Nanoptix
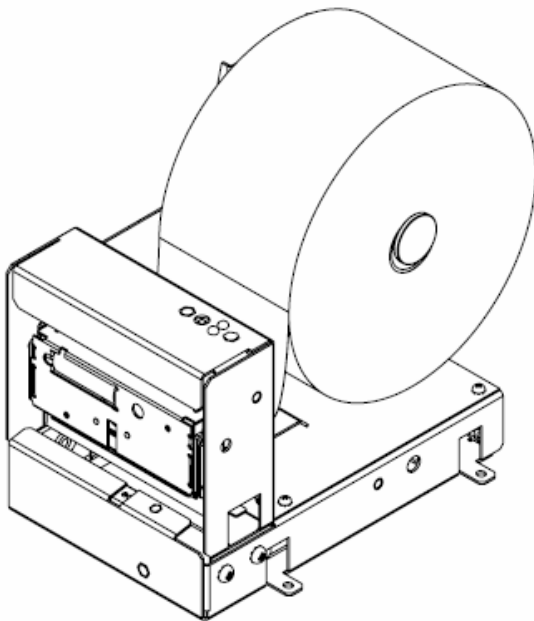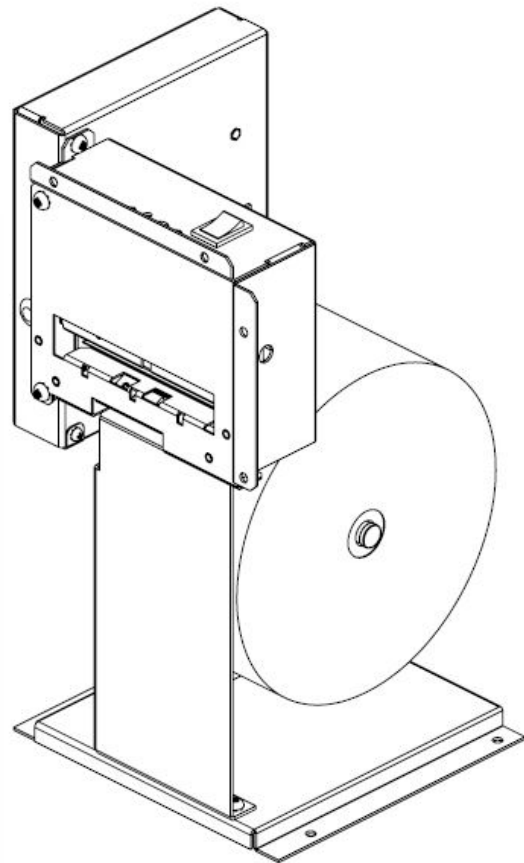
High Speed Kiosk Thermal Printer

Owner's Manual

**High Speed Kiosk
Compact**

**High Speed Kiosk
Vertical**

Legal Notices

Disclaimer
Information in this document is subject to change without notice. Consult your Nanoptix Inc. sales representative for information that is applicable and current. Nanoptix Inc. reserves the right to improve products as new technology, components, software, and firmware become available.

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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, ICES, 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. Using 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.

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1. About the Printer

1.1 Description of Printer

The Nanoptix High Speed Kiosk thermal 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 may be configured with a left hand or right hand paper loading option. There are two High Speed Kiosk models to choose from: The High Speed Kiosk Compact for restricted areas and the High Speed Kiosk Vertical for very narrow cabinets.
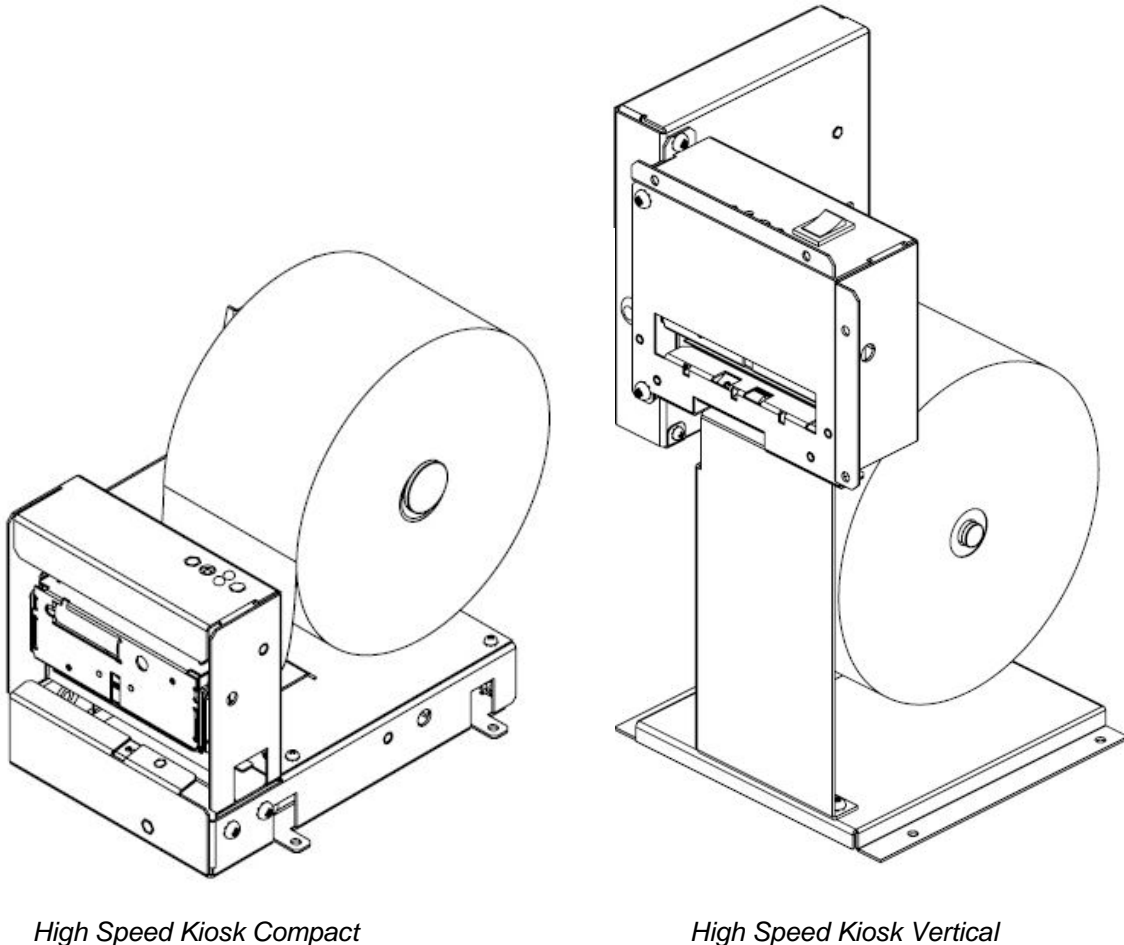
High Speed Kiosk Compact   High Speed Kiosk Vertical

Figure 1: High Speed Kiosk Printer

1.2 Options Available

There are several options available for the Nanoptix High Speed Kiosk thermal printer. Please call your representative for the most recent information at 1-888-983-3030 (Toll-free North America) or 1-506-384-3388 or by e-mail at info@nanoptix.com.

1.3 General specifications

Print Method	Direct Thermal
Resolution	8 dot/mm (203 dpi)
Paper Width	65 mm or 80 mm
Max Roll Diameter	150 mm
Operating Temperature	0° to 50° C
Storage Temperature	-40° C to +65° C
Operating Relative Humidity	5% to 90% RH at 50C (non-condensing)
Communication Interface Options	Serial & USB
Optional Interface	Cash Drawer Kick Out
Memory/Firmware	64MBits SDRAM, 16MBits Flash
Resident Character Sets	Arial Bold (6 sizes) Note: Other Character sets can be programmed quickly
Integrated Bar Codes	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
Speed	Up to 200 mm/second
Sensors	Paper low, Paper in chute
Human Interface	Auto-feed paper loading, status LED, paper feed button
Dimensions High Speed Kiosk Compact High Speed Kiosk Vertical	147 mm (W) x 186 mm (H) x 225 mm (L) 166 mm (W) x 300 mm (H) x 170 mm (L)
Weight High Speed Kiosk Compact High Speed Kiosk Vertical	1.65 Kg 2.16 Kg

Table 1: Specification

1.3 Printer Controls

To reset Printer

For the *High Speed Kiosk Compact* thermal printer simply plug and unplug the printer's power connector to reset the printer in case of a fault condition. Once the printer is re-plugged, the printer goes through a startup routine and resets itself.

For the *High Speed Kiosk Vertical* thermal printer simply flick the Power Switch ON and OFF to reset the printer. Once the printer is on again, the printer goes through a startup routine and resets itself.
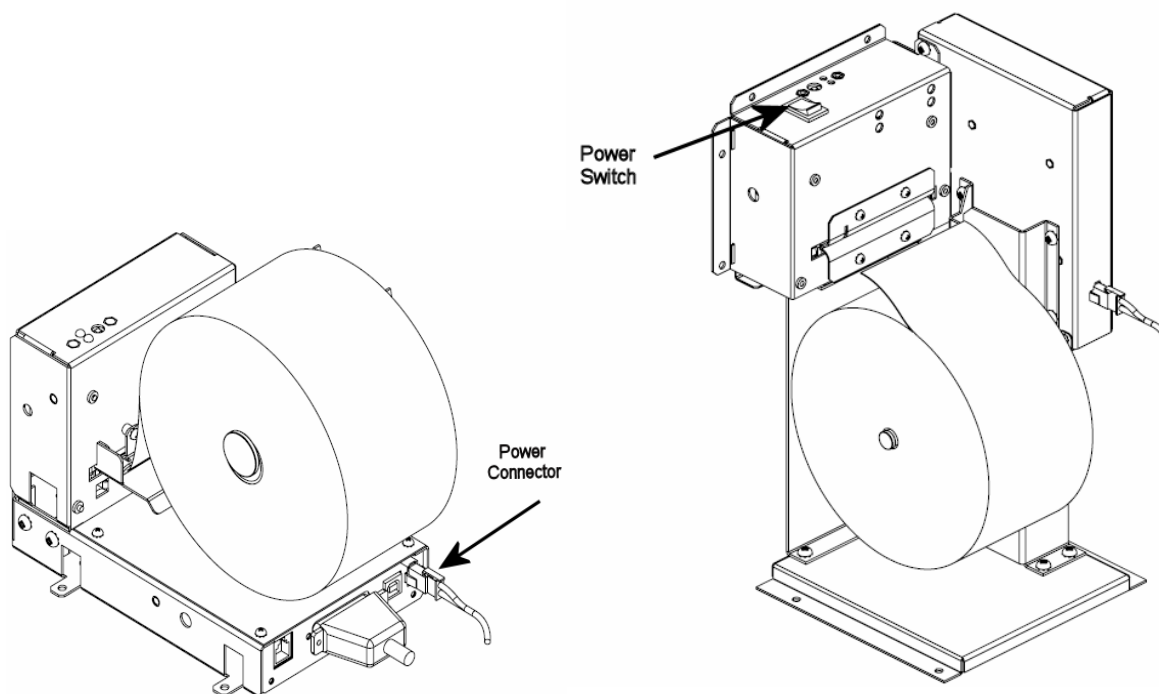
Figure 2: Resetting Printer

Paper Feed Button

Use the Paper Feed Button to advance the paper.
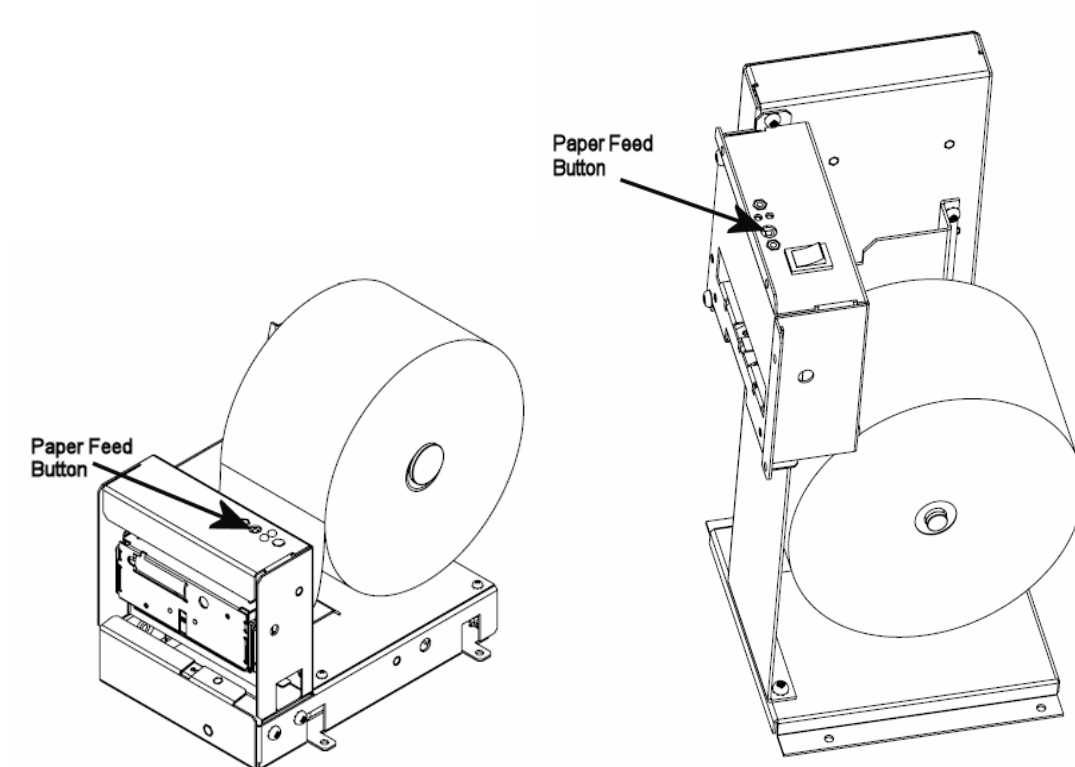
Figure 3: Paper Feed Button

LED

The LED on the main controller board shows the printer status.
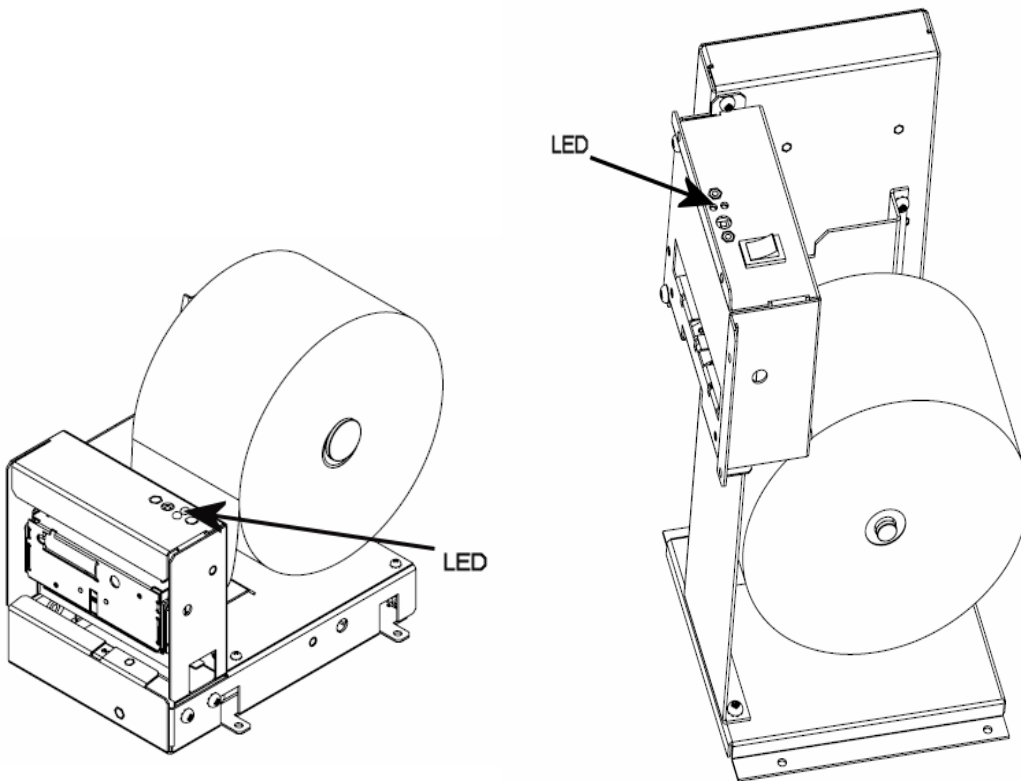
Figure 4: LED Positions

1.4 Changing Paper

Caution: Do not operate the printer if it 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.

1. Remove the used roll.

2. Tear off the end of the new roll so that the edge is loose and place the new roll onto the spindle at the back of the printer.
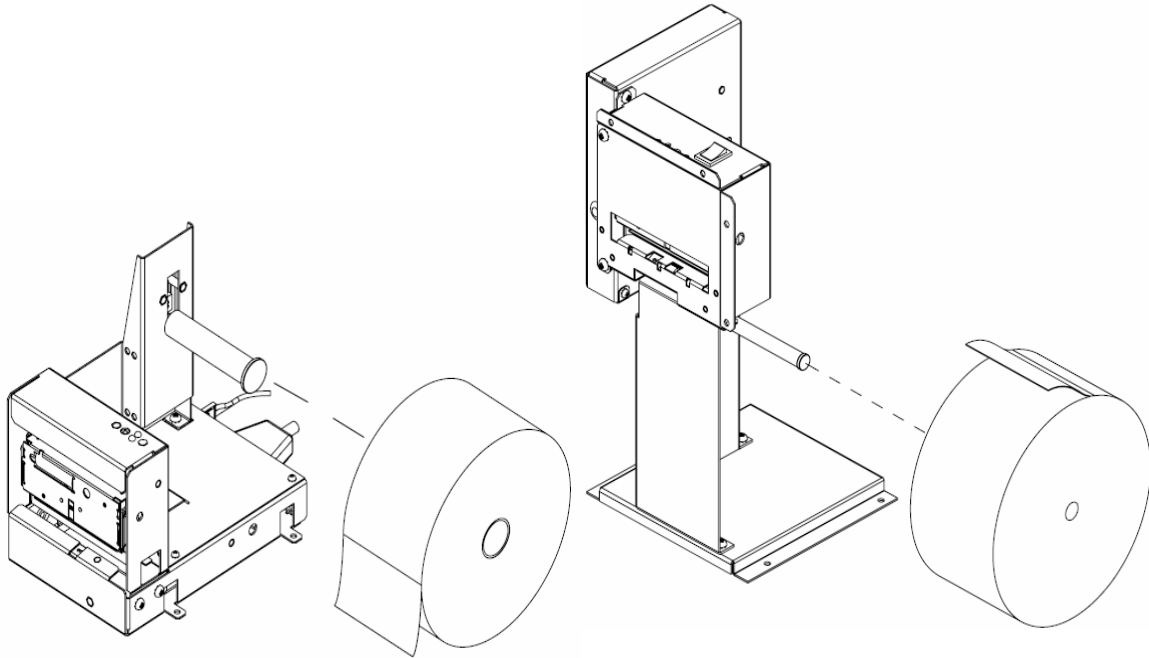
Figure 5: Loading Paper

Caution: Be sure the paper unrolls from the top of the roll. Otherwise, the printer will not print or the paper will jam.

3. Feed paper in between metal plates.
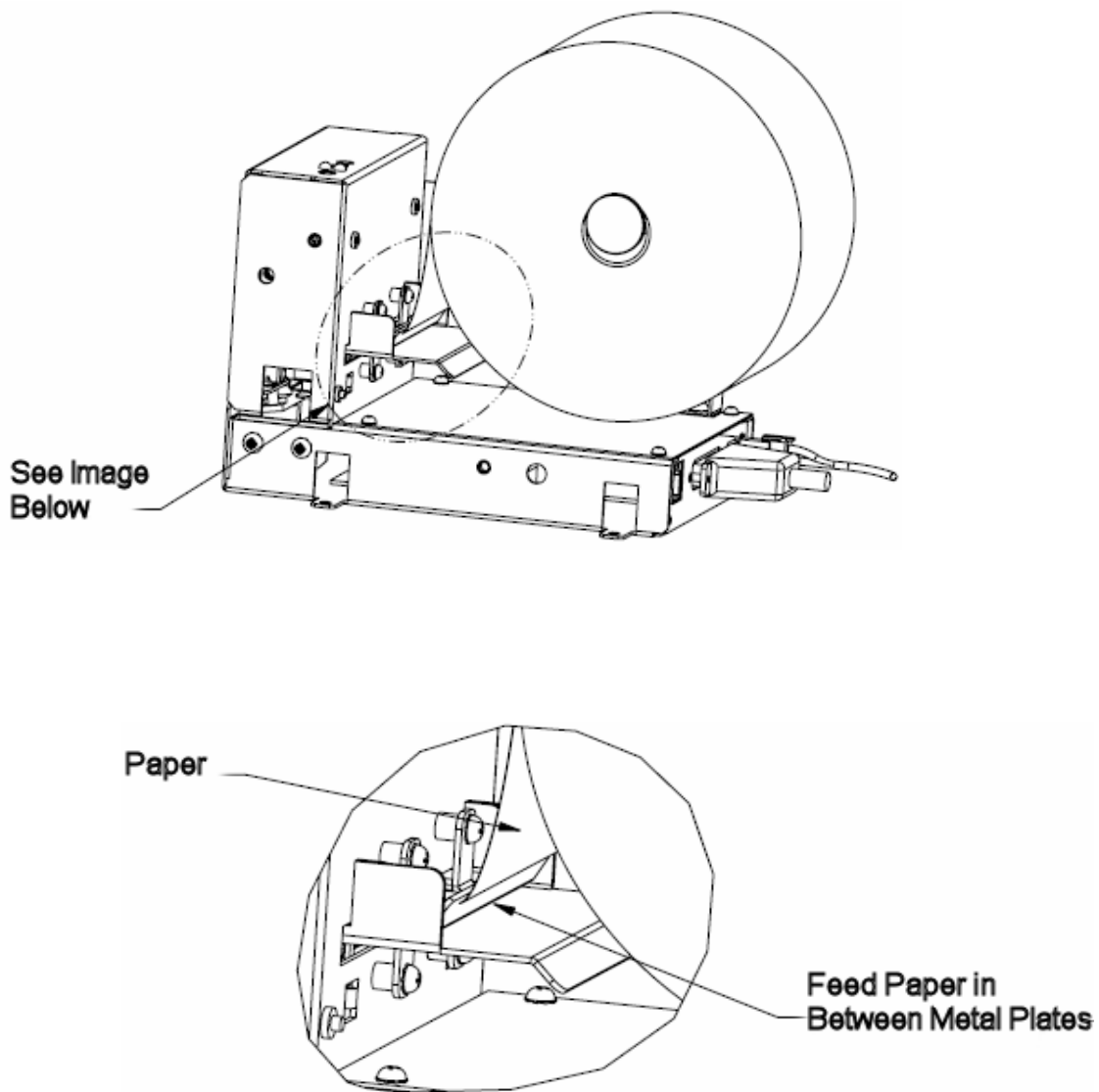
Figure 6: Inserting Paper (High Speed Kiosk Compact)

![Figure 7: Inserting Paper (High Speed Kiosk Vertical) - illustration showing paper roll installation with "See Image Below" callout and a detail view showing "Feed Paper in Between Metal Plates" and "Paper" labels]
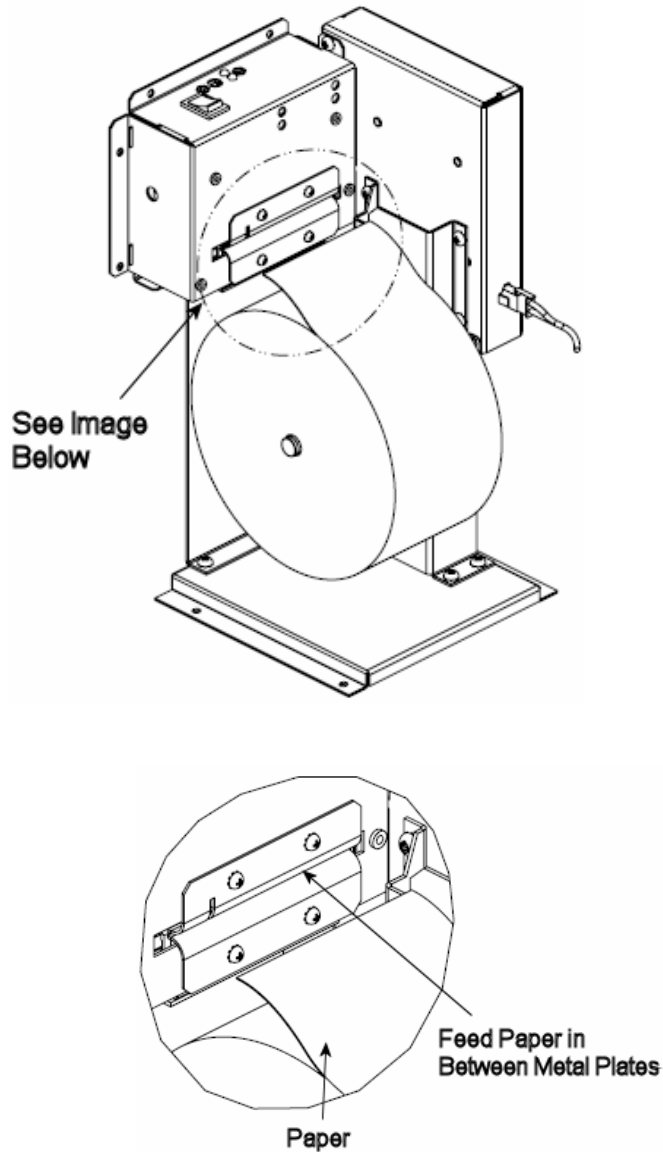
Figure 7: Inserting Paper (High Speed Kiosk Vertical)

4. Press the paper feed button (Figure 3). The paper will advance and the paper will be cut, leaving a clean edge for the next printed ticket.

Note: In the event of a paper jam follow the steps below:
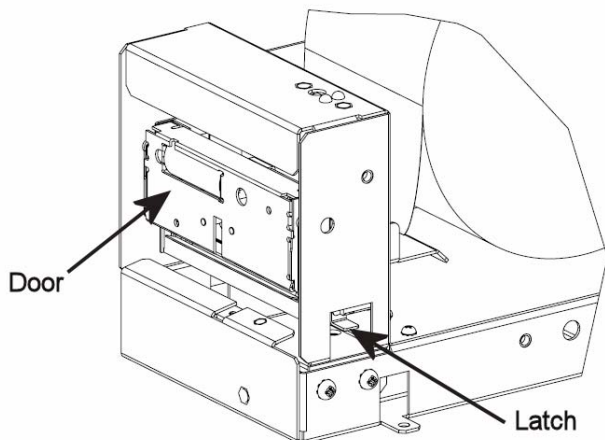
High Speed Kiosk Compact

- Push down on the latch to open the door and remove obstruction.
- Follow instructions on inserting the paper (Figure 6).
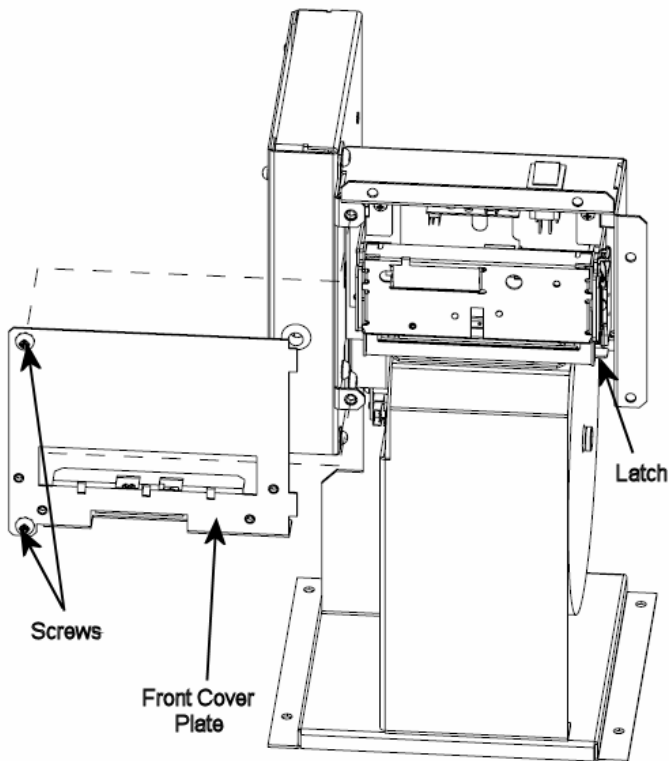
High Speed Kiosk Vertical

- Remove 2 screws.
- Remove front cover plate.
- Push down on latch to open the door and remove obstruction.
- Follow instructions on inserting paper (Figure 6).

Figure 8: Clearing Paper Jam

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 ensure unit is printing and operating correctly.

To print the test ticket, power-on the printer while pressing and holding the Paper Feed Button (Figure 3) for approximately 3 seconds. A test ticket will be printed approximately 5 seconds later. Press the paper feed button once more and the ticket will feed. Pressing the button again will result in blank tickets.

```
Model:                      DSP-HPQ
Firmware:                   HSK - 1. 38U
Protocol:                   EPSON TM88
COMMUNICATION
 Interface:                 Serial
 Baud Rate:                 9600
 Data Bits:                 8
 Parity:                    NONE
 Handshaking:               PRT+RTS
 Print Mode:                Line
 Aux Port:                  Disabled
PRINT CONTROL
 Print Method:              No HPQ
 Final Speed:               200 mm/sec
 Black Bar Index:           Disabled
 No HPQ Burn Time:          400 us
 Cutter PWM:                80 %
 Motor Current:             3
PRINTER ENVIRONMENT CONDICTIONS
 Voltage:                   24.4 Volts
 Temperature:               20 Celsius
SYSTEM RESOURCES
 FLASH:   -Used: 0
          -Free: 24576
MANUFACTURING INFORMATION
 Printer ID:
 Date Code:                 ffffffff

A to D:   03ca, 01e4, 01e6, 03d0
STATUS:
 *S| 0 50H|HSK-1.38U|@|@|@|H|@|P | *
```

Figure 9: Testing Printer

1.7 Troubleshooting the Printer

The printer is simple and generally trouble-free, but from time to time minor 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.

Printer LED

Condition	LED Status (Green)	LED Status (Red)
Unit ready	ON	OFF
Unit is in Reset or Booting	ON	OFF
Unit in standby (powered off)	OFF	OFF
Paper Out	ON	Fast Blink
Door Open	ON	Fast Blink
Paper Jam	ON	Fast Blink
Missing Black Index Mark	ON	Fast Blink
Temperature Error	ON	Fast Blink
Voltage Error	ON	Slow Blink
Print Head Error	ON	Fast Blink

Table 2: Troubleshooting With Status LED

Printing Problems

Problem	Possible Causes	What to Do
Receipt does not come out all the way.	Paper is jammed.	Press latch to open door, inspect the cutter, and clear any jammed paper.
Printer starts to print, but stops while the receipt is being printed.	Paper is jammed.	Press latch to open door, inspect the cutter, and clear any jammed paper.
Receipt is not cut.	Paper is jammed.	Press latch to open door, inspect the cutter, and clear any jammed paper.
	The printer is not configured for a cutter.	Contact your authorized service representative.
Print is light or spotty.	Paper roll loaded incorrectly.	Check that the paper is loaded properly.
	Thermal printhead is dirty.	Use recommended thermal receipt paper.
Vertical column of print is missing.	This indicates a serious problem with the printer electronics.	Contact your authorized service representative.
One side of receipt is missing.	This indicates a serious problem with the printer electronics.	Contact your authorized service representative.

Table 3: Troubleshooting Printing Problems

Printer Does Not Work

Problem	Possible Causes	What to Do
Printer Does Not Function When Turned On.	Printer not plugged in.	Check that printer cables are properly connected on both ends.
		Check that the host or power supply is switched on. Check Printer LED.
	Door not fully closed.	Close the door.

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	Diameter
80 mm ± .2 mm (3.15 in. ± .008 in.)	82.5 mm max. (3.25 in.)
65 mm ± .2 mm (2.56 in. ± .008 in.)	82.5 mm max. (3.25 in.)

Table 5: Thermal Paper Dimensions

The paper must not be attached to the core. If Top of Form Option is installed, paper with a colored stripe at the end can be used to indicate that the paper is running low.

2.2 Ordering Thermal Paper

Recommended thermal paper can be ordered directly from Nanoptix. Please specify the *Nanoptix part number (p/n)* when ordering paper.

Nanoptix p/n	Paper Grade	Manufacturer	Paper Width	Thickness
100505-2010	P350	Kanzaki	80mm	61um (2.4mil)
100505-2011	Alpha 800-3.4	Appleton	80mm	86um (3.4mil)
100505-2008	P350	Kanzaki	65mm	61um (2.4mil)
100505-2009	Alpha 800-3.4	Appleton	65mm	86um (3.4mil)

Table 6: Thermal Paper Part Numbers

Manufacturer	Numbers
Appleton Specialty Papers 825 E Wisconsin Avenue P.O. Box 359 Appleton, WI 54912-0359	Tel: 920-734-9841 Toll-free: 800-922-1729
Kanzaki Specialty Papers (USA) 1350 Main Street Springfield, MA 01103	1.888.KANZAKI Tel: 888-526-9254 Fax: 413-731-8864

Table 7: Ordering Thermal Paper

Additional grades can be qualified and made available. Contact your Nanoptix sales representative for more information from our toll free line at 1-888-983-3030.

2.3 Ordering Miscellaneous Supplies

Ordering Power Supply and Power Cords

Please specify the *Nanoptix part number* when ordering power cords.

Part Number	Part Description
102080	Power Cord -North America (standard C13 "square" inlet connector)
102086	Power Cord -Continental Europe (standard C13 "square" inlet connector)
210007-0102R-00	24V, 60W Power Supply

Table 8: Power Cord Part Number

Contact your Nanoptix sales representative for more information from our toll free line at 1-888-983-3030.

Ordering Communication Cables

Please specify the *Nanoptix part number* when ordering communication cables.

Part Number	Part Description
100390-0000R-00	USB communication Cable Standard 6ft.
102864-0000R-00	RS232 cable (DB-25 male to DB-9 female) - SCNM925FM

Table 9: Communication Cables Part Numbers

Contact your Nanoptix sales representative for more information from our toll free line at 1-888-983-3030.

Communication Cables Pin-Out

Your printer uses industry standard connections for Serial, USB and Cash Drawer functions and is therefore compatible with standard printers and hosts on the market.

Please note that due to the power requirements of thermal printers, the unit will not function with the USB cable alone. The power cord must be connected to the printer.

Several connector options are available depending on the interface card installed on the back of the printer. For all cases, the Cash Drawer and USB are installed. The Cash Drawer drivers can supply up to 2 Amp when not printing.

The tables below detail the connection pin-out for the RS-232 interface and cash drawer on the printer side.

Pin	Signal Name	Printer I/O	Host I/O	Printer Function
1	AUX_PWR	5V Output	n/a	Aux Power (100mA)
2	RS232_TXD	Output	Input	Data transmit
3	RS232_RXD	Input	Output	Data receive
4	No connect	n/a	n/a	n/a
5	DGND	Ground	Ground	Signal Ground/Aux Ground
6	No connect	n/a	n/a	n/a
7	RS232_CTS	Input	Output	Handshake
8	RS232_RTS	Output	Input	Handshake
9	nc or PWR	No connect	No connect	reserved

Table 10: RS-232 DB9 Female Interface

Pin	Signal Name	Printer I/O	Host I/O	Printer Function
1	DGND	Ground	Ground	Signal Ground/Aux Ground
2	RS232_TXD	Output	Input	Data transmit
3	RS232_RXD	Input	Output	Data receive
4	RS232_RTS	Output	Input	Handshake
5	RS232_CTS	Input	Output	Handshake
6	nc or RS232_CTS	Input	Output	Handshake
7	DGND	Ground	Ground	Signal Ground/Aux Ground
8	nc or 4K7 pull up	5V Output	n/a	Aux Power (100mA)
9	NC	No connect	No connect	reserved
10	NC	No connect	No connect	reserved
11	NC	No connect	No connect	reserved
12	NC	No connect	No connect	reserved
13	NC	No connect	No connect	reserved
14	NC	No connect	No connect	reserved
15	NC	No connect	No connect	reserved
16	NC	No connect	No connect	reserved
17	NC	No connect	No connect	reserved
18	NC	No connect	No connect	reserved
19	NC	No connect	No connect	reserved
20	RS232_RTS or 4k7pu	Output	Input	Handshake
21	NC	No connect	No connect	reserved
22	NC	No connect	No connect	reserved
23	NC	No connect	No connect	reserved
24	NC	No connect	No connect	reserved
25	INIT	Input	Output	System Reset (active high)

Table 11: RS-232 DB25 Female Interface

Pin	Signal Name	Printer I/O	Device I/O	Printer Function
1	DGND	Ground	Ground	Power Ground
2	Cash 1	Ground pulse	Sol- (A)	Solenoid (A) ground sink
3	V24	Supply	Sw & Sol+(A)	Solenoid/Switch Supply
4	V24	Supply	Sw & Sol+(A)	Solenoid/Switch Supply
5	Cash 2	Ground pulse	Sol- (B)	Solenoid (B) ground sink
6	Stat	Input	Switch	Drawer status

Table 12: Cash Drawer Interface

3. Communicating with the Printer

Over the years, Nanoptix has developed emulations for compatibility with the most popular printers in the market.   At the time of printing this manual, the following emulations are available:

- Epson LQ570+ / Nanoptix Command set (default from factory)
- Epson TM-T88III

Please contact your sales representative if you require other emulations. If we do not have the emulation you need, we can provide most emulations in a short timeframe. If you are not required to emulate other printers, please ask your sales representative for the latest Nanoptix Windows Driver or the "Nanoptix Programming Guide" which will list the Nanoptix ESC/P commands.

APPENDIX A: Mechanical Drawings
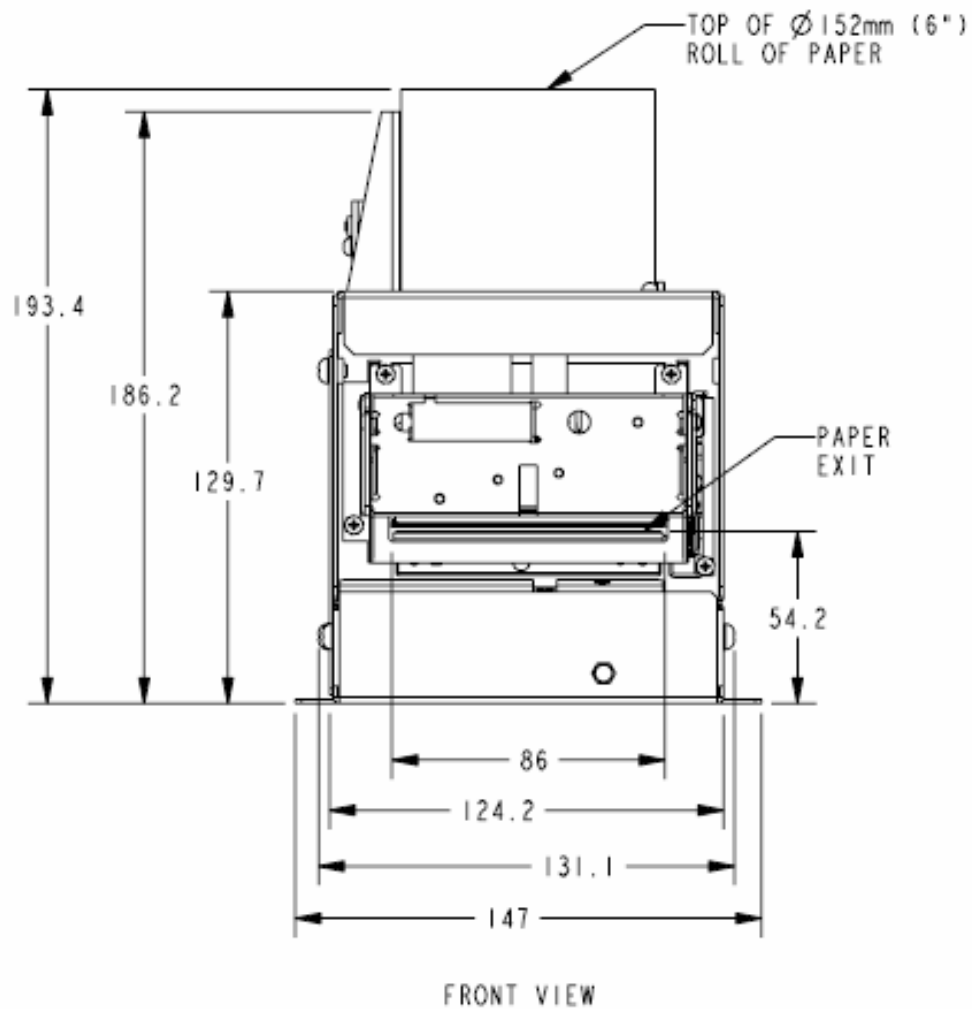
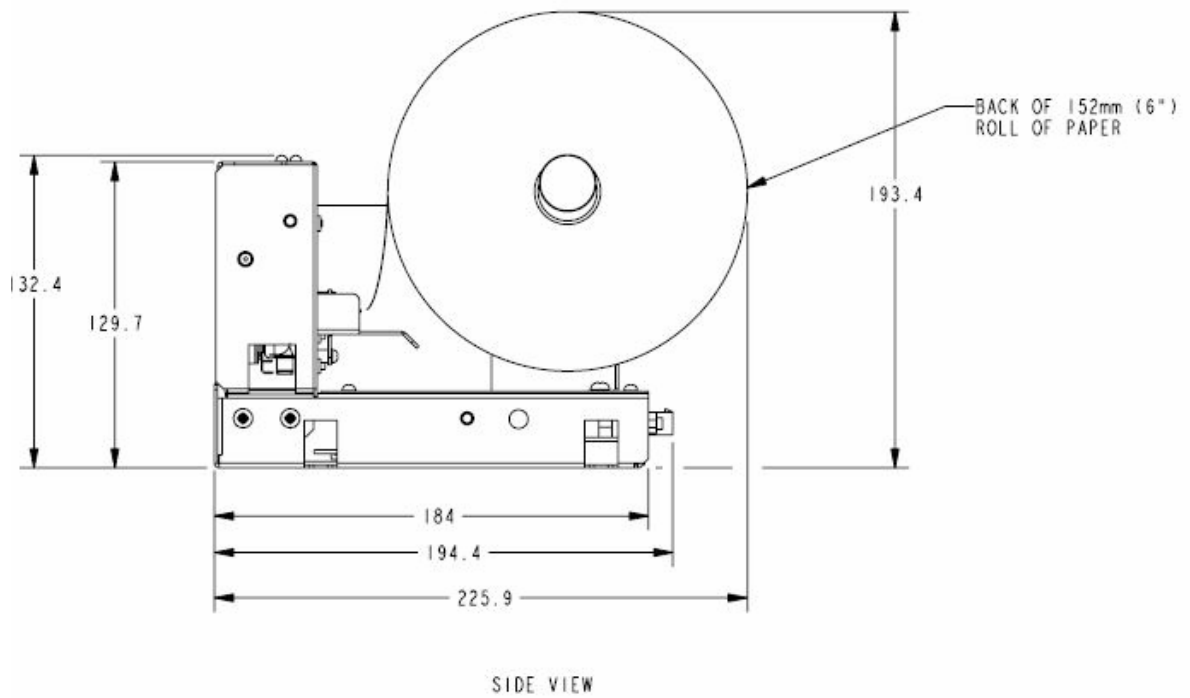**Figure 10: Mechanical Dimensions - High Speed Kiosk Compact Front View**

SIDE VIEW

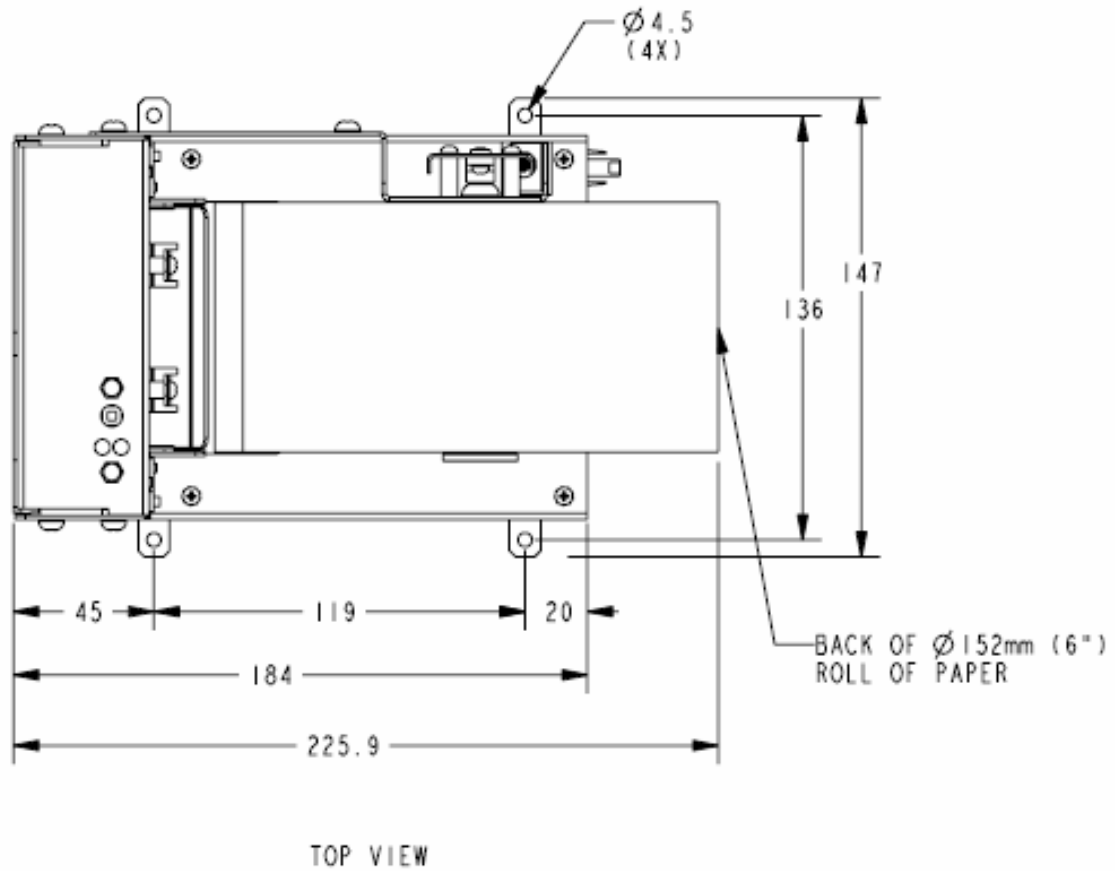**Figure 11: Mechanical Dimensions - High Speed Kiosk Compact Side View**

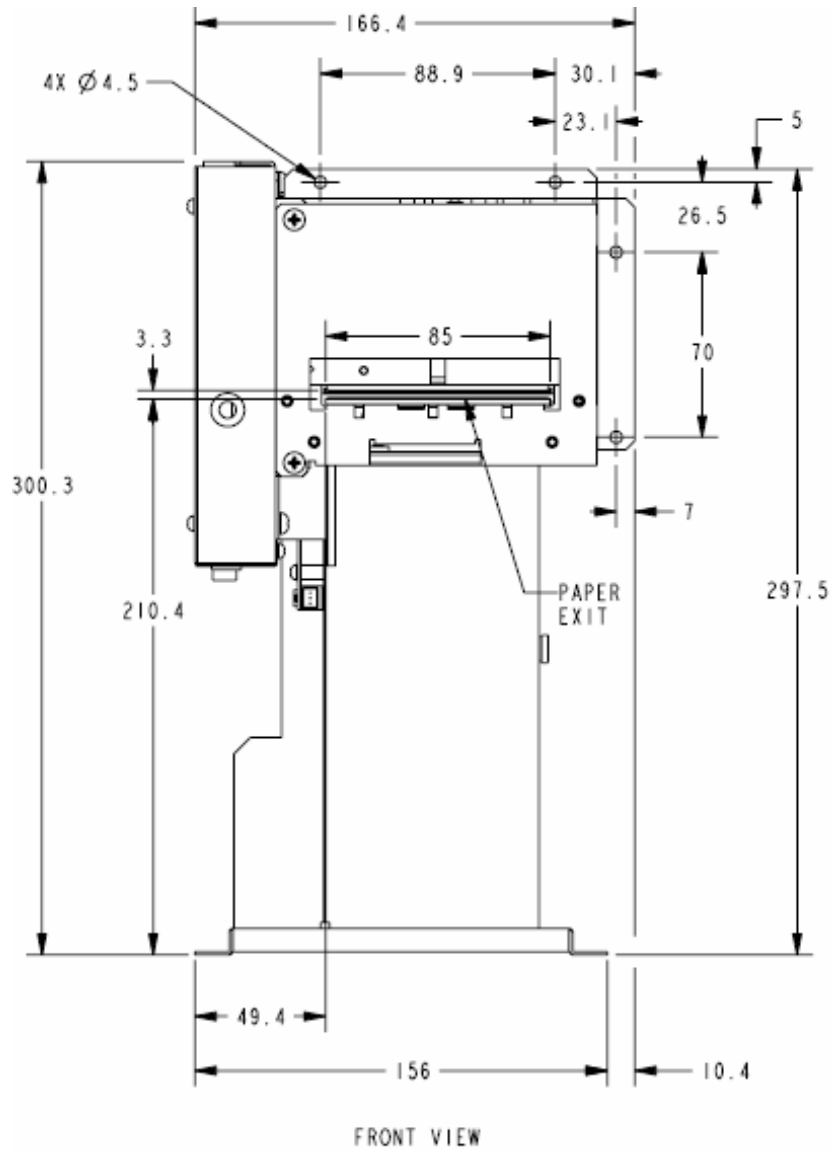**Figure 12: Mechanical Dimensions - High Speed Kiosk Compact Top View**

Figure 13: Mechanical Dimensions - High Speed Kiosk Vertical Front View
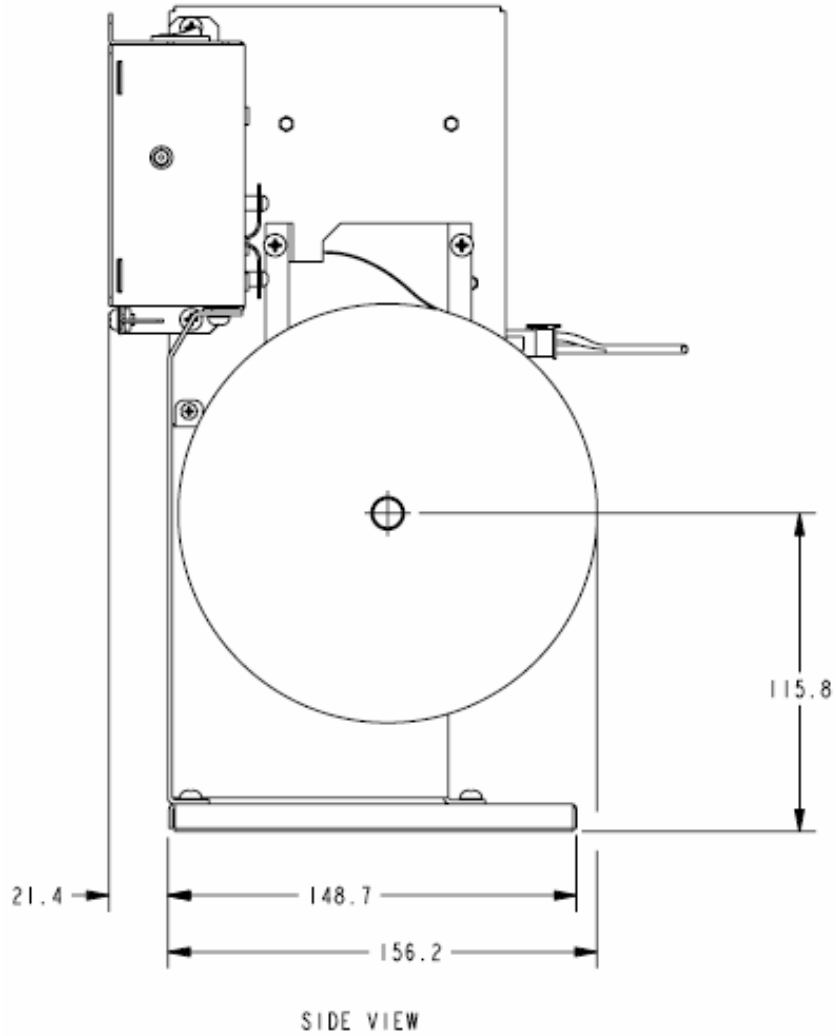
Nanoptix

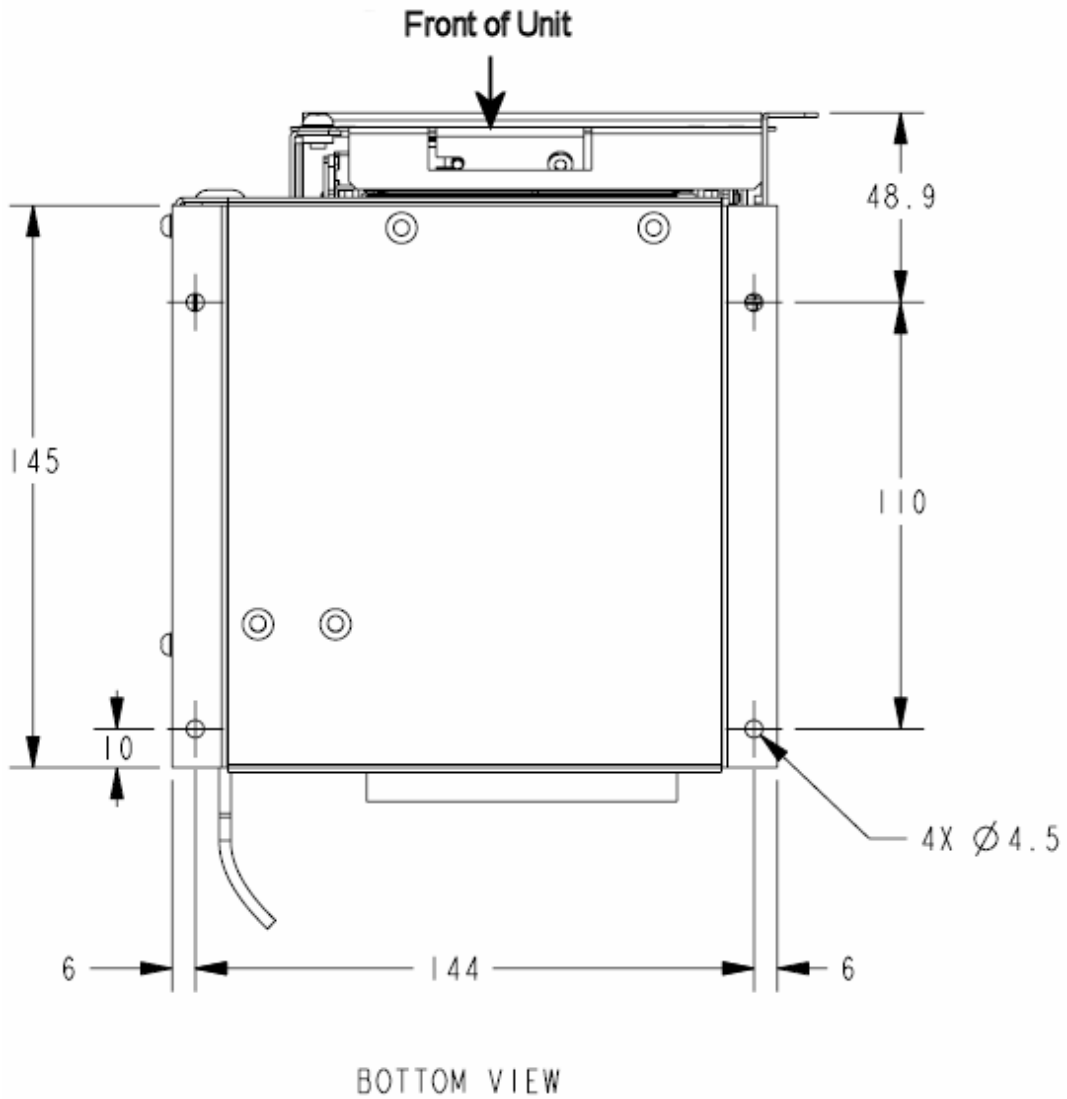**Figure 14: Mechanical Dimensions - High Speed Kiosk Vertical Side View**

Figure 15: Mechanical Dimensions - High Speed Kiosk Vertical Bottom View