

Boca Systems LEMUR – Z KIOSK PRINTERS Operator's Manual



Lemur-Z

Rev. C 05.28.22

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FCC NOTICE

NOTE: The 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 the user's expense.

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.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

WARRANTY INFORMATION

See below link concerning terms and conditions, including warranty information. <u>https://bocasystems.com/terms.html</u>

Please go to the link below if you have any reported issues with your new BOCA printer. <u>www.bocasystems.com/onlinesupportform.html</u>

Equipment damaged in shipping should be reported immediately both to BOCA and to the shipper.

EXTENDED WARRANTY PLAN - BOCA offers <u>extended warranty plans</u> for all printer models. These plans cover all parts and labor. All labor is to be performed at the BOCA facility. Equipment damaged by misuse or negligence, including damage to print heads caused by defective media, is excluded from this extended warranty. The customer, at its option, may request BOCA to ship individual parts to expedite simple repair procedures. In certain cases where the customer is unable to wait for the normal repair cycle, BOCA will ship an exchange printer within one business day after notification by the customer. All freight charges are the responsibility of the customer.

1.0 Unpacking the Printer

The printer is shipped in a ruggedized container. **Please save packing material for future use.** Remove the printer and accessories from the box and inspect for obvious damage. If damage is noticed, please report it immediately to BOCA.

Email: <u>cathy@bocasystems.com</u> Tel: (561) 998-9600 Fax: (561) 998-9609

The following items should be in the box:

- A) Lemur-Z Printer
- B) 24VDC power supply
- C) AC cord
- D) May come with below optional accessories listed below (depending on what was ordered):
 - Adjustable external infeed guide (P/N 424050)
 - Adjustable internal infeed guide (P/N 424069-Z-7) already installed on printer
 - Center infeed guide (P/N 424069-Z-5 (58mm) or 424069-Z-8 (80mm) already installed on printer
 - Base mounting Zebra adapter (P/N 424077)
 - Printer Mounting Plate Installation (<u>P/N 424213</u>)
 - Receipt roll holder (P/N 424051-U)
 - Low paper sensor for roll holder (P/N 424078)
 - Low paper sensor for fan folded stock (P/N 424084)
 - Interface cable



Above show typical packing of printer with accessories located at bottom

2.0 Introduction for Lemur-Z

The Lemur-Z is a direct thermal ticket/ receipt printer with integrated cutting mechanism. This manual will provide the user with general information regarding printer set-up, configuration and troubleshooting. Please read the important safety information section before installation is conducted. Review the <u>programming guide</u> for additional details.

The Lemur-Z series are kiosk printers designed for use with 2" (50.8mm) to 3.25" (82.5mm) rolled receipt stock (minimum core size of 1.0") or fan folded stock with black timing mark using direct thermal printing. The following is a link to the black timing mark specs <u>www.bocasystems.com/ticket_specs10.html</u>. The printer features integrated auto cut mechanism, easily adjustable paper guide (if equipped) and presenter with built in retract and retain function.

The print head may be easily opened to give the operator easy access to the paper path and print head for routine maintenance.



Principle of Operation

PRESENTER

The Lemur-Z printer features a presenter mechanism with a built in retract and retain function. The following illustrations provide an overview of the functionality of the various stages of printer operation.

• **PRINT**– It handles documents of various lengths by storing the printed media in a loop.

 CUT – It holds the printout until fully printed and cut before presenting the completed printout to the customer.





• **PRESENT** – The printout is presented to the customer.



 RETRACT – The retract and retain function can retract uncollected printouts and drop them back inside the kiosk. By default, this feature is disabled unless otherwise specified. <u>Appendix C – DOWNLOADING</u> <u>SOFTWARE COMMANDS</u> reviews how to enable and change timeout value.



Controls & Sensors



3.0 Important Safety Information



WARNING: The appearance of this symbol indicates the proximity of an exposed high voltage area. Please follow all directions carefully for your personal safety. You must read the following safety information carefully before working on the printer.

As a safety precaution, all service to the printer should be done by qualified persons with power off and the AC cord unplugged from the printer. Following any procedure requiring the removal of covers and/or doors, please verify that they have been properly attached and fastened prior to operating the printer.

WARNING: "Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains."

WARNING: Power Cord Set: This must be approved for the country where it is used:

U.S.A. and Canada

- The cord set must be UL-approved and CSA certified.
- The minimum specification for the flexible cord is:
- No. 18 AWG
- Type SV or SJ
- 3-conductor
- The cord set must have a rated current capacity of at least 10A.
- The attachment plug must be an earth-grounding type with a NEMA 5-15P (15A, 125V) or NEMA 6-15P (15A, 250V) configuration.

United Kingdom only

- The supply plug must comply with BS1363 (3-pin 13 amp) and be fitted with a 5A fuse which complies with BS1362.
- The mains cord must be <HAR> or <BASEC> marked and be of type H03VVF3GO.75 (minimum).

Europe only:

- The supply plug must comply with CEE 7/7 ("SCHUKO").
- The mains cord must be <HAR> or <BASEC> marked and be of type H03VVF3GO.75 (minimum).

Denmark: The supply plug must comply with section 107-2-D1, standard DK2-1a or DK2-5a.

Switzerland: The supply plug must comply with SEV/ASE 1011.

WARNING: The appliance coupler (the connector to the unit and not the wall plug) must have a configuration for mating with an EN60320/IEC320 appliance inlet.

WARNING: The socket outlet must be near to the unit and easily accessible.

WARNING: France and Peru only:

This unit cannot be powered from IT† supplies. If your supplies are of IT type, this unit must be powered by 230V (2P+T) via an isolation transformer ratio 1:1, with the secondary connection point labelled Neutral, connected directly to earth (ground).

WARNING: RJ-45 Ports. These are shielded RJ-45 data sockets. They cannot be used as standard traditional telephone sockets, or to connect the unit to a traditional PBX or public telephone network. Only connect RJ-45 data connectors. Either shielded or unshielded data cables with shielded or unshielded jacks can be connected to these data sockets.

4.0 Installation

The Lemur-Z is designed to be mounted in a kiosk. Appendix H shows the mounting hole locations.

Prior to site preparation and installation, the printer should be powered up and run in the self-test mode.

- Lay the printer flat on a counter top.
- Install optional items onto the printer.
 - Adjustable infeed guide (<u>P/N 424050</u> or <u>424069-Z-7</u>)
 - Centering infeed guide (P/N 424069-Z-5 or 424069-Z-8) would have been installed
 - Base Mounting Zebra Adaptor (<u>P/N 424077</u>)
 - Printer Mounting Plate (<u>P/N 424213</u>)
 - Receipt roll holder (<u>P/N 424051-U</u>)
 - Low paper sensors (<u>P/N 424078</u> or <u>424084</u>)
- Attach the round DC connector of the 24VDC power supply into the printer.
- Plug the AC cord into the 24VDC power supply. The printer will automatically power up once the AC cord is plugged into its AC source. To power off the printer unplug the AC cord from the power supply.
- Wait five seconds after power up, during this time you will hear the cutter knife cycle. Begin loading media through the entrance slot with a smooth motion until the printer automatically positions the media. See section <u>6.0 Media Load Procedure</u>.
- After the media is automatically positioned (the green READY led will be illuminated), press the center TEST button located on the control panel to print a self-test.
- When the Lemur-Z leaves the factory, it is configured for use with receipt rolled stock (stock with no black timing mark). If you will use the printer with stock that has a black timing mark then it will need to be taken out of paper mode. See <u>Appendix C – DOWNLOADING SOFTWARE COMMANDS</u> to download the appropriate software command.
 - **<pmd> this** will configure the printer for use with media with a black timing mark.
 - **<pmr> this** will configure the printer for use with receipt stock without a black timing mark.
- Verify that the printer properly works with your system by doing a printout through your computer system. You
 may also use our customer-based program to test the printer independently of your software application (see
 <u>Appendix B</u>)

You may now install the printer in its permanent location. Adequate room should be provided behind the printer for the smooth feeding of the media.

Below is a typical self-test printout



Your printout may vary depending on printer configuration and media used.

5.0 Printer Mounting

It is recommended the printer be mounted to the kiosk using the three printer mounting screw holes shown in the illustration below. The printer is most secure when using all of these mounting locations attaching the printer's base within the kiosk.



Recommend using only #4 -40 self-tapping screws for mounting. Three 4-40 x .3125" self-tapping screws are included with the printer.

Below is a screw guide if not using the mounting screws that came with the printer.



Х	0.060" (1.55mm) minimum	Printer mounting surface
Υ	0.050" (1.27mm)	Printer base plate thickness
Ζ	0.130" (3.30mm) maximum	Penetration into circuit board area
X +	Y = minimum length	

You may also purchase an optional <u>Base Mounting Adapter (P/N 424077)</u> that will enable the Lemur-Z to have the same mounting hole pattern as that of a Zebra KR403 and KR203. This will also enable it to be used with the Quick-Fit hubs when the printer is not in retracting mode. Click here to return to > Table of Contents

5.1 Media Supply

The Lemur-Z has several basic requirements for dispensing the media to the printer from a roll or fan-fold media which include:

Align printer with media – The media roll or fan-fold stack should align with the right side of printer (from where stock is loaded into the printer) to keep the media un-damaged and prevent jams. An adjustable media guide (p/n 424050 or 424069-Z-7 is required when using fan folded media that has a width that is narrower than 3.25" (82.55mm).

The center 58mm infeed guide (p/n <u>424069-Z-5</u>) or center 80mm infeed guide (p/n <u>424069-Z-8</u>) may be installed on the printer if it will be replacing a Zebra KR203 or RK403 printer that used a similar center guide.

- Media only contact media mounting and printer in kiosk The media should not touch cable, other kiosk components, or surface other than media guides or the fan-fold media tray. If media will be feed into the printer from below the infeed area, then recommend the use of a Printer Mounting Plate (<u>P/N 424213</u>).
- **Direct sunlight, incandescent or infrared lighting or heat sources** These light sources can come from various sources and the printer should be shielded from them. For example, exposure to direct sunlight (possibility to the location of a kiosk vent) will affect the printer's sensors that may lead to reliability issues.
- Media dispensing must be smooth and easy Roll media must be able to turn with little or no drag, and allow the printer to smoothly pull media without jerking and stopping. Minimize roll to roll holder contact and avoid sharp contact surfaces. Recommend the use of a BOCA roll holder <u>p/n 424051-U</u>.

Fan-fold media must have sufficient room to unfold and not bind on media guide surfaces or at the perforations or sides.

The printer can produce a distorted print (e.g., compressed print, short receipts, etc.), motor stalls, and jamming if media dispensing to the printer if the media transition is not smooth and easy for the printer.

The printer supports two media supply types: outside roll mount; and stacked fan-folded media. The thermal side of the media faces up towards the top of the printer and away from the body of the printer. For roll media the minimum core size is 1.0".

Media Input Aperture

The printer has a wide aperture to support a range of media mounting locations. The media can enter the printer directly or indirectly with the addition of optional or custom-made guides.



If the entrance of the media into the printer will fall below the red highlighted area shown above, then the highlighted yellow area 222 should have a continuous physical barrier separating the media from coming in contact with the cabling, printer body, kiosk chassis seams, etc. Recommend the use of the Printer Mounting Plate (P/N 424213).

6.0 Media Load Procedure

- Plug the power pack into the printer and the printer will automatically turn on when the AC cord is plugged into the Power pack. The red CHECK PAPER LED will be illuminated. You will also hear the cutter knife cycle during this time.
- 2. The leading part of the media should have a clean edge and be as flat as possible. If the media is curled upwards then it will need to be flatten prior to loading into the printer. The loading process works best with the media having as a square, straight edge. Cut the paper in a suitable angle.



3. Begin loading the media through the entrance slot with a smooth motion until it comes to a stop (at this point the stock is between the thermal head and platen). Keep pressure against the stock and the printer will automatically load the media.

Receipt roll stock or with internal paper guide (424069-Z-7)



Fan folded stock (with external paper guide 424050)

4. The printer will feed the stock forward toward the front of the printer and then reverse it back to the print (idle) position. For use with fan folded stock with black timing mark the stock will loop upwards.



When using media with a black timing mark the black mark must meet the specifications found on the following link www.bocasystems.com/ticket_specs10.html

If you have any ticket load issues then make sure the paper guide slider bar is properly adjusted (see <u>6.2 Ticket Width</u> <u>Adjustment</u>).

6.1 Clearing Paper Jams

Should a paper jam occur (the red paper jam LED will be blinking), follow the procedure below:

1. Cut the media off the from where it is loaded into the printer.



- 2. Open the print head assembly. See section 9.2 THERMAL PRINT HEAD.
- 3. Remove and discard the damaged media.



- 4. Close the print head assembly and make sure latches on both sides are locked.
- 5. The printer will still be showing a paper jam error (red LED flashing).



6. Press the center TEST button to clear the jam error and put printer in out of paper mode (paper out LED will be illuminated).



PAPER OUT LED will become illuminated once the center TEST button is pressed

7. Feed the media back into the printer. See section 6.0 Media Load Procedure.

6.2 Media Width Adjustment

If you printer came with Adjustable external infeed guide then the below review how to adjust this path.

To adjust the paper path for use with a different media width, adjust the slider bar to the fully open position. Insert your media into the paper guide. Adjust the slider bar down to the proper media width, making sure the bar is not too tight against the media. The media should move freely in the paper guide.



If you are using the internal adjustable infeed guide part number the please refer to page 25 for adjustment.

7.0 Standard Interface Pinouts

RJ12 Serial Connection



TYPICAL DB9 to RJ12 PIN CONNECTIONS

9 pin host	BOCA RJ12	
2	2	Transmit
3	3	Receive
5	4	GND
6	1	RDY
8	6	CTS

USB USB 2.0 compliant devices.

ETHERNET (Optional) is a standard RJ45 Ethernet cable connection.

Low Paper Port used in conjunction with the roll holder with low paper sensor.



8.0 Thermal Paper - Theory & Specification

Refer to the BOCA Systems website at <u>www.bocasystems.com</u>, <u>THERMAL TICKETS</u> section for the most current <u>paper specifications</u>.

The print head's life expectancy is composed of both a mechanical and an electrical component. Both of these factors are strongly influenced by the quality of the thermal paper used.

MECHANICAL

The print head has a theoretical rating of 60 kilometers. This number is based upon the assumption that the head will be used with a good quality, top coated thermal paper. Uncoated and poorly top coated thermal papers are abrasive to the print head and have been found to wear through the head after less than one kilometer.

Other factors which may contribute to premature mechanical wear are the use of non-thermal inks and stray metallic particles stuck in ticket perforations. Certain ink colors such as opaque white (which contains titanium dioxide) are also highly abrasive.

Unfortunately, there are no available devices for quantitatively measuring the abrasiveness of a given ticket. Fortunately, we have developed a slightly subjective, but effective method of weeding out overly abrasive ticket stock.

ELECTRICAL

Each heat element, dot, on the print head has a theoretical life expectancy of 100 million activations. This is based on the assumption that each activation will cause the dot temperature to approach the dot's maximum recommended temperature. Running at lower temperatures will increase the theoretical life expectancy, while slight temperature increases will seriously (exponentially) degrade the head life.

The thermal paper can affect the electrical head life in two ways. Insensitive, slow papers will typically encourage the user to increase the voltage to darken the printed image. This will directly increase the head temperature resulting in reduced head life. Additionally, the higher temperatures will frequently cause the ink to peel off the ticket and deposit onto the print head. The ink debris will disrupt the normal transfer of heat from the head to the paper. This further increases the head temperature above the desired level. The use of non-thermal inks and/or non-top coated papers also will cause the ink to release and deposit on the print head.

SPECIFICATION

Based upon the above technical information, BOCA has always tried to encourage our customers to use the proper thermal papers to maximize the life of their print heads. BOCA provides an extensive series of papers which meet the above criteria for low abrasion and high sensitivity. We have also tested and approved a number of Ricoh thermal papers which meet our criteria. While we have not had the opportunity to test other manufacturers' thermal papers, we feel confident that other papers manufactured with the above goals in mind should be acceptable for use in our printers. The following list of papers have been approved by BOCA.

200 dpi usage

Lemur-X and Lemur-Z T4, T5, BS7, SKI7 & T7 Besides the above-mentioned stock, the Lemur-X is also able to support thicker stock like M10 & SKI-10

9.0 Maintenance

Your ticket printer is solidly constructed and requires minimal care to provide maximum service.



WARNING: The appearance of this symbol indicates the proximity of an exposed high voltage area. Please follow all directions carefully for your personal safety. You must read the following safety information carefully before working on the printer.

This section provides an overview of printer maintenance.

For discussion purposes, the printer consists of three major modules or assemblies:

- Paper path and print head assembly
- Cutter
- Logic board

As a safety precaution, all service to the printer should be done by qualified persons with power off and the AC cord unplugged from the printer. Following any procedure requiring the removal of covers and/or doors, please verify that they have been properly attached and fastened prior to operating the printer.

Routine maintenance should normally be done at least once a year. Maintenance will need to be done more often in higher usage or dirty environments. The following review those components that require maintenance:

9.1 Optical Sensors

There are optical sensors (opto) which are responsible for detecting where the ticket stock is as all times. Printers with load opto configuration will be missing the black mark sensor.

Once a year the sensors should be blown off with air. This interval will vary depending upon the environment and the quality of the media.



PLEASE NOTE: Printers dedicated to the use of media without a black timing mark (receipt mode), will not have a black timing mark sensor.

CAUTION:

Exposure of these sensors to direct sunlight, incandescent or infrared lighting sources will lead to possible reliability issues. These light sources can come from various sources and the printer should be shielded from them. For example, exposure to direct sunlight (possibility to the location of a kiosk vent) will affect the printer's sensors that may lead to reliability issues. Basically, these sources blind the sensors.

9.2 THERMAL PRINT HEAD

The print head should be cleaned periodically to prevent debris from building up on the print element. The required cleaning interval varies greatly depending on the quality of the media and the amount of dust entering the print area. Excessive dirt builds up on the print head will result in reduced quality. Continuing to run the print head in a dirty condition will reduce its life expectancy, as it is unable to diffuse heat properly.

The thermal print head can easily be accessed for cleaning or replacement, as follows:

1. Disconnect AC cord from the power pack to turn off the printer.

2. DO NOT UNPLUG CABLE FROM PRINT HEAD.

3. Open the print head by push back on the Print Head lock/ cutter guard to unlock the print head. Lift up on the head mounting assembly/ thermal head and tilt back.



4. 5. Clean the thermal print head surface (the side that makes contact with the paper) with isopropyl alcohol.



6. Gently lower the head mounting assembly/ thermal head and push down to lock in place. You will want to confirm the both sides of the latch are locked.



7. The printer in now ready for operation. If the print quality is still poor then the thermal head needs to be replaced.

8. To replace print head (part number 200C3), gently remove the two head cable connector from print head and then remove print head from mounting plate by removing two Philip head screws.

9.3 Platen (Rubber Driver Roller)

The Platen (rubber drive roller) should be cleaned once a year to prevent paper dust from building up on the roller. (NOTE: The platen may require more frequent cleaning in dusty environments or when using inferior media)

- 1. Disconnect AC cord from the power pack to turn off the printer.
- 2. Unlock the cam lock lever and remove head mounting assembly/thermal head. (Refer to section <u>9.2 Thermal Print</u> <u>Head</u>).
- 3. Apply a small amount of Isopropyl alcohol onto a paper towel to clean the rubber roller.
- 4. Clean only the part of the rubber roller where the media makes contact.
- 5. Rotate the rubber roller clockwise a little and repeat step 4; continue in the same manner for one full revolution of the rubber roller.
- 6. Lock the head mounting assembly/thermal head back in place. Printer is now ready for normal operation.



9.4 Cutter Assembly

The BOCA cutter system is a fully integrated cutter knife mechanism powered by a stepper motor. The cutter requires no adjustments and is rated for approximately 750,000 cuts. Please be aware of the following:

Wait five seconds before feeding media into the printer after power up. During this time the cutter knife will move up and down. If media is fed into the printer before five seconds, a jam could occur.

The cutter area should be blown out with air periodically to prevent debris from building up inside the cutter area. The required cleaning interval varies greatly depending on the quality of the media and the amount of paper dust entering the cutter area.



10.0 Troubleshooting Guide

This is a simplified troubleshooting guide listing some of the typical problems. It is not intended to provide technical details or repair methods, but can serve as a guide to fault isolation in the field. As a safety precaution, all service to the printer should be done by qualified persons with power off and the AC cord unplugged from the printer. Following any procedure requiring the removal of covers and/or doors, please verify that they have been properly attached and fastened prior to operating the printer. If you need additional help, please visit the link below www.bocasystems.com/onlinesupportform.html

- 1. <u>NO OPERATION, LED'S DON'T LIGHT UP UPON POWER UP</u>
 - a. Unplug the AC cord from the power source and wait 30 seconds then plug it back in.
 - b. Check the power cord for proper installation at both ends.
 - c Check that there is power at the AC outlet.
 - d. Replace the 24 VDC power supply.
 - e. Contact your system provider or **BOCA** for further assistance.

2. POWER IS ON BUT NO OPERATION

- a. Make sure the stock is being loaded properly into the printer. Consult section 6.0 Media Load Procedure.
- b. Perform routine maintenance on the printer. Consult section 9.0 Maintenance
- c. If cutter knife does not go up and down after power up, See # 6.
- d. Default the printer settings. With the printer powered off, hold down the center TEST button and then power up the printer. Keep the TEST button held down for 10 seconds and release (printer will reset).
- e. Contact your system provider or **BOCA** for further assistance.

3. POWER IS ON BUT MEDIA WILL NOT LOAD

- a. See # 2
- b. Make sure the print head/cam lock assembly is fully locked in the closed position. Consult <u>Thermal Print Head</u> section.
- c. Check that the media is being loaded correctly. Consult <u>6.0 Media Load Procedure</u> section.
- d. If using the paper guide then make sure the slider bar is properly adjusted for the width stock being used. Consult <u>6.1 Media Width Adjustment</u> section
- e. Make sure the printer is not exposed to direct sunlight, incandescent or infrared lighting source.
- f. Contact your system provider or **BOCA** for further assistance.

4. ERRATIC CUT POSITION

a. Clean off the opto sensors. Consult <u>9.1 Optical Sensors</u> section.

b. If using the paper guide then make sure the slider bar is properly adjusted for 9the width stock being used. Consult "<u>6.1 Media Width Adjustment</u>" section

c. Check that the platen is clean. Consult "9.3 Platen (Rubber Driver Roller)" section.

e. Make sure the printer is not exposed to direct sunlight, incandescent or infrared lighting source.

f. Contact your system provider or **BOCA** for further assistance.

5. ERRATIC PRINT POSITION

a. See # 4

6. <u>CUTTER KNIFE DOES NOT MOVE (if equipped)</u>

- a. Check for blockage in the cutter area.
- b. Default printer settings. With the printer powered off hold down the TEST button and then power up the printer. Keep the TEST button held down for ten seconds and release.
- c. Contact your system provider or **BOCA** for further assistance.

7. <u>POOR PRINT OUT (light print out)</u>

- a. Try a different receipt roll or stack of ticket stock.
- b. Make sure the print head/cam lock assembly is fully locked in the closed position. Consult <u>Thermal Print Head</u> section.
- c. Clean print head. Consult "Thermal Print Head" section.
- d. Replace thermal head.
- e. Contact your system provider or <u>BOCA</u> for further assistance.

- 8. <u>POOR PRINT OUT (white voids in print out)</u>
 - a. Clean print head. Consult "Thermal Print Head" section. For Lemur-R see "Thermal Print Head"
 - b. Replace thermal head.
 - c. Contact your system provider or <u>BOCA</u> for further assistance.

9. <u>NO PRINT OUT</u>

- a. Try a different receipt roll or stack of ticket stock.
- b. Check head cable for electrical connection at both sides of print head.

c. Check to make sure head cable is plugged in properly into the thermal head. Consult "<u>Thermal Print</u><u>Head</u>" section

- d. Replace the thermal head.
- e. Contact your system provider or <u>BOCA</u> for further assistance.

10. PRINTER SKIPS TICKETS WHILE PRINTING

- a. Check position and quality of black mark on the ticket stock.
- b. If using the paper guide then make sure the slider bar is properly adjusted for the width stock being used. Consult "<u>6.1 Media Width Adjustment</u>" section.
- c. Clean off SQ optical sensors (see see <u>9.1 Opitical Sensors</u>) with air.
- d. Check that the platen is clean. Consult "9.3 Platen (Rubber Driver Roller)" section.
- e. Contact your system provider or <u>BOCA</u> for further assistance.

11. PRINTER SKIPS TICKETS AND DIES

a. See # 10.

12. MEDIA JAM ENTERING THE CUTTER AREA

a. Make sure the entrance to the cutter area is not blocked.

- b. If using the paper guide then make sure the slider bar is properly adjusted for the width stock being used. Consult "<u>6.1 Media Width Adjustment</u>" section.
- c. Contact your system provider or <u>BOCA</u> for further assistance.

11.0 Spare Parts List

#	Part Number	Description
1	200C3	Print Head for Lemur-R & 2C printers only
2	424181	Cable, Print Head 2C (one on each side)
3	SQ OPTO-JST**	Opto Detector cut (JST connector)
3*	SQ OPTO	Opto Detector cut (AMP Connector)
4*	SQ LOAD-JST**	Opto Detector Ticket load (JST connector)
4*	SQ LOAD	Opto Detector Ticket load (AMP Connector)
5	423760-L3B-Z	Platen complete
6	424012-PG-5	Platen Paper Guide
7	424012-PRES-C	Presenter Roller Assembly
8	SQ OPTO-C-UX**	Opto Detector cutter knife (JST Connector)
8*	SQ OPTO-CX	Opto Detector cutter knife (AMP Connector)
9	PM25L-024	Stepper Motor
10*	KJ46**	Logic Board (JST connectors)
10*	KJ46-E**	Logic Board with Ethernet (JST connector)
10*	K46	Logic Board (AMP connectors)
10*	K46-E	Logic Board with Ethernet (AMP connector)
10*	KR46***	Logic Board (JST connectors)
10	KR46-E***	Logic Board with Ethernet (JST connector)
11	424012-BRG-1	Platen Sleeve Bearing (one on each side)
12	423445Z2	Cutter Knife
13	423456Z2	Fixed Blade
14	424069-Z-1	Front Paper Guide for KR46 logic board

Parts with grey background are best replaced by a qualified BOCA service technician.

* Customer dependent and not shown in photos

** Part used on printer serial number 457007 and higher.

*** In March 2022 the KJ46 logic board was phased out and the KR46 logic board took its place (printer serial number 488034 and higher).

If you need to replace a KJ46 logic board with a KR46 logic board, then the Front Paper Guide (p/n 424069-Z-1K) needs to be replaced due to the interface ports being in different locations.



Below is a KR46 board





12.0 Accessories

The Lemur-Z printer has a wide range of accessories designed and tested to work with your printer. The accessories can be used by themselves, combined with other printer accessories, or as part of your own unique printer integration design. At the time of this guides release, the following accessories are available for your printer:

- Infeed Guide We offer different infeed guides (printer may be ordered with infeed guide preinstalled)
 - Adjustable external infeed guide (<u>P/N 424050</u>)
 - Adjustable internal infeed guide (<u>P/N 424069-Z-7</u>)
 - Center infeed guide (<u>P/N 424069-Z-5</u> (58mm) or <u>424069-Z-8</u> (80mm)) for Zebra replacement integration.
- Base mounting adapter (<u>P/N 424077</u>) for Zebra replacement integration.
- Printer mounting plate (<u>P/N 424213</u>)
- Receipt roll holder (<u>P/N 424051-U</u>)
- Low paper sensor for roll holder (<u>P/N 424078</u>)
- Low paper sensor for fan folder stock (<u>P/N 424084</u>)

12.1 Adjustable External Infeed Guide Installation

The below reviews installing an optional adjustable external infeed guide.



Kit will include paper guide and four mounting screws.

1. The paper guide is installed onto the Lemur-Z via four mounting locations.



2. Install the paper guide on the back of the printer and align the mounting holes to the above referenced installation location. Install the four Philip 3/16" Hex head screws that were included with the paper guide and tighten.



3. The black slider bar may be adjusted to accommodate media widths from 2" to up to 3.25".

12.2 Adjustable Internal Infeed Guide Installation

The adjustable infeed guide enables the Lemur-Z to be used with 2" to 3.22" wide media when the external adjustable infeed guide (p/n 424050) is not practical. For 3.25" wide media the guide is not needed.

The below reviews how to install the optional infeed guide.

1. The guide is mounted onto the back of the Lemur-Z using the hole shown in the photo below.



2. Use the #4 -40 self-tapping screw that came with guide to mount it onto the printer. Firmly hold the guide down while tightening the screw.





3. The guide may be adjusted for media widths in between the two above mentioned positions. The guide comes with four index slots that match up with the slot on the printer for the desired index width.



12.3 Center Infeed Guide Installation

The center 58mm or 80mm infeed guide enables the Lemur-Z to be used in existing kiosk using said media widths that needs to be centered in the middle of the printer.

The below reviews how to install the optional centering paper guide.

1. The guide is mounted onto the back of the Lemur-Z using the hole shown in the photo below.



2. Use the #4 -40 self-tapping screw that came with guide to mount it onto the printer. Firmly hold the guide down while tightening the screw.



Paper Path 3.25" wide



Above shows 80mm center guide (p/n 424069-Z-8)



12.4 Base Mounting Adapter Installation (P/N 424077)

The base mounting adapter enables the Lemur-Z to have similar mounting holes as a Zebra KR203 and KR403 printer. It also allows it to be used with the quick fit hubs when the retracting feature of the printer is not being used.

Using the three Philip head #4-40 self-tapping screws, that came with the plate, to mount the plate onto the bottom of the Lemur-Z printer.

The side of the plate that has countersink holes needs to face away from the bottom of the printer.





Care needs to be taken concerning mounting screw length, see guide below. *The use of the incorrect length screw may damage the circuit board.*



Х	0.060" (1.55mm) minimum	Printer mounting surface					
Υ	0.140" (3.55mm)	Printer base plate & adapter thickness					
Ζ	0.030" (0.76mm) maximum	Penetration into circuit board area					
X +	X + Y = minimum length						
X +	Y+ Z = maximum length						

12.5 Printer Mounting Plate Installation (P/N 424213)

The Printer Mounting Plate performs several functions:

- Provides a solid printer mounting base.
- Designed to work with the 424051-U roll holder when the roll holder arm is positioned below the printer.
- This plate or an equivalent custom design is recommended to protect the cables and media from interfering with each other and the operator when the media roll is mounted under the printer.
- Includes an inertia dampening spring roller to optimize printer performance.

The plate attaches to the three mounting hole locations on the bottom of the Lemur-Z printer.



Above shows the location of the six .112" through holes

Use the three 3/16" Hex head Taptite screws, that came with the plate, to mount the plate onto the bottom of the printer.



Bottom View



Top View



Side View

12.6 Receipt Roll Holder Installation (P/N 424051-U)

This roll holder kit is designed to be used with either a Lemur-X or Lemur-Z model printer. It may also be used with a Lemur-Z using an optional 58mm or 80mm center infeed guide. This kit will work with a roll that has a minimum cord inner diameter of 1.0" or greater.

Kit will include mounting plate, roll holder arm, spindle, stopper disc and mounting hardware.



•	,	•••		5		
	Ť	2X	3/16" Hex Head #4 Taptite		1X	3/32" Allen head screw
	T	2X	1/4" Hex Head #8 Taptite		1X	3/32" Allen wrench

Some parts my look different than the above photo

1. Attach the spindle onto the roll holder arm using one ¼" Hex head #8 Taptite screw. There are two mounting locations that may be used depending on roll outer diameter size.



2. Install the roll holder arm mounting plate onto the printer using two 3/16" Hex Head #4 Taptite screws. The plate may be installed on either side of the printer.



3. Install the one 3/32" Allen head screw into the mounting plate. Location will depend on the desired angle you want to set the arm at. See last page for diagram of possible arm positions angles.



 Install the roll holder arm onto the mounting plate and secure it in place with the provided ¼" Hex head #8 Taptite screw. Below photo shows the arm set to the 30° positions. Arm position will vary depending on what degree position is used.



5. Slide the roll holder block onto the spindle with the sensor tab away from the roll holder arm.



- 6. Slide the block to the desired location.
 - a. For Lemur-Z without or with 80mm center infeed guide, slide the block all the way to the roll holder arm. See below photo.



b. For 58mm, the block should be spaced 0.474" away from the roll holder arm. The roll needs to line up with the center infeed guide. See below photos.





c. Orientate the sensor tab so it is parallel to the floor or bottom of printer.



d. Tight the Philip screw on the block to hold it in place.



7. Tear off a full turn of the paper from the new paper roll. **Caution:** This is important as the outer end of the paper is usually secured to the roll with glue or other adhesive substance that may cause paper jam or damage the print head.



8. Place the Receipt roll onto the spindle. If the thermal side of the media is towards the outside of the roll, the roll will turn towards the printer (as shown in the photo below). If the thermal side of the media is towards the inside of the roll, the roll will turn away from the printer.



9. Install the stopper disc onto the spindle and slide into place. The stopper should be positioned to prevent the roll from moving too much from side to side but be allowed to spin freely.





10. Once you have the stopper in the desired position, tighten the Philip head screw to hold the stopper in place.



- 11. Once the stopper disc is in place it should not be necessary to remove it to install or remove a roll, provided the roll core inner diameter is 1.0" or greater. The core should slip over the disc.
- 12. If the roll holder has been configured for use with 58mm center infeed guide you will want to run the printer to ensure media is feeding properly into the printer. If not then make necessary adjustment to the roll holder block and stopper disc for proper alignment with the printer.

12.7 Low Paper Sensor for Roll Holder (P/N 424078)

An optional low paper sensor may be installed onto the BOCA receipt roll holder. This sensor will alert the printer when the paper roll physically goes below the sensor eye. When this happens, the printer will send a low paper status message (0F hex or **15** decimal) to the host computer.

Kit contains the following items:



	1X Low paper sensor		1 X		18" Cable	
ľ	1X	2-56x 3/8" Phil flat head screw	0	1X	Flat washer	
0	2X	2-56x3/16" nut		2X	Adhesive mounting pad	
-	2X	Cable tie				

The sensor is installed onto the roll holder arm in the following manner.

- 1. Choose the sensor location that will work best with the position the roll holder arm will be installed at.
- 2. Insert the screw into the countersink side of the arm or roll holder block.



3. Install the sensor, so that the sensor tab is facing towards the slot on the arm or roll holder block.



4. Install the flat washer and 3/16" nut onto the screw. Tighten the nut. Install the second nut and tighten.



5. Attach the cable tie mount to the roll holder arm, similar to what is shown in the below photo. Connect the white connector to the sensor and route the wire through the hole in the arm. Zip-tie the cable onto the cable tie mount.



Roll holder arm (P/N 424051-U)

6. Once installed, you may plug the sensor connector into the low paper connector on the printer.



In the Lemur-Z printer a low paper condition is signaled when the printer returns a low paper status message (In Hex *OF*, in decimal *15*) to the host computer. The low paper condition is detected when the see through opto beam is no longer blocked. Once the low paper status is returned it will not be returned again until the triggering condition has been reset. This is accomplished by loading stock so the opto eyes are covered and cycling printer's power.

The host computer can also solicit the current status of the printer by sending an FGL status request (<S1>) command. The printer will respond with a paper low status if the paper low state has been reached and the printer is online (paper out hasn't been reached) otherwise is will return an X-ON status

The following explains how to test the low paper sensor once installed

- 1. Make sure the cable is connected to the low paper sensor and the printer.
- 2. The SQ low paper sensor needs to be blocked, installing a roll of media onto the roll holder or simulate it being blocked by a roll of media.
- 3. Power up the printer and ensure it is able to print a self-test when the center TEST button is pressed.
- 4. The printer is connected to a Windows based host computer.
- 5. Install the BOCA configure and test program to the Window computer the printer is attached to. Below is a link to the installation guide for said program.

https://www.bocasystems.com/documents/Testing%20a%20BOCA.pdf

Once the programing is running and you are able to print a FGL test ticket from said program, then that will indicate the programing is communicating with the printer.

- 6. Repeat step # 10 (in above mentioned installation guide) but this time enter 5 as the Number of Tickets to print. Click on the Send button.
- 7. After the first receipt / ticket has printed, unblock the ticket low sensor.
- 8. After the printer is finished printing the five receipt/ tickets you should see the below responses on the Messages area. You should see "Low Paper" in with the "Ticket ACK". Where the "Low Paper" shows up for you may differ the key is the printer acknowledges the low paper.

Ticket ACK Ticket ACK Ticket ACK Low Paper Ticket ACK Ticket ACK

9. You have now completed testing of the SQ low paper opto sensor setup.

12.8 Low Paper Sensor for Fan Folded Stock (P/N 424084)

An optional low paper sensor may be used for fan folded stock.

Each kit comes with the following:



	1X	Low paper sensor	\bigcirc	1X	36" Cable
ľ	1X	2-56x 3/8" Phil flat head screw	0	1X	Flat washer
0	2X	2-56x3/16" nut			

This kit is designed for use in a location that will not be using one of the available BOCA roll holder kits.

The paper low sensor opto is to be mounted on the side of the media locator tray to the customer's specified height. The distance from the sensor eye to the side of the media should be no greater than .330" (8.38mm) but may be less. Below shows one possible mounting configuration. The opening may be round or square but must be large enough to not short any of the components on the board to metal.



Above shows a .50" hole.

The sensor is installed in the following manner:

1. Insert the screw into the countersink side.



2. Install the sensor, flat washer and 3/16" nut onto the screw. Tighten the nut. Make sure the tab on the sensor aligns with the slot in the roll holder arm and tighten the nut.





Distance between opto eye & stock is no greater than .330"

3. The white connector of the cable is plugged in to the sensor opto. The other end is connected to the low paper connector on the printer.



For the Lemur-Z printer, a low paper condition is signaled when the printer returns a low paper status message (In Hex *OF*, in decimal *15*) to the host computer. The low paper condition is detected when the see through opto beam is no longer blocked. Once the low paper status is returned it will not be returned again until the triggering condition has been reset. This is accomplished by loading stock so the opto eyes are covered and cycling printer's power.

The host computer can also solicit the current status of the printer by sending an FGL status request (<S1>) command. The printer will respond with a paper low status if the paper low state has been reached and the printer is online (paper out hasn't been reached) otherwise is will return an X-ON status.

The following explains how to test to make sure the printer is seeing the SQ opto.

- 1. Make sure the cable is connected to the low paper sensor and the printer.
- 2. The SQ low paper sensor needs to be blocked, installing a roll of media onto the roll holder or simulate it being blocked by a roll of media.
- 3. Power up the printer and ensure it is able to print a self-test when the center TEST button is pressed.
- 4. The printer is connected to a Windows based host computer.
- 5. Install the BOCA configure and test program to the Window computer the printer is attached to. Below is a link to the installation guide for said program.

https://www.bocasystems.com/documents/Testing%20a%20BOCA.pdf

Once the programing is running and you are able to print a FGL test ticket from said program, then that will indicate the programing is communicating with the printer.

- 6. Repeat step # 10 (in above mentioned installation guide) but this time enter 5 as the Number of Tickets to print. Click on the Send button.
- 7. After the first receipt / ticket has printed, unblock the ticket low sensor.
- 8. After the printer is finished printing the five receipt/ tickets you should see the below responses on the Messages area. You should see "Low Paper" in with the "Ticket ACK". Where the "Low Paper" shows up for you may differ the key is the printer acknowledges the low paper.
 - Ticket ACK Ticket ACK Ticket ACK Low Paper Ticket ACK Ticket ACK
- 9. You have now completed testing of the SQ low paper opto sensor setup.

APPENDIX A – ETHERNET PARAMETERS

General

Each Boca Ethernet Printer is assigned a unique MAC address based in part on the printer's serial number. All Boca printers are factory configured in DHCP enabled mode. (Exceptions may be made by special request.) If the printer is unable to get a dynamic IP address from the customer's network in the allotted time period (about four minutes), it will default to the 10.0.0.192 address. You can select a different fixed IP address either via a Web Browser (see below).

ETHERNET – Quick Installation Guide

- Connect the printer to your network (the IP address will be automatically assigned by your DHCP server)
- Load media into the printer
- Wait four minutes to allow assignment of IP address
- Print a self-test by pressing the printer's center TEST button. IP address is shown on this printout.
- Open your web browser and type the printer's IP address. For example, if the IP address was 010.000.000.192 they you would type //10.0.0.192.
- The below login menu will pop up depending on what firmware you printer has:
 - If printer had "N" version firmware you will see the below. Click on Submit button to go to the configuration page if you do no was to pass work protect.

Login
Note: the printer's webpage is currently not password protected.
If you wish to secure the webpage enter a password, otherwise leave blank. (Password can be up to ten printable characters)
Enter Password:
Confirm Password:
Submit

If printer has "R" version firmware you will see the below. Username = boca & Password = printer. Your IP address will be different than what is shown below.

Your conne	ction to	this site	is not secu	2.145 ure	
Username					
Password					

The menu will come up, click on Submit button to go to the configuration page if you do no was to pass work protect.

Login
This webpage is password protected.
If you wish to change your password please fill in a new one. (Password can be up to ten printable characters)
Otherwise, just press Submit.
Current Password:
New Password:
Confirm New Password:
Submit

• Below shows the configuration page

Boca Systems' Printer Configuration Page									
		Firmware:		FGL46	R5 / SB07				
		Serial Number:		XXX					
		On Time:		000:00):04:37 d/h/m/s				
		MAC ID:		00.0D.	71.00.00.00				
FACTORY MENU: items with an * should <u>not</u> be changed or selected without first consulting Boca Systems.									
BAUD RATE=	115200,N,8,1 ¥	MINI/MICRO=	MINI	•	PRINT SPEED=	5 ~	DIAGNOSTIC MODE=	NO V	
TICKET TYPE=	SPECIAL TICKET V	STATUS ENABLED=	USB/SER	•	TRANSPARENT MODE:	NO V	PAPER MODE=	RECEIPT V	
*HEAD DPI=	200 🗸	SPECIAL HEAD=	NO	~	PATH TYPE=	PATH1 🗸	BUFFER MODE=	MULTIPLE MODE -	
CLEAR DOWNLOAD=	NO V	DEFAULT SETTINGS=	NO V		CUT1 COUNT=	16 (1-200)	CUT2 COUNT=	16 (1-200)	
*2-SIDED PRINTER=	NO V	PARK TICKET=	NO V		TICKET MODE:	SINGLE 🗸	PRINT MODE:	THERMAL 🗸	
PRINT INTENSITY=	NORMAL V	SKI MODE=	NO V		FLASH ACK MODE=	NO V	SOFTWARE BUSY=	NO V	
BI-DIRECTIONAL=	NO V	TEST TICKET=	STANDARD	~	BASEBALL MODE=	NO 🗸	USB=	YES 🗸	
FONT ENCODING=	NONE V	ACKNOWLEDGE=	NORMAL 🗸		*HIGH SPEED MODE=	NO 🗸	BUZZER=	DISABLE V	
*SHUFFLE MODE=	NO V	*CUTTER TYPE=	BOCA 🗸		*CUTTER SPEED=	NORMAL 🗸	ORIENTATION=	NORMAL V	
ETHERNET=	DHCP/SUB/GATE	IP ADDRESS=	010.000.002.14 (Enter 12 digits	5 ;)	SUBNET MASK=	255.255.0.0 🗸	DEFAULT GATEWAY=	010.000.002.002 (Enter 12 digits)	
DNS SERVER:	008.008.008.008 (Enter 12 digits)	SPEED/DUPLEX=	AUTO-NEGOTI	ATE 🗸	DEFAULT WEBPAGE=		WEBPAGE REFRESH=	15 seconds	
TICKETS REMAINING 1=	0	TICKETS LOW 1=	0		TICKETS REMAINING 2=	0	TICKETS LOW 2=	0	
RFID=	NO V	USB DEVICE TYPE=	PRINTER V		BLUETOOTH=	NO V	AUTO CASH DRAWER=	NO V	
MAGNETICS=	NO V								
<u>Realtime Status</u> <u>Configure Email</u> <u>Configure SNMP</u>	Realtime Status SAVE CHANGES Configure Email Press Save button to store changes! Note: Printer will reset Configure SNMP after a few seconds. In order to continue, you must refresh your screen after printer resets!								

- If you are going to set a static IP address then you will need to change the ETHERNET setting to YES. Set IP address, Subnet Mask and Default Gateway to the values you want.
- If you experience any problems, please refer to the Ethernet section of our FGL Programming Guide.

APPENDIX B – TESTING A LEMUR-Z

Boca Systems, Inc. has developed various program that allows customers to communicate from a host computer or mobile device to the printer. Below are the various configure and test programs we offer:

WINDOWS: (Allow connection via Ethernet/ Wi-Fi, Parallel, Serial, USB-HID interfaces and print driver connection) <u>https://www.bocasystems.com/documents/Testing%20a%20BOCA.pdf</u>

MAC: (Allows Ethernet/Wi-Fi, USB-HID interfaces or print driver connection) <u>https://www.bocasystems.com/documents/Testing%20a%20BOCAmac.pdf</u>

iPad: (Allows Bluetooth and Ethernet/Wi-Fi interfaces connection) <u>https://apps.apple.com/us/app/bocaprinter/id951179236</u>

APPENDIX C – DOWNLOADING SOFTWARE COMMANDS

Menu setting changes may be done by utilizing the software commands listed below. This is best done using configure and test program for Windows (see <u>Appendix B</u>)

If needed, the printer may be defaulted back to its original factory settings as follows. With the printer powered off hold down the TEST button and then power up the printer. Keep the TEST button held down for 10 seconds and release (the printer will reset at this time).

Once the customer program is running and is connected to the printer, click on the "Send Text" button. For the MAC customer program under the Select Printer Operation choose "Send Text Commands".



Once the Text Data box comes up you type the text command in the Data input box. Then click on the OK button and the text data will be sent to the printer.



You may click on the HELP button at any time to open up the help window.

The following commands are available for the Lemur-Z: the command only needs to be sent once to take permanent effect. These commands are not to be included along with the data that is being sent to print a receipt or ticket.

Note: The printer may be used with stock that has a black timing mark if needed Lemur-Z (<u>www.bocasystems.com/ticket_specs10.html</u>).

When the Lemur-Z leaves the factory, it is configured for use with receipt rolled stock (stock with no black timing mark) unless otherwise specified. If you are using the printer with stock that has a black timing mark then it will need to be taken out of receipt mode. See <u>Appendix C – DOWNLOADING SOFTWARE COMMANDS</u> to download the appropriate software command.

- <pmd> this will configure the printer for use with media with a black timing mark. Printer will reset after receipt of command.
- **<pmr> this** will configure the printer for use with receipt stock without a black timing mark. Printer will reset after receipt of command.
- <ket#>This will enable the retract feature and set the kiosk eject timeout command (# = seconds value). This controls the time delay the printer will retract the media if not taken. The default value is 3 seconds. Range is 1 - 255 seconds.

For example, the <ket10> command will configure the printer to present the media for 10 seconds before retracting it back if not taken. *The printer will issue a blank receipt/ ticket upon receipt of said command.*

- **<ket0>** Will disable the retracting feature of the printer. The printer will issue a blank receipt/ ticket upon receipt of said command.
- **<kem#>** Kiosk eject mode configuration command. Each bit represents a different configuration option. *The printer will issue a blank receipt/ ticket upon receipt of said command.*

LOOP	= Loop media inside	= no loop
NAK	= no NAK	= NAK on trashed media
MOTOR	= small platen motor	= N/A
EJECT	= present media to be pulled out	= eject media immediately

LOOP						
NAK						
Motor						
Eject						
Value	0	1	2	3	8	9

The default value is zero (0). This configures the printer as follows: Internal media loop, no NAK on trashed media, small platen motor and media is presented to be pulled out by customer. Note: if media is not removed within the 'kiosk eject timeout' period it will be retracted into the trash bin (trashed).

As an example, if you wanted the media to not loop inside before ejecting immediately you would send <**kem9>** command to the printer.

REVERSE – by default the printer does not back in in receipt mode. Some may require the print position be closer to the leading edge of the media (the first part that comes out of the printer). To set the printout closer to the leading edge of the receipt, add 16 to the above values. Only support is software version N158 and higher.

WAIT – by default the printer will not print the next receipt/ticket until the receipt/ticket is taken when the printer is sent present mode. Some may require the ability to be able to print a receipt/ticket even if the receipt/ticket has not been taken. To disable the wait mode, add 32 to the above values. This setting is normally used in conjunctions with the <ket0> command. Only support is software version N158 and higher.

<US> software command reverses the media behind the platen so it can easily be removed without lifting the printhead. This command should be issued after a receipt/ ticket has been printed and removed or is idle. The printer will then wait for the receipt/ ticket to be pulled out completely before trying to reload stock.

FAILSAFE MODE:

To enter Failsafe mode, hold the <u>'FAILSAFE' button</u> in for at least 5 seconds while powering on the printer. If the USB port is connected you should hear the normal USB port detected sound on the computer. Failsafe mode is for cases where you need to reconfigure the printer before it proceeds to initializing. Note: the Ethernet interface does not work in this mode.

Below are Ethernet Mode Commands:

<eth#> the printer will reset after receipt of this command.

This command sets the Ethernet mode for the printer and is permanently stored in flash. This can also be set using the 'Factory Menu'. The values can range as shown below:

- 0 NO Ethernet Interface disabled
- 1 YES Ethernet Interface enabled (uses static IP address).
- 2 Ethernet DIAGNOSTIC Mode (prints all packets transmitted or received by the printer).
- 3 Ethernet Diagnostic VALID PACKET Mode (prints only valid packets transmitted or received by the printer).
- 4 DHCP ENABLED (automatically attempts to get an IP address from Local Server). default
- 5 DHCP/SUB/GATE (automatically attempts to get an IP address/Subnet Mask/Gateway from Local Server).

6 - DHCP/NR* (automatically attempts to get an IP address from Local Server and then register the name with the local NetBIOS name server – usually the WINS Server).

7 - DHCP/SUB/GATE/NR* (automatically attempts to get an IP address/Subnet Mask/Gateway from Local Server and then register the name with the local NetBIOS name server – usually the WINS Server).

PRESENTER COMMAND SETTINGS

Below are various ways you may configure the Lemur-Z, concerning presenting the media after it is printed.

a. <u>Present with no retract</u> - The following software command will disable the retract feature of the printer: **<ket0>**

The printer will present and hold the media in place to be taken. You are not able to print the next transaction until the receipt/ ticket has back taken out of the presenter. The printer will issue a blank receipt/ ticket upon receipt of command and command only needs to be sent once. This is how a printer will leave the factory unless otherwise specified.

b. **<u>Present and retract</u>** - The printer will present and hold the media in place to be taken and then retract it back into the printer after 3 seconds. This is how the printer is currently configured.

You may adjust the eject timeout by sending the following command to the printer: **\langle ket# \rangle \langle p \rangle # =** the timeout value is seconds. The current default timeout value is 3. The printer will issue a blank receipt/ ticket upon receipt of command and command only needs to be sent once. For example, if I wanted to increase the timeout to 10 seconds then use $\langle ket10 \rangle \langle p \rangle$.

You are not able to print the next transaction until the receipt/ ticket has been taken out of the presenter or if it has been retracted back if not taken.

c. <u>Present with no retract without wait mode</u> - The following software command string will disable the retract feature and enable you to print a receipt/ ticket even if said media is still is in the presenter: <bce><ket0><kem32><bcd>

You will be able to print the next receipt/ ticket event with the media still in the presenter. The media sitting in the presenter will be ejected out prior to the next one being printed.

d. <u>Eject the media completely out</u> – The following command will disable the present and retract feature an have the media ejected completely out of the printer once it has been printed: <kem8>. The printer will issue a blank receipt/ ticket upon receipt of command and command only needs to be sent once.

STATUS COMMAND SETTINGS

The Lemur-Z may also be configured for different status command setting.

The printer may only be configured with one of these commands at one given time. Both commands should not be used at the same time. If you are switching from <s90> to <s91> as part of your evaluation you will need to erase the prior status command. This may be done by sending the below software command to the printer. This command will cause the printer to issue out a blank receipt or ticket upon receipt.

<cs>

Normal status (default, if not denoted otherwise when ordered) printer will go offline in error state.

While the printer asynchronously sends status messages whenever a change in status occurs, status commands can only be processed when the printer is ready and fully operational (paper loaded, no faults, etc.). In other words, **no status** responses will be sent while the printer is busy and/or in an error state.

Hex	Dec	Description	Unsolicited	Solicited
06H	6	TICKET ACK – Sent after each receipt or ticket is printed	YES	NO
0FH	15	LOW PAPER – used with optional low paper sensor	YES	NO
10H	16	OUT OF PAPER – printer runs out of media	YES	NO
11H	17	X-ON – sent when printer goes ready	YES	YES <s1></s1>
12H	18	POWER ON – sent when printer is powered on	YES	NO
13H	19	X-OFF – sent when printer goes busy	YES	NO
*16H	*22	TICKET REMOVED – sent when media is taken	YES	NO
18H	24	PAPER JAM – printer is in a media jam error state	YES	NO
19H	25	ILLEGAL DATA – when printer receives illegal data	YES	NO
1AH	26	POWERUP PROBLEM – printer has powerup error	YES	NO
1CH	28	DOWNLOAD ERROR – error downloading font or image	YES	NO
1DH	29	CUTTER JAM – cutter knife has failed to move	YES	NO

Printer will send the below unsolicited and solicited status messages:

* Is only sent when printer path type is set for *path 1 – exit opto*, by default the printer is not set for this mode. Will not work if presenter is set to eject media completely out of the printer or set to ignore mode.

 Single Ticket Status Mode <s90> printer will remain online during error state. Printer will issue a black receipt upon receipt of said command.

The printer will respond to all status requests received during an error state. Disables various unsolicited status messages, see table below. However, non-status related data should <u>not</u> be sent during an error state, as it may cause unpredictable results. This mode should only be used when data is sent for one receipt or ticket at a time. After sending each receipt or ticket, the user should send an <S92> status request and receive either a "good status" (41H) or *low paper* (0FH) prior to sending additional receipt or ticket data.

Printer will send the below unsolicited and solicited status messages:

Hex	Dec	Description	Unsolicited	Solicited
06H	6	TICKET ACK – Sent after each receipt or ticket is printed	YES	NO
0FH	15	LOW PAPER – used with optional low paper sensor	YES	YES <s92></s92>
10H	16	OUT OF PAPER – printer runs out of media	NO	YES <s92></s92>
11H	17	X-ON – sent when printer buffer is ready after being full	YES	NO
12H	18	POWER ON – sent when printer is powered on	YES	NO
13H	19	X-OFF – sent when printer buffer is full	YES	NO
*16H	*22	TICKET REMOVED – sent when media is taken	YES	NO
*17H	*23	TICKET WAITING – sent when media is presented	YES	YES <s92></s92>
18H	24	PAPER JAM – printer is in a media jam error state	NO	YES <s92></s92>
19H	25	ILLEGAL DATA – when printer receives illegal data	NO	YES <s92></s92>
1AH	26	POWERUP PROBLEM – printer has powerup error	NO	YES <s92></s92>
1CH	28	DOWNLOAD ERROR – error downloading font or image	NO	YES <s92></s92>
1DH	29	CUTTER JAM – cutter knife has failed to move	NO	YES < \$92>
41H	65	GOOD STATUS – printer is ready	NO	YES <s92></s92>

Is only sent when printer path type is set for *path 1 – exit opto*, **by default the printer is not set for this mode**. Will not work if presenter is set to eject media completely out of the printer or set to ignore mode.

• Solicited Status Mode <s91> printer will remain online during error state. Printer will issue a black receipt upon receipt of said command.

When the printer is in an error state, it will only respond to <S92> status requests. Disables most unsolicited status messages, see below table. NOTE: All other data and status requests will be deleted until the printer returns to an error-free condition.

Hex	Dec	Description	Unsolicited	Solicited
06H	6	TICKET ACK – Sent after each receipt or ticket is printed	YES	NO
0FH	15	LOW PAPER – used with optional low paper sensor	YES	YES <s92></s92>
10H	16	OUT OF PAPER – printer runs out of media	NO	YES <s92></s92>
11H	17	X-ON – sent when printer buffer is ready after being full	YES	NO
12H	18	POWER ON – sent when printer is powered on	YES	NO
13H	19	X-OFF – sent when printer buffer is full	YES	NO
*16H	*22	TICKET REMOVED – sent when media is taken	NO	NO
*17H	*23	TICKET WAITING – sent when media is presented	NO	YES <s92></s92>
18H	24	PAPER JAM – printer is in a media jam error state	NO	YES <s92></s92>
19H	25	ILLEGAL DATA – when printer receives illegal data	NO	YES <s92></s92>
1AH	26	POWERUP PROBLEM – printer has powerup error	NO	YES <s92></s92>
1CH	28	DOWNLOAD ERROR – error downloading font or image	NO	YES <s92></s92>
1DH	29	CUTTER JAM – cutter knife has failed to move	NO	YES <\$92>
41H	65	GOOD STATUS – printer is ready	NO	YES <\$92>

* Is only sent when printer path type is set for *path 1 – exit opto*, by default the printer is not set for this mode. Will not work if presenter is set to eject media completely out of the printer or set to ignore mode.

The below software command may be sent to the printer to configure path 1 to exit opto configuration. This command only needs to be sent once to make the necessary setting changes and the printer will reset of receipt of said command. This setting change will still stay in effect event when the power has been cycled to the printer.

<p16>

APPENDIX D – WINDOWS USB DRIVER INSTALLATION GUIDE

Do not connect the printer to your computer's USB port until instructed.

Please contact your software provider to confirm if the use of our driver is required for their application. We recommend that the print driver is installed by either your system administrator or IT support staff.

These print drivers are intended to be installed on 64-bit Windows PC platforms from Windows 7 forward. This guide will cover the more common Windows versions - 10 & 11. The ARM platform is not supported.

Below is a link that provides details on how to installed the print driver:

http://www.bocasystems.com/documents/WindowsDriverInstallGuide.pdf

If you were not able to install the BOCA print driver using the above steps, please take a screenshot of the "printers and drivers" dialog and attach it to the support form located at <u>www.bocasystems.com/onlinesupportform.html</u>

APPENDIX E – MAC DRIVER INSTALLATION GUIDE

Do not connect the printer to your computer's USB port until step #13

Do not connect the printer to your computer's USB port until instructed.

Please contact your software provider to confirm if the use of our driver is required for their application. We recommend that the print driver is installed by either your system administrator or IT support staff.

Below is a link that provides details on how to installed the print driver:

https://bocasystems.com/documents/MAC_Driver_Install_Guide_2021.pdf

If you were not able to install the BOCA print driver using the above steps, please take a screenshot of the "printers and drivers" dialog and attach it to the support form located at <u>www.bocasystems.com/onlinesupportform.html</u>

APPENDIX F – SERVICE PLANS

For enhanced <u>warranty</u> coverage or for an out of warranty printer, we offer two types of service plans.

I. GOLD SERVICE

- Printer repair at BOCA facility (3 business day turnaround)
- Replace defective parts (ship within one business day) customer must return defective parts
- Return shipping (from factory to customer) via UPS Ground service (other delivery options to be billed to the customer)

A. PLATINUM SERVICE

- Printer repair at BOCA facility (3-day business day turnaround)
- Replace defective parts (ship within one business day) customer must return defective parts
- Return shipping (from factory to customer) via UPS Ground service (other delivery options to be billed to the customer)
- Replacement printer provided within one business day, if requested. (This service will become available one week after the platinum plan begins.)

The following items are not covered by the service plans:

- Preventative Maintenance the customer is responsible to provide a reasonable level of preventative maintenance as described in <u>section 9</u> of this manual.
- **Negligence** parts damaged by misuse or negligence, including damage due to defective media, is not covered
- **Pre-existing conditions** all printers must be in good working order prior to entering the plan. The customer will be invoiced for any parts and repair work needed on printers which were defective prior to the start of the maintenance plan. BOCA reserves the right to make this determination unilaterally.
- **Incoming Shipments** the customer is responsible for shipping charges to BOCA.

Please visit the link below for the latest pricing on our service plans. www.bocasystems.com/serviceplans.html

APPENDIX G – TECHNICAL SUPPORT

Please go to the link below if you require technical support with your BOCA printer. There is no fee for initial email support.

www.bocasystems.com/onlinesupportform.html

PHONE / EMAIL SUPPORT - BOCA provides free technical support via email for all printers under warranty or service contracts. (Phone support may be provided for covered printers at BOCA's sole discretion as needed.) Email support for non-warranty/non-contract printers is billable at \$100.00 per incident. However, BOCA may (at its sole discretion) choose to waive this fee for customers in good standing. Phone support for non-warranty/non-contract printers will be billed at a rate of \$100.00/hour for Level 1 support and \$200.00/hour for Level 2 support. Billing time will be rounded up to the nearest hour. A valid credit card number is required for phone support payments.

APPENDIX H – LEMUR-Z REFERENCE DRAWING



APPENDIX I – REFERENCE DRAWING ROLL HOLDER



APPENDIX J – REFERENCE DRAWING PRINER MOUNTING PLATE

