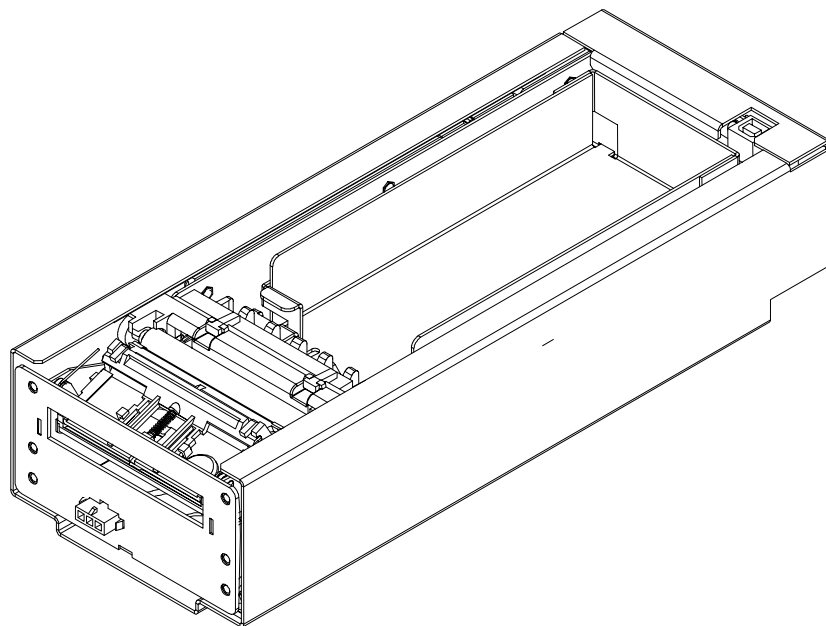




# NANOPTIX TICKET PRINTER Owner's Manual



First Edition: December 2002  
Last Revision: August 2005

Document #103385

# Legal Notices

## Disclaimer

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## Federal Communications Commission (FCC) Radio Frequency Interference Statement

### Warning

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

### Note

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

### Information to the User

This equipment must be installed and used in strict accordance with the manufacturer's instructions. However, there is no guarantee that interference to radio communications will not occur in a particular commercial installation. If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to contact Nanoptix Inc. immediately.

Nanoptix Inc. is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Nanoptix Inc. The correction of interferences caused by

such unauthorized modification, substitution or attachment will be the responsibility of the user.

In order to ensure compliance with the Product Safety, FCC and CE marking requirements, you must use the power supply, power cord, and interface cable which were shipped with this product or which meet the following parameters:

**Power Supply**

UL Listed power supply with standard 60Hz-50Hz, 100-240VAC input and 24VDC output equipped with AC line filtering, over-current and short-circuit protection.

Use of this product with a power supply other than the Nanoptix Inc. power supply will require you to test the power supply and Nanoptix Inc. printer for FCC and CE mark certification.

**Communication Interface Cable**

An approved Nanoptix interface cable must be used with this product. Use of a cable other than Nanoptix approved product will require that you test the cable with the Nanoptix Inc. printer and your system for FCC and CE mark certification.

**Power Cord**

A UL listed, detachable power cord must be used. A power cord with Type SVT marking must be used. For applications outside the North America, power cords that meet the particular country's certification and application requirements should be used.

Use of a power cord other than described here may result in a violation of safety certifications that is in force in the country of use.

**Industry Canada (IC)**

**Radio Frequency Interference Statement**

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

*Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.*

## Revision History

Date	Changes	Author
22/11/2001	Document Created	Denis Daigle
15/07/2003	Corrections to text	Denis Daigle
15/01/2004	Corrections, added FX chipset option	P.Chiasson
01/03/2005	Added hot swappable option	P.Chiasson
08/03/2005	Removed model ID and reviewed document	G. Robichaud

# Table of Contents

Revision History .....	iii
<b>1. About the Printer .....</b>	<b>1</b>
1.1 Description of Printer .....	1
1.3 General specifications.....	2
1.4 Printer Controls.....	3
Printer Reset (Service use only) .....	3
Paper Feed Button.....	3
LED .....	4
1.5 Changing Paper .....	5
1.6 Testing the Printer .....	6
1.7 Troubleshooting the Printer.....	7
Troubleshooting with LED.....	7
Printing Problems .....	7
Printer Does Not Work.....	8
<b>2. Media and Supplies Guide.....</b>	<b>9</b>
2.1 Thermal Paper Specifications.....	9
2.2 Ordering Thermal Paper .....	9
2.3 Ordering Miscellaneous Supplies .....	9
Power Supply and Power Cord.....	9
Ordering Communication Cables.....	10
Communication Cables Pin-Out .....	10
<b>APPENDIX A: Mechanical Drawings.....</b>	<b>11</b>

# Figures

<b>FIGURE 1: NANOPTIX TICKET PRINTER .....</b>	<b>1</b>
<b>FIGURE 2: PRINTER RESET .....</b>	<b>3</b>
<b>FIGURE 3: PAPER FEED BUTTON.....</b>	<b>3</b>
<b>FIGURE 4: LEDS POSITION.....</b>	<b>4</b>
<b>FIGURE 5: LOADING PAPER .....</b>	<b>5</b>
<b>FIGURE 6: TEST TICKET .....</b>	<b>6</b>
<b>FIGURE 7: MECHANICAL DIMENSIONS.....</b>	<b>12</b>

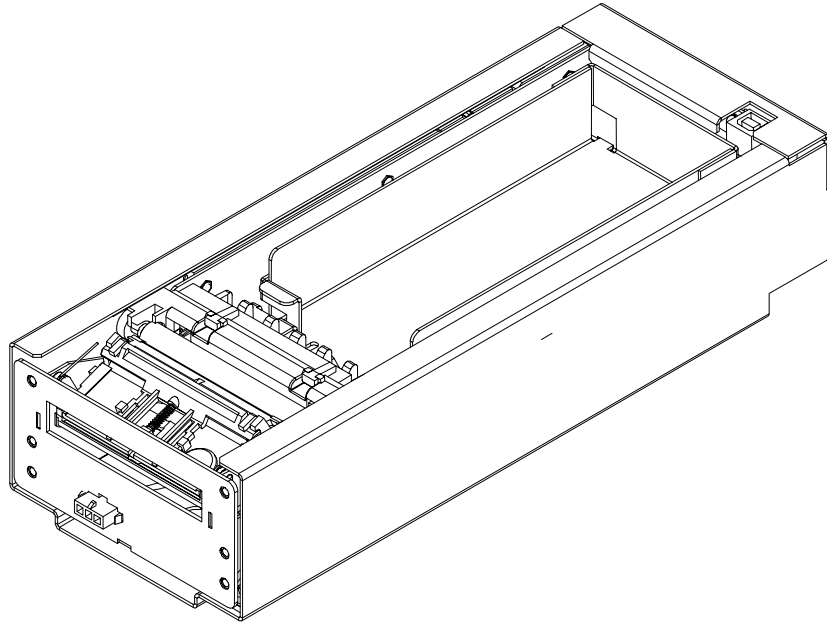
# Tables

<b>TABLE 1: SPECIFICATION .....</b>	<b>2</b>
<b>TABLE 2: TROUBLESHOOTING WITH LED .....</b>	<b>7</b>
<b>TABLE 3: TROUBLESHOOTING PRINTING PROBLEMS .....</b>	<b>7</b>
<b>TABLE 4: PRINTER DOES NOT WORK .....</b>	<b>8</b>
<b>TABLE 5: TICKET DIMENSIONS .....</b>	<b>9</b>
<b>TABLE 6: ORDERING THERMAL PAPER .....</b>	<b>9</b>
<b>TABLE 7: PART NUMBERS .....</b>	<b>9</b>
<b>TABLE 8: COMMUNICATION CABLES PART NUMBERS.....</b>	<b>10</b>
<b>TABLE 9: RS-232 SERIAL INTERFACE PIN-OUT .....</b>	<b>10</b>
<b>TABLE 10: PINOUT AND SIGNALS OF FRONT MOLEX (FOR BEZEL).....</b>	<b>10</b>

# 1. About the Printer

## 1.1 Description of Printer

The Nanoptix Ticket Printer is extremely fast, quiet, and very reliable. With thermal printing technology, there is no ribbon cassette to change, and paper loading is extremely simple. The printer is small enough to fit almost anywhere and is easy to use with the ticket exiting from the front.



**Figure 1: Nanoptix Ticket Printer**



### 1.3 General specifications

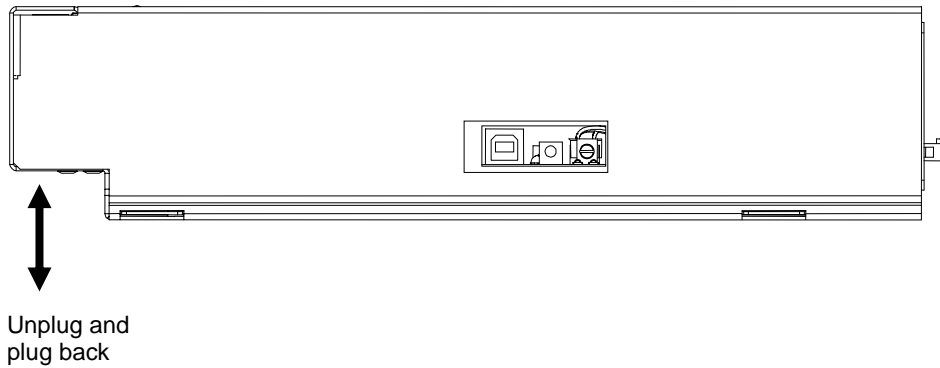
<b>Print Method</b>	Direct Thermal
<b>Resolution</b>	8 dot/mm (203 dpi)
<b>Print Width</b>	64mm
<b>Paper Width</b>	65mm
<b>Cartridge Size</b>	200, 400, 800
<b>Operating Temperature</b>	0 to 50 C
<b>Storage Temperature</b>	-40 C to +65 C
<b>Operating Relative Humidity</b>	5% to 90% RH at 50C (non-condensing)
<b>Communication Interface Options</b>	Serial and USB
<b>Memory/Firmware</b>	1 Mbit of SRAM, 2 Mbit of flash and 16Kbit of EEPROM
<b>Resident Character Sets</b>	Arial Bold (6 sizes) Note: Other Character sets can be programmed quickly
<b>Integrated Bar Codes</b>	UPC-A, UPC-E, interleaved 2 of 5, 3 of 9, Code 128, EAN 8, EAN 13. Note: Other Bar Codes can be programmed quickly
<b>Speed</b>	Up to 125 mm/second
<b>Sensors</b>	<ul style="list-style-type: none"> <li>• Paper in</li> <li>• Tray open</li> <li>• Top of form</li> <li>• Paper low</li> </ul>
<b>Human Interface</b>	Drop-in paper loading, status LED, paper feed button
<b>Dimensions</b>	113mm width x 67mm height x 286mm depth
<b>Weight</b>	2.3 Kg
<b>Immunity</b>	EN 55024 Information Technology Equipment
<b>Emission Standards</b>	United States - FCC Part 15 Subpart A Canada - Industry Canada ICES-003 Europe – EN 55022 Class A emissions Information Technology Equipment

**TABLE 1: SPECIFICATION**

## 1.4 Printer Controls

### Printer Reset (Service use only)

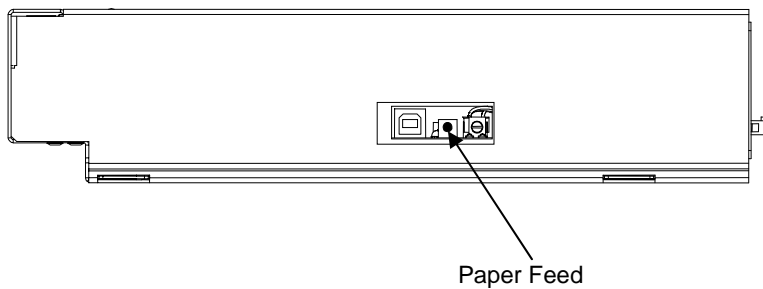
To reset the printer, simply unplug and plug the cable. Once plugged in, the printer goes through a startup routine and resets itself.



**Figure 2: Printer Reset**

### Paper Feed Button

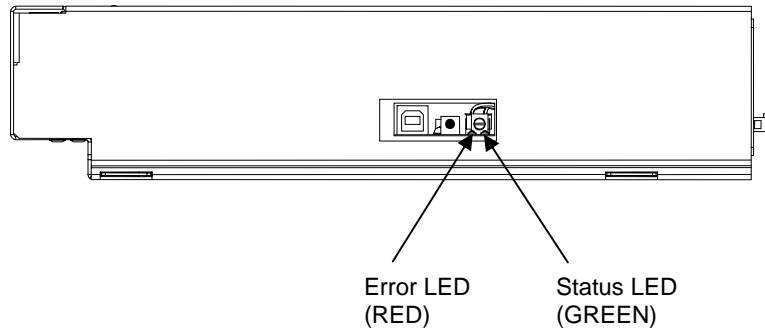
Use the Paper Feed Button to advance the paper. The paper will automatically feed. Tear off the form that has been fed and the printer will be ready to print on a full form.



**Figure 3: Paper Feed Button**

## LED

The LED on the main controller board shows the printer status. Please refer to section 1.7 for LED status and troubleshooting with LED. An external LED can be connected through the front 3-pin Molex connector. The pin-out is described in section 2.3.



**Figure 4: LEDs position**

## 1.5 Changing Paper

Change the paper when the paper is low or out.

**Caution:** Do not operate the printer or host computer if the printer runs out of paper. The printer will not operate without paper, but it may continue to accept data from the host computer. Because the printer cannot print any transactions, the data may be lost.

Load a stack of tickets into the printer. The maximum stack that will fit in the ticket cartridge is 200, 400 or 800 tickets depending on the cartridge option that was purchased with your printer.

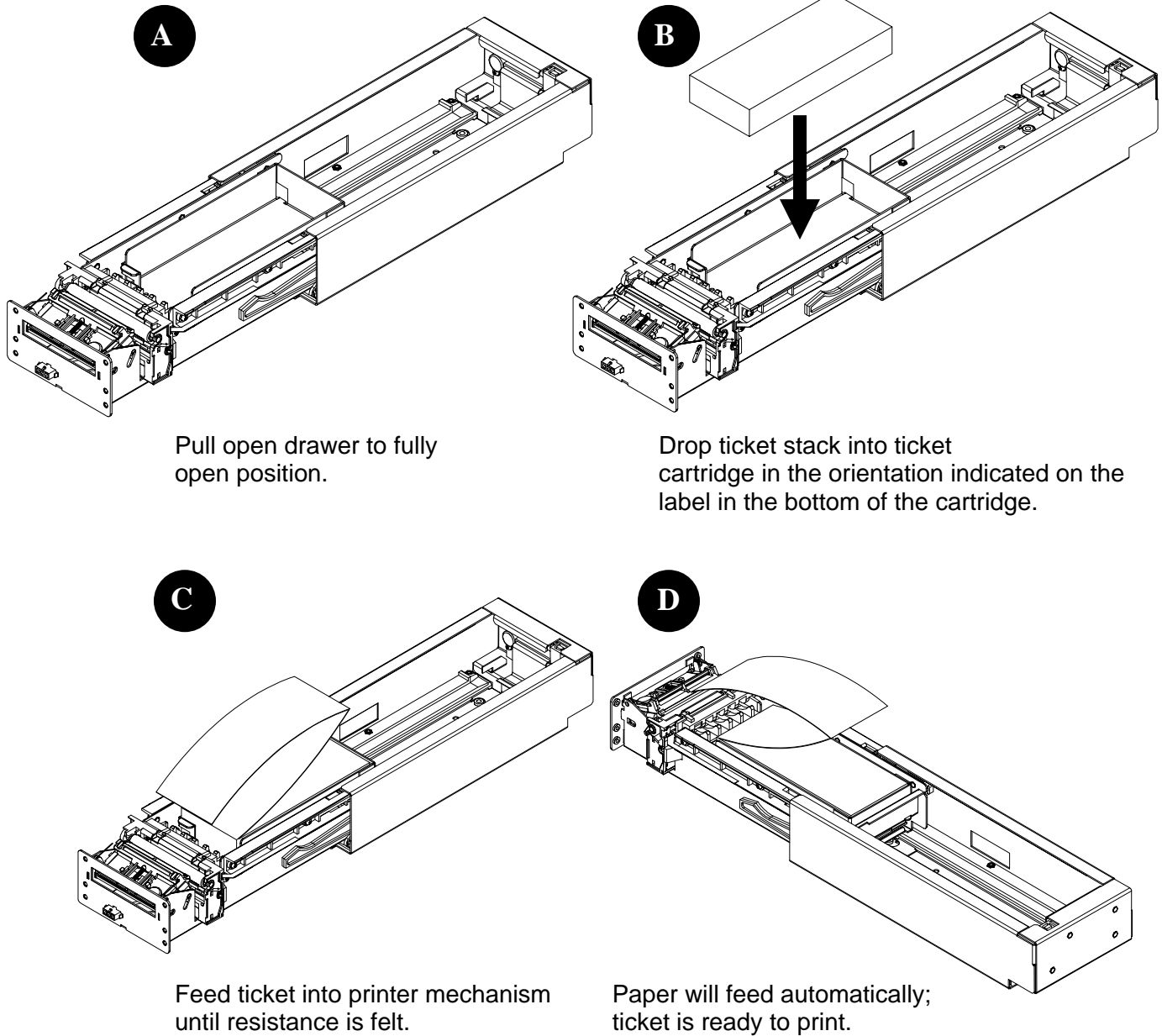


Figure 5: Loading Paper

## 1.6 Testing the Printer

Run this test to check the printer. The test prints and cuts a resident test ticket. Verify this ticket to judge the printing quality.

```
Model: TRITON-1
Firmware: TRT-2.4 1 J-61AU
COMMUNICATION
Interface: Serial
Baud: 19200
Data Bits: 8
Parity: NONE
Handshaking: NONE
Print mode: NTM
Aux Port: Disabled
PRINT CONTROL
Darkness Control: -15%
Voltage: 23.9 Volts
Temperature: 21 Celcius
Speed: 4.0 IPS
Black Bar Index: Right
SYSTEM RESOURCES
FLASH -Used: 48110
-Free: 17425
LIBRARY INVENTORY
Templates:
0,1,2,3,4,5,6,7,8,9,A,B
Print Regions:
1,2,3,4,5,6,7,8,h,9,A,B,C,D,E,F,G,I,J,K,L,N,O,P,Q,R,
S,T,U,Z,X,a,b,c,d,e,f,g,i,j,k,l,m,n,o,p,q,
Graphics: None
Fonts: 0,2,3,4,5,7,8,15
MANUFACTURING INFORMATION
Printer ID: N000024
Date Code: 07D20B14
PWM Setting: 7F7F7F7FFFFFFF
A to D: DE7AA400FD000000
Status: C21-2.41G-40-40-40-40-P
```

**Figure 6: Test Ticket**

To print the test ticket, power-on the printer while pressing and holding the Paper Feed Button for approximately 5 seconds. Once repetitive beeping is heard, release the paper feed button. A test ticket similar to above will be printed approximately 2 seconds after. Pressing the button again will result in blank tickets.

## 1.7 Troubleshooting the Printer

The printer is simple and generally trouble-free, but from time to time problems may occur. Follow these procedures to determine the cause and resolution of any problems the printer may be having. If the procedures in this section do not correct the problem, contact a service representative.

### Troubleshooting with LED

Status LED (green)	Error LED (Red)	Condition
OFF	ON	Paper Out
OFF	MED BLINK	Temperature Error
OFF	SLOW BLINK	Voltage Error
ON	FAST BLINK	Print Head Error
ON	FAST BLINK	Missing Black Index Mark
ON	FAST BLINK	Paper Jam

**TABLE 2: TROUBLESHOOTING WITH LED**

### Printing Problems

Problem	Possible Causes	What to Do
Receipt does not come out all the way.	Paper is jammed.	Open the tray and clear any jammed paper.
Printer starts to print, but stops while the receipt is being printed.	Paper is jammed.	Open the tray and clear any jammed paper.
Print is light or spotty.	Paper tickets loaded incorrectly.	Check that the paper is loaded properly.
	Thermal printhead is dirty.	Use recommended thermal receipt paper. Clean printhead at recommended intervals.
Vertical column of print is missing.	Change the paper stack to make sure the thermal coating is not the source. If it does not solve the problem, it could indicate a problem with the printer electronics.	Contact your authorized service representative.
One side or portion of ticket has not been printed	Change the paper stack to make sure the thermal coating is not the source. If it does not solve the problem, it could indicate a problem with the printer electronics.	Contact service representative.

**TABLE 3: TROUBLESHOOTING PRINTING PROBLEMS**

## Printer Does Not Work

<b>Problem</b>	<b>Possible Causes</b>	<b>What to Do</b>
Printer Does Not Function When Turned On.	Printer not plugged in.	Check that printer cables is properly connected on both ends.
		Check that the host or power supply is getting power.
	Tray not fully closed.	Close the tray.

**TABLE 4: PRINTER DOES NOT WORK**

## 2. Media and Supplies Guide

### 2.1 Thermal Paper Specifications

The printer requires qualified thermal paper with the following dimensions:

Width	Length
62 mm (2.441 in.)	120 mm (4.724 in.)
65 mm (2.559 in.)	150 mm (5.906 in.)

TABLE 5: TICKET DIMENSIONS

### 2.2 Ordering Thermal Paper

We recommend the following paper grade produced by Appleton and Kanzaki Specialty Papers. There are a number of paper converters qualified to supply this paper, provided the rolls are from these recommended grades.

Manufacturer	Numbers	Paper Grade
Appleton Papers	Tel:920-991-8438	Royale 700-4.5 (Qualification Pending)
Kanzaki Specialty Papers (USA)	Tel:888-526-9254 Fax: 413-731-8864	TO-381-N

TABLE 6: ORDERING THERMAL PAPER

Additional grades are being qualified and will be available soon.

### 2.3 Ordering Miscellaneous Supplies

#### Power Supply and Power Cord

Contact your sales representative to order the power supply listed in the table.

Part	Part Number
Power Supply (24VDC, 2.5A max., 60W)	102484HAP-00
Power Cord (North American)	102080
Power Cord (Continental Europe)	102086

TABLE 7: PART NUMBERS



## Ordering Communication Cables

Contact your sales representative to order the communication cables listed in the table. The numbers are for reference only. Suppliers may use other numbers.

Part	Part Number
RS232 Com Cable 14 Pin Universal FR to DB9 FR to 3 Pin Power MP	101103HAP-02
RS232 Com Cable 12 Pin FR to DB9 FR plus 3 pin MP	101101HAP-04
12 Pin RS232 FR to 14 Pin adaptor	102365HAP-01
USB Cable A-B (6 ft. Fully Rated)	100390

**TABLE 8: COMMUNICATION CABLES PART NUMBERS**

## Communication Cables Pin-Out

The tables below detail the connection pin-out for the Serial interface (12-pin Molex) on the printer side.

Pin	Signal Name	Printer I/O	Host I/O	Printer Function
1	Reset	Input	Output	Resets Printer
2	PRT_AUX_RXD	Input	Output	Auxiliary Receive
3	VAUX	Input	Output	Auxiliary Power
4	PRT_AUX_TXD	Output	Input	Auxiliary Transmit
5	Signal Ground	Signal Ground	Signal Ground	Signal Ground
6	24V	Power Input	n/a	Power Input
7	n/a	No connect	n/a	None
8	24V	Power Input	n/a	Power Input
9	Bezel_pwm	24V Output	n/a	Bezel Driver
10	Signal Ground	Signal Ground	Signal Ground	Signal Ground
11	PRT_RS232_RXD	Input	Output	Data Receive
12	PRT_RS232_TXD	Output	Input	Data Transmit
13	PRT_RS232_RTS	Output	Input	Handshake
14	PRT_RS232_DSR	Output	Input	Printer Ready

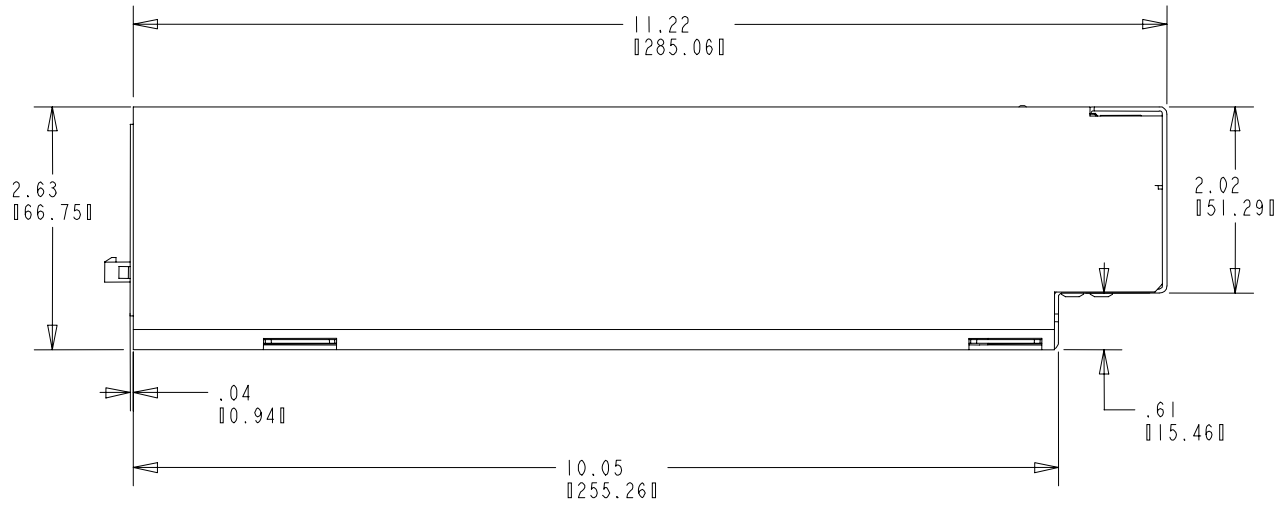
**TABLE 9: RS-232 SERIAL INTERFACE PIN-OUT**

The tables below detail the connection pin-out for the front Bezel Connector (3-pin Molex).

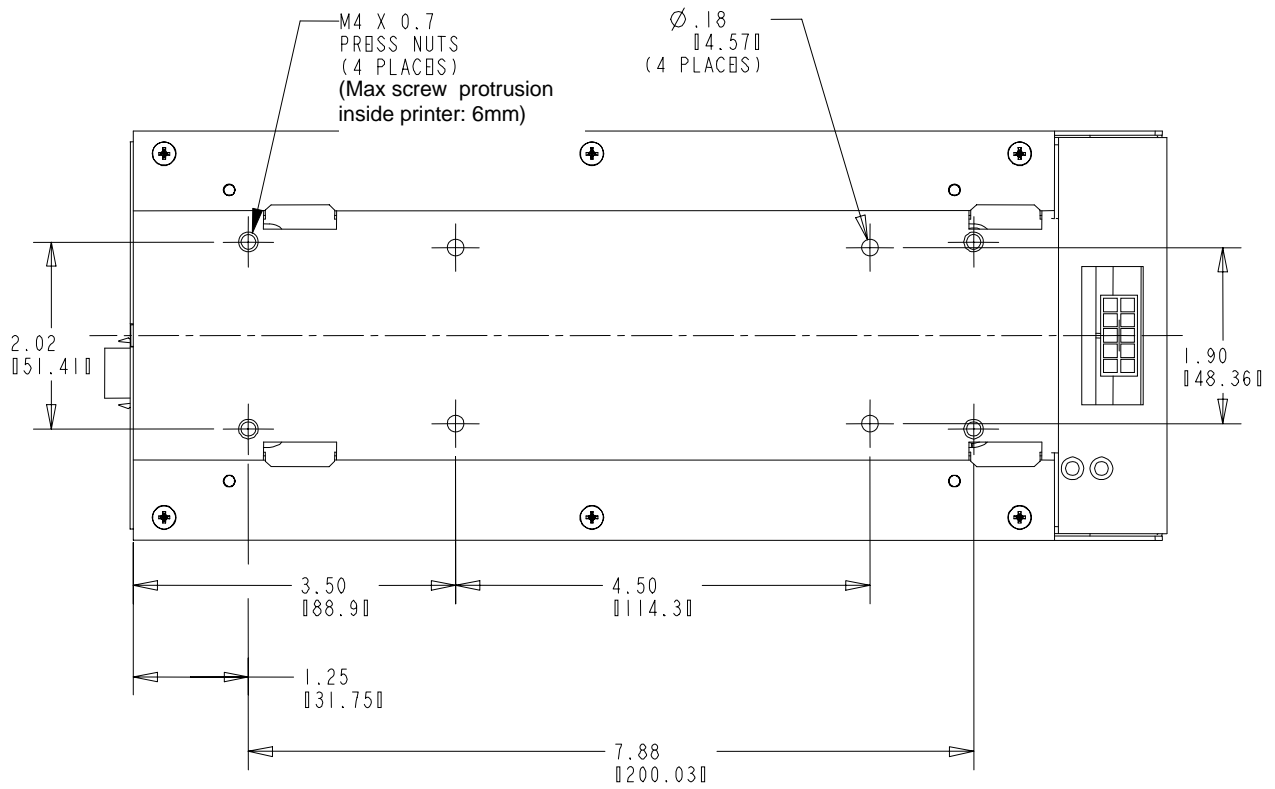
Pin	Signal	Printer I/O
1	Bezel PWM	Output
2	24VDC	Output
3	GND	GND

**TABLE 10: PINOUT AND SIGNALS OF FRONT MOLEX (FOR BEZEL)**

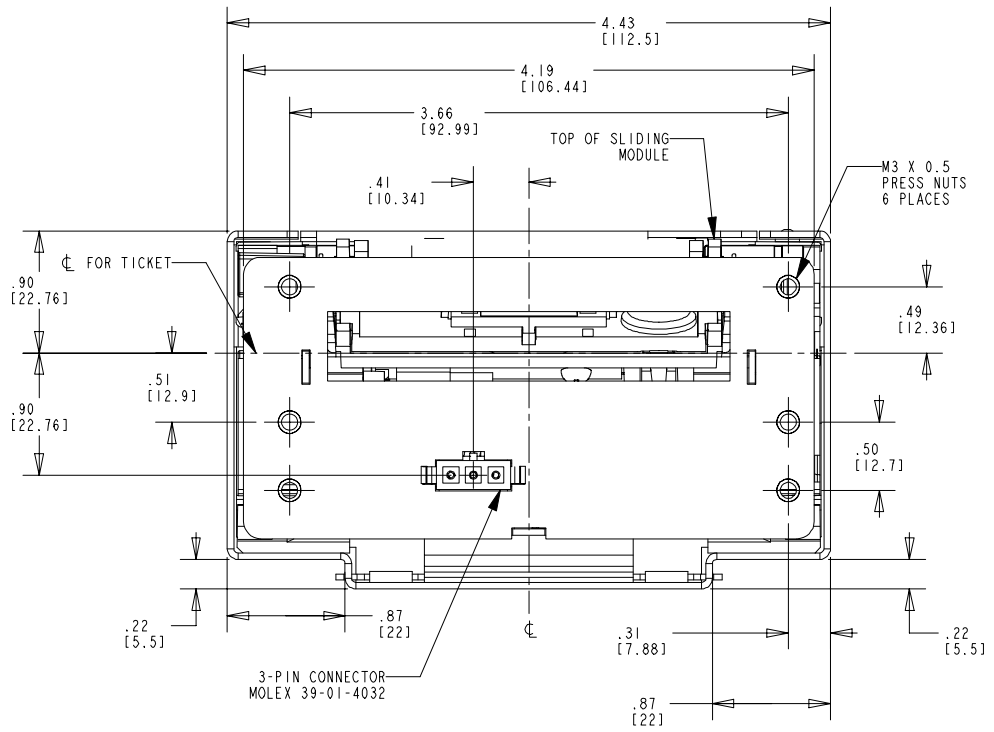
# APPENDIX A: Mechanical Drawings



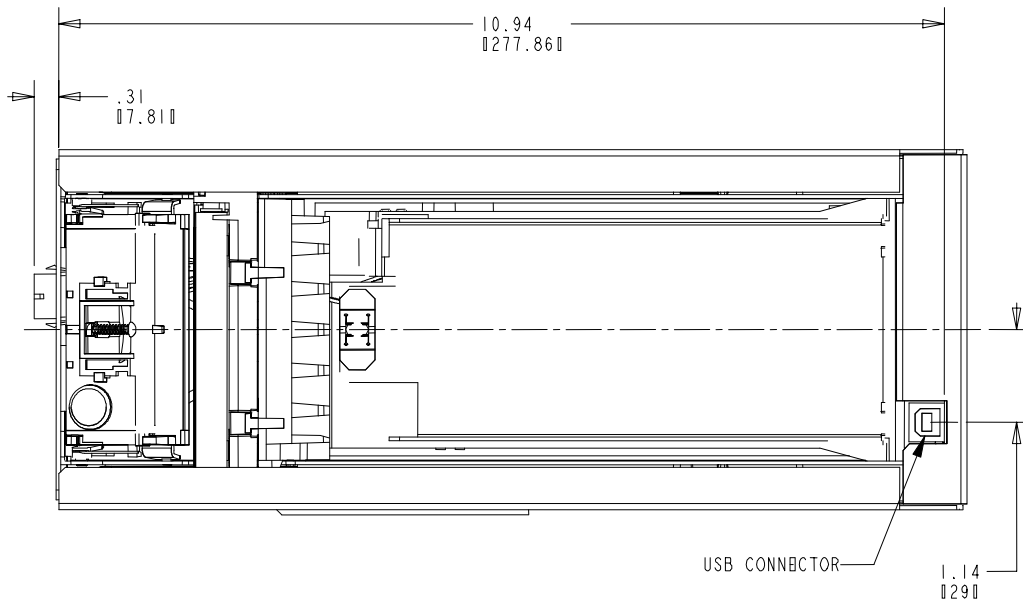
**Side View**



**Bottom View**



**Front View**



**Top View**

**Figure 7: Mechanical Dimensions**