID Smart Label RF Active Area—Not Drawn to Scale

1. RFID Smart Label RF Active Area
2. XE2000 RF Inactive Area
3. XE2000 RF Active Area (Inside the antenna coil)

Use the XE2000 Utilities Program to familiarize yourself with proper label positioning. Refer to *Using the XE2000 Utilities Program for Positioning Options* on page 31 of this document.

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The XE2000 was also intentionally designed to have a very large "RF Inactive Area" next to the RF Active Area. When a label is completely within this RF Inactive Area, there is no energy transferred between the XE2000 and the label. This functionality provides additional protection against encoding unnecessary or undesired labels that may be adjacent to labels actually being encoded.

To optimize label location, before printing on RFID Smart Labels, it is suggested that you test non-RFID labels of the same size. This allows for proper positioning of the labels (as well as a test of their design and presentation), without wasting the more costly RFID Smart Labels.

On exiting the printer, a large portion of the label's RF Active Area should be positioned over the XE2000's RF Active Area. If this isn't the case, adjusting the backfeed of the printer, or physically moving the XE2000 with respect to the printer, can help you achieve the correct positioning.

Refer to *Appendix C – Working with Printers*, for more information on backfeed.

The following illustrations show examples of good and bad RFID Smart Label positioning over the XE2000:

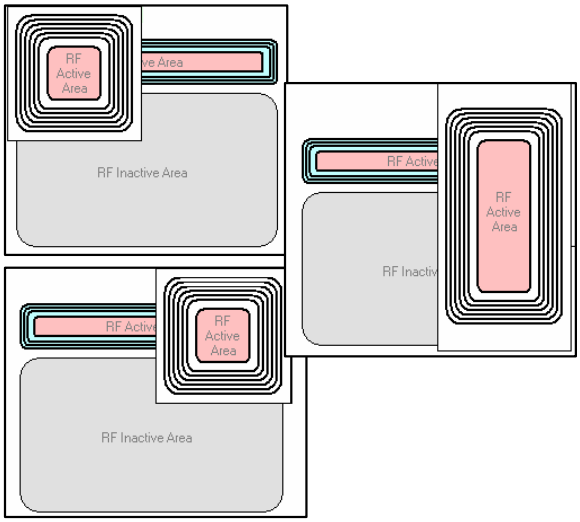


Figure 5-6 Good XE2000 & Label Positioning

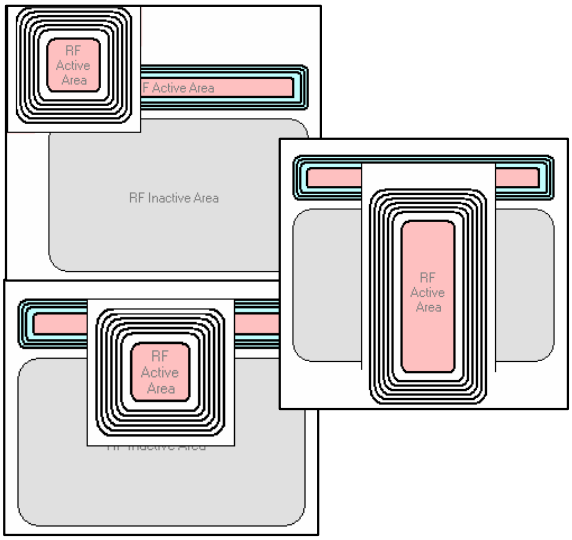


Figure 5-7 Bad XE2000 & Label Positioning

Using the XE2000 Utilities Program for Positioning Options

Use the XE2000 Utilities Program to familiarize yourself with label positioning that falls within the acceptable placement range.

1. Double-click the XE2000 Utilities Program icon located on your desktop (installed from XE2000 CD).

2. When the XE2000 Utilities Program window is displayed, click either the **Square Label** or **Rectangle Label** button to indicate the type of label with which you are working.

3. Click and drag the label over the XE2000 to determine where to position the label in order for it to be successfully encoded by the XE2000.

The program's background color changes from green to red as you move into and out of acceptable placement zones.

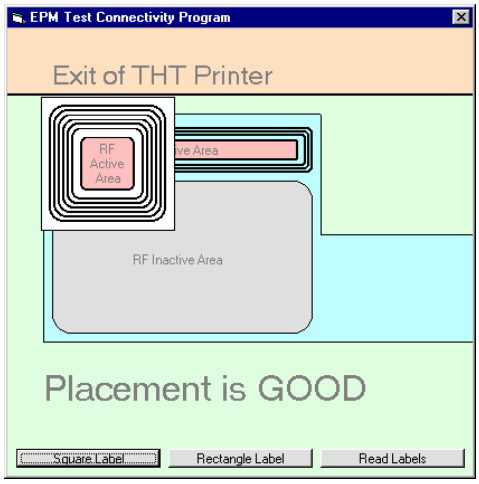


Figure 5-8 Good Placement Zone

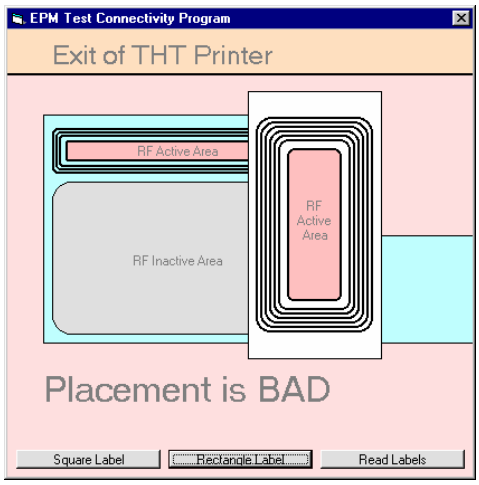


Figure 5-9 Bad Placement Zone

4. Click the Close (**X**) button in the upper right corner of the window to close the XE2000 Utilities Program.

Testing XE2000 Connectivity and Positioning

After the XE2000 is in position and the software is installed, you should test both the connectivity and positioning using the XE2000 Utilities Program.

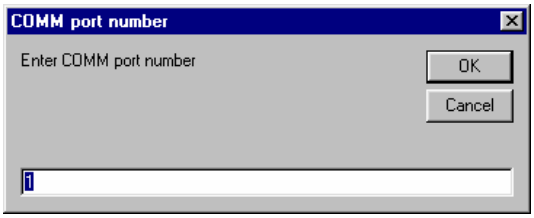
Testing XE2000 Connectivity

Prior to loading your thermal transfer printer with RFID Smart Labels, run the following test using one label to ensure your XE2000 has power and is communicating with the host PC.

1. Double-click the XE2000 Utilities Program icon located on your desktop (installed from XE2000 CD).

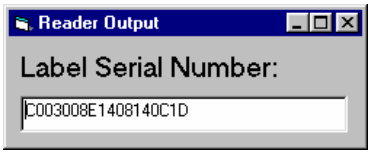
2. Click the **Read Labels** button located at the bottom right corner of the XE2000 Utilities Program window.

3. The COMM Port Number dialog is displayed:



Enter the COMM port to which you are connecting and click the **OK** button.

4. The Reader Output window is displayed, and each label is read as the user places a label over the XE2000's RF Active, its serial number is displayed:



	At this point, the amber LED on the front of the XE2000 should be continually displayed (with no blinking), indicating the XE2000 is receiving power
	The red LED should be blinking, indicating it is communicating with the host PC and is reading/writing (or attempting to) labels.
	When the XE2000 reads an RFID Smart Label (when the XE2000 active area and the label active area overlap), the green LED flashes quickly, indicating a successful read.

If a label is placed over the XE2000 and the green LED is not activated, consider the possibility that the chip in the label is damaged and can't be read. Try another label to verify that the problem is not a damaged label.

5. When you are satisfied with the XE2000's connectivity, click the Close (**X**) button on the Reader Output window to close the XE2000 Utilities Program.

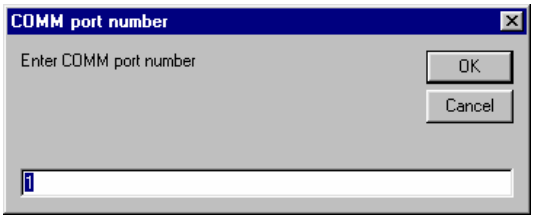
Testing XE2000 Positioning

Once you've confirmed the XE2000 is communicating with the host PC, load RFID Smart Labels into your thermal transfer printer and use the same XE2000 Utilities Program to check the positioning of the XE2000. You will probably need to calibrate the printer (the procedure for which depends on the specific printer being used).

1. Double-click the XE2000 Utilities Program icon located on your desktop.

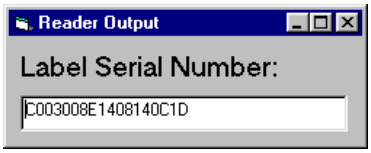
2. Click the **Read Labels** button located at the bottom right corner of the XE2000 Utilities Program window.

3. The COMM Port Number dialog is displayed.



Enter the COMM port to which you are connecting and click **OK**.

4. When the Reader Output window is displayed, press the feed button on your printer to send a label through the printer and over the XE2000.



5. As each label is read, its serial number should be displayed on the Reader Output window. If a serial number is not displayed, either the RF Active Areas are not aligned properly or the RFID Smart Label could be damaged.

6. Advance (or feed) labels—one at a time—through the printer and over the XE2000 to ensure its horizontal and vertical position is correct. Feeding the labels one at a time through without tearing them off, should further ensure your positioning is good. Three to five labels should be sufficient to test the XE2000's positioning.

It is suggested that you move the Encoder Module slightly in all directions during testing to verify that it is not physically located in an area that occasionally might not be encoded, due to RF Active Areas not overlapping correctly.

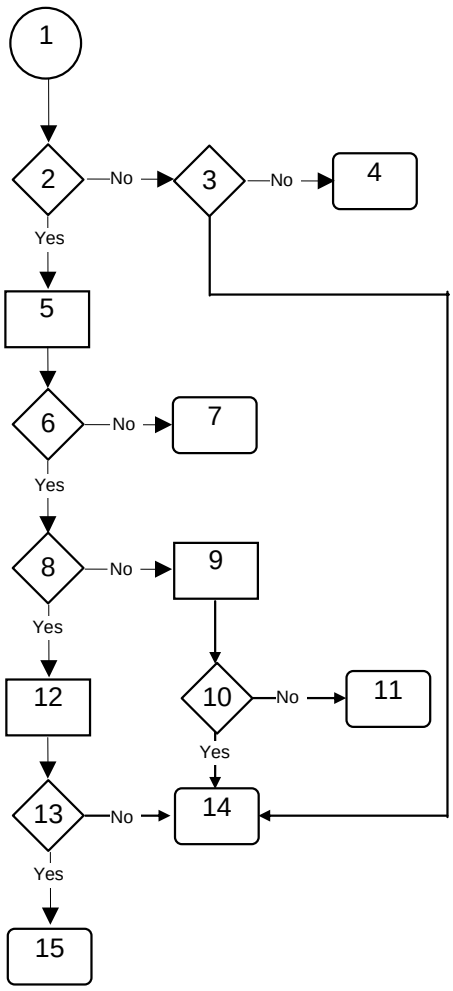
7. Once you feel comfortable with the positioning of the XE2000, print a few labels (using your label creation software) to verify that your design is accurate, the delay for encoding is sufficient (refer to *Appendix B – Delay for Encoding*), and that the desired results are being achieved.

8. When you are done testing the positioning, click the Close (**X**) button on the Reader Output window to close the XE2000 Utilities Program.

Refer to your label creation software documentation for details on enabling the RFID Smart Label functionality of the package.

Troubleshooting XE2000 Setup

.Use the following flowchart to troubleshoot problems encountered when setting up your XE2000. For further troubleshooting assistance, contact Brady Support. Refer to *Technical Support* on page 6 of this document for contact numbers.



1. XE2000 appears to be dead.
2. Is Amber LED on?
3. Is the +12V DC power supply connected?
4. Plug in supply and test XE2000 again.
5. Run XE2000 Utilities Program.
6. Are errors displayed?
7. XE2000 hardware and host software are functioning; check label creation software.
8. Is error software related?
9. Verify correct serial cable is properly connected.
10. Is cabling OK?
11. Correct cabling problems and test XE2000 again.
12. Uninstall XE2000 host software and reinstall.
13. Is problem fixed?
14. Contact your supplier or Brady RFID support.
15. Verify no problem exists with label creation software.

Chapter 6 - Encoding Smart Labels with the XE2000

Using the Brady WavePoint™ XE2000 to encode RFID Smart Labels is typically done in conjunction with label creation software and a thermal transfer printer.

Due to the variety of both software and printer products that may suit your needs, specifics on using either are not covered in this manual.

For details and instructions on formatting labels, refer to your label creation software documentation. Likewise, for instructions on loading and calibrating your printer, refer to the printer documentation.

These steps provide a general procedure that may be followed when printing RFID Smart Labels and encoding them with the XE2000.

1. Open your label creation software program, which probably requires you to indicate the label and library to be printed.

2. Click the "Print" button to send the labels to the printer.

3. Typically, a message is displayed, keeping you apprised of the print status. The length of time this message is displayed depends on the number of labels in the print job.

   It is likely this message does not provide an encoding status, merely a printing status.

4. Upon completion of the print/encoding job, the label creation software can produce a log indicating the status of the XE2000 label reads.

Delay for Encoding

A delay is required during the printing process in order for the XE2000 to encode the label.

The label creation software sends a print job to the printer and is aware when the printer is finished accepting the job. However, the label creation software is **not** aware of when the label is actually printed and has come to a stop.

Therefore, the delay for encoding is based—primarily—on the time it takes for the printer to physically print the label; and, possibly, for the printer to backfeed the label into the printer (for printing).

A large variety of thermal transfer printers, RFID Smart Label sizes, and label creation software packages exist. Therefore the delay required is usually different for the variety of applications and must be set accordingly to that application.

Refer to *Appendix B – Delay for Encoding*, for more information.

Appendix A – Replacement Information

There is no maintenance required for the XE2000. If replacement parts are needed, contact Brady, using the following part numbers.

Part #	Description
63986	Brady WavePoint™ XE2000 (including Encoder Unit and Electronics, XE2000 Software CD, XE2000 Users Guide, Power Supply, and Serial Cable)
63987	XE2000 Software CD
63988	XE2000 User's Guide—English
63994	Power Supply
20887	European Power Supply
63073	Serial Cable
63989	Carriage Bolt/Spring Assembly
63990	Screws
63991	Rubber Feet
63992	Foam Spacers
63993	Serial Cable Adapter (to convert 9-pin female to 25-pin female)
63995	XE2000 User's Guide—French
63996	XE2000 User's Guide—German
63997	XE2000 User's Guide—Spanish
63998	XE2000 User's Guide—Italian
63999	XE2000 User's Guide—Dutch

Appendix B – Delay for Encoding

A delay is required during the printing process in order for the XE2000 to encode the label. This required minimum delay is an estimate based on the overall printing and encoding process.

The label creation software sends a print job to the printer and is aware when the printer is finished accepting the job. However, the label creation software is **not** aware of when the label is actually printed and has come to a stop.

Therefore, the delay for encoding is based—primarily—on the time it takes for the printer to physically print the label; and, possibly, for the printer to backfeed the label into the printer (for printing). The overall delay should also include a margin of error for other minor, unknown factors.

Approximating the Delay for Encoding

Calculate the following to determine the encoding delay based on the label and printer parameters. Examples are given below:

Setting	Value	Description
Backfeed Speed	2 in/sec	Usually fixed
Backfeed Amount	0.5 in	Typically user-defined, but can be fixed
Label Print Speed	4 in/sec	Typically user-defined, but can be fixed
Label Length	2 in	User-defined when formatting labels
Suggested Margin	+150%	Equates to 50% more time than the backfeed speed & amount, and the label print speed and length. The margin can be reduced as the user becomes familiar with the system.

The following example demonstrates this calculation based on the values in the preceding table:

$$Delay = \left(\frac{0.5in}{2\frac{in}{sec}} + \frac{2in}{4\frac{in}{sec}}\right) * 150\% = (250ms + 500ms) * 1.50 = 1125ms$$

The delay should not be reduced below the minimum required value, as below this value there is a significant chance the label might still be moving from the printing process.

Since alignment of the XE2000 and label RF active areas is critical, lowering the delay could negatively affect the encoding process. This negative effect could manifest itself as failing to read good labels, not properly writing to good labels, not properly recognizing bad labels, etc.

If an unknown—yet significant—delay factor exists outside the parameters of the previous calculation, the system will attempt to encode labels before they come to a stop. The same negative effects (mentioned earlier) could also be seen in this circumstance.

Although it may seem the human ear and eye are not perceptive enough to distinguish if the delay is appropriate; in fact, the ear and eye combination should be able to recognize a delay of a few hundred milliseconds, and determine if the delay is sufficient.

A good rule of thumb is to listen for the printing to stop and watch for the red LED to display.

Delay for encoding settings can be managed from the RFID Options window in certain label creation software packages.

Appendix C – Working with Printers

Some printer settings can have an impact on the XE2000's ability to encode RFID Smart Labels. For example, if the printhead pressure is too high, the chip can be damaged.

This appendix is not meant to be an all-inclusive guide to working with your thermal transfer printer, but is provided to point you in the direction of the most obvious answers to the most common questions you may have with regard to using the XE2000 and your thermal transfer printer.

In all cases, refer to your printer documentation for specific adjustments and recommendations from the printer manufacturer.

Printhead Pressure for Thermal Transfer Printers

The more pressure applied to the printhead, the greater the possibility of chip damage. Therefore, it is generally advisable to try increasing the printing temperature to achieve the desired print quality, as opposed to increasing the printhead pressure.

Note: Using the lowest pressure that produces the desired print quality maximizes printhead life.

Temperature Settings for Thermal Transfer Printers

The temperature setting for thermal transfer printers refers to the temperature at which the resin is transferred to the label surface.

Increasing the temperature when printing labels causes the amount of resin transferred to the label to increase. This may cause printed images to appear blotchy, which can severely affect barcode quality.

Higher temperatures also reduce printhead life. Print quality is determined by temperature, print speed, and printhead pressure.

Darkness (or temperature) settings are dependent upon a variety of factors, including ribbon type, media, and the condition of the printhead. You may find it necessary to adjust the temperature parameter on your printer for consistent high-quality printing.

If print is too light or if there are voids in printed areas, you should increase the temperature.

If print is too dark or if there is spreading or bleeding of printed areas, you should decrease the temperature.

Caution: Set the temperature to the lowest setting possible while maintaining the desired print quality. A temperature set too high for a given ribbon may cause smearing and/or burning through the ribbon.

Print Speed for Thermal Transfer Printers

Print speed refers to the speed at which the label is printed. Reducing print speed will usually increase print quality. Print quality is usually determined by print head pressure, print speed, and printing temperature.

Backfeed

Some printers have the ability to backfeed the label so that it is easier to tear off the last label printed.

The backfeed offset is the amount of label that is advanced beyond the end of a printing batch. When printing is resumed, the label is drawn back into the printer to its starting position.

Printhead Pressure Adjustment (for Zebra Printers)

The following procedure is specific to Zebra printers, but can be used to help determine how to adjust the printhead pressure on other types of printers.

If printhead pressure must be adjusted (for example if the printer is printing too light on one side of the label, or if a thick media is used), follow these steps (or those specified by your thermal transfer printer manufacturer).

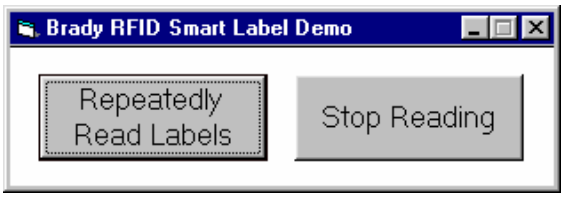
1. Lower the Darkness setting and print PAUSE test label at speed A.
2. Loosen the knurled (upper) locking nut.
3. Increase or decrease spring pressure (using the knurled adjustment nut on the shaft of the toggle) until the left and right edges of the printed area are equally dark.
4. Increase Darkness to optimum level for the media being used.
5. Retighten locking nut.

Appendix D – Using the Brady RFID Smart Label Demo

From time to time you may have a need to verify encoding results, and the Brady RFID Smart Label Demo provides you visual verification, quickly and easily.

1. Double-click the Label Demo icon on your desktop (installed from XE2000 CD).

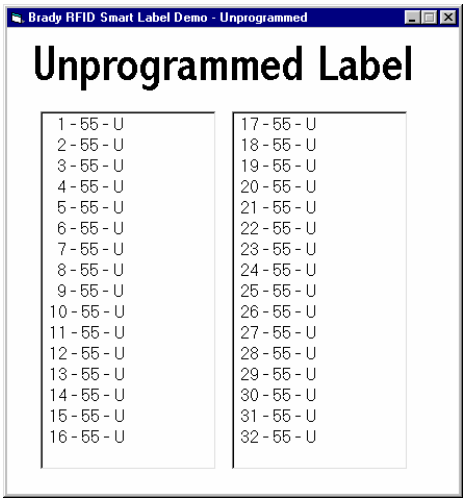
2. When the Brady RFID Smart Label Demo opens, position a label on the XE2000 and click the **Repeatedly Read Labels** button:



3. The label read times out after 10 seconds, and you are prompted to place another label on the XE2000:

Click the **Stop Reading** button to freeze the screen display by disabling the timeouts.

The demo program recognizes unprogrammed labels, as shown here:



4. When you finish reading labels, click the **Stop Reading** button on the Brady RFID Smart Label Demo dialog and close all windows related to this program.

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