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Report No: LR1123-4R2	**Issue Date**: January 28, 2022
Issued By: S. Das	**Reviewed By:** Paul Morton Paul Morton
Customer Name: Nanoptix Inc.	**Address**: 699 Champlain Street, Dieppe, New Brunswick, Canada E1A 1P6
Contents: Certificate of Conformity	Report: Pages 1 to 32 Photos: Pages 11-30

NOTE: Revise/reissue LR1123-4R1 (July 19, 2021) to add a new model (P/N 950055) based on similarity with the currently certified P/N 950050; also reinstated P/N 950021 (similar to P/N 950051).

SUBJECT

Component type thermal printer, P/N 950011, 950020, 950021, 103665, 950005, 950050, 950100, 950024, 950026, 950028, 950029, 950054 and 950055; rated 24VDC, 2.4A.
Desktop thermal printer, P/N 100769, 950023; rated 24VDC, 2.4A, IPX3.
Desktop thermal printer, P/N 950051; rated 24VDC, 2.4A

STANDARDS

UL 62368-1: Audio/video, information and communication technology equipment-Part 1: Safety requirements, Second Edition dated December 1, 2014.
CAN/CSA-C22.2 No. 62368-1-14: Audio/video, information and communication technology equipment-Part 1: Safety requirements, Second Edition dated December 2014.

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MARKINGS

On the Equipment Exterior:

Equipment is plainly marked in a permanent manner in a place where the details will be readily visible after the installation with the following:

1. Markings – The product is marked using lettering on a pressure-sensitive label as described in this report.

   On the Equipment Exterior:
   Equipment is plainly marked in a permanent manner in a place where the details will be readily visible after installation with the following:

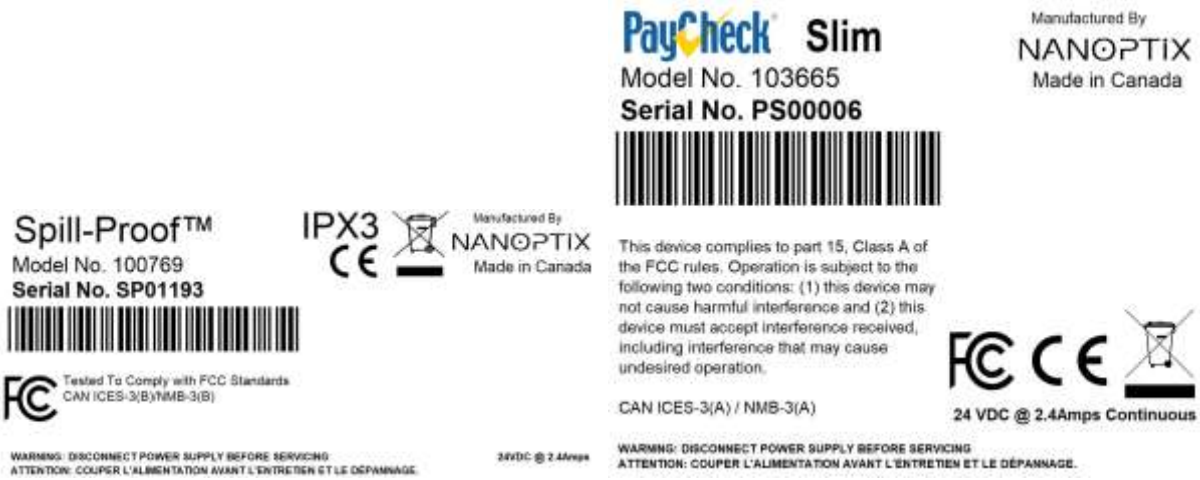
   The following markings are required:

   - The cQPSus Certification Mark; the letter "C" must appear in the 8 O'clock position and the letters "US" must appear in the 4 O'clock position adjacent to the QPS Certification Mark;
   - The qualifying statement "Electrical Safety" or the equipment standard number must appear directly below the Certification Mark;
   - The QPS file reference "LR1123" appear below the Certification Mark.

   - applicant's identification - company name, trademark
   - Model designation;
   - date code/serial number;
   - complete electrical ratings – (V, A)
   - Water ingress protection marking (IPX3) for 100769, 950023;

Installation, Operating and Safety Instructions – Safety instruction of this product is provided by the manufacturer as required by the standard.

SAMPLE NAMEPLATES



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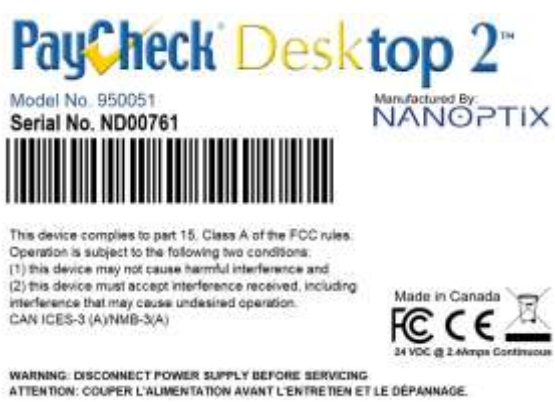

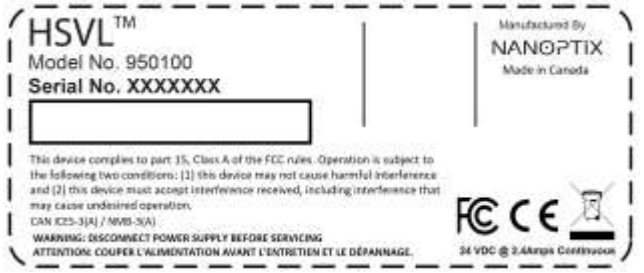

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CONDITIONS OF ACCEPTABILITY

1. The thermal printers have been evaluated to be supplied by a Limited Power Source (LPS) or a Class 2 Power supply. Further investigation may be required if to be supplied by other than LPS.

2. Component type thermal printers shall be installed in a suitable enclosure as determined by the end product standard in the end application.

DESCRIPTION

Thermal printers, powered by an approved external SELV Class 2/LPS Power Supply - (cULus file number E190414) ITE Power Adaptor, Model FSP060-RTAAN2 by FSP Group Inc. or equivalent.

P/N 950011, 950020, 103665, 950005, 950050, 950100, 950024, 950026, 950028, 950029, 950054 are component-type Thermal Printers to be used in an application where end product enclosure is provided

P/N 100769, 950023, 950051, 950021 are provided with an enclosure can be used in the end application with or without an enclosure.

P/N 950055: Derived from P/N 950050, deleting HDMI output, Ethernet interface, 2USB ports and Netplex serial Communication interface features (along with the corresponding parts in the PWB).

Model Differences

All thermal printers have similar electrical design with a printer mechanism and control circuit board; moreover,

P/N 950020, 103665, 950005 has same printer mechanism and control circuit board but with different mechanical arrangement.

P/N 950011 is similar to P/N 103665 except printer mechanism, chassis and additional enclosure.

P/N 950050 is similar to P/N 950020 in mechanical design but with different printer mechanism.

P/N 950051, 9050021 are identical to P/N 950050, except with an enclosure.

P/N 950024, 950026, 950028, 950029, use same printer mechanism and control circuit board but with different mechanical arrangement.

P/N 950054 use same printer mechanism but a different control circuit board as in P/N 950024, 950026, 950028, 950029.

P/N 103665 is identical to P/N 950005; the only difference is the P/N for marketing purpose only.

P/N 100769 is identical to P/N 950023; the only difference is the P/N for marketing purpose only.

P/N 950055 is derived from P/N 950050, deleting HDMI output, Ethernet interface, 2USB ports and Netplex serial Communication interface features (along with the corresponding parts, in the PWB).

Rated Ambient temperature

P/N 950011, 950020, 950021, 103665, 950005, 950051, 950100, 950023, 950024, 950026, 950028, 950029, 950054,100769 are rated 50°C.

P/N 950050 and P/N 950055 are rated 60°C.

POWER CONNECTIONS

All printers supplied by approved external /LPS Power Supply -ITE Power Adaptor, Model FSP060-RTAAN2 by FSP Group Inc. or equivalent power supply marked “LPS” or “Class 2 Power Supply”.

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INTERNAL WIRING

All internal wiring is certified and is reliably routed and secured away from sharp edges having a radius less than 1.5mm.

FACTORY TESTS: N/A

No manufacturing or production line tests are required because the model Spill-Proof is powered through an approved SELV Power Supply.

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Tests

P/N 950011, 950020, 950021, 103665, 950005, 950050,950051, 950100, 100769, 950023 were evaluated in QPS as per file LR1123-1R1, CB1123-1R1, CB1123-1 and LR1123-3 to the requirements of UL/CSA 60950-1, second edition. Upon review, no additional tests were deemed necessary.

P/N 950024, 950026, 950028, 950029, 950054 were evaluated at QPS to the requirements of
UL 62368-1, Standard for Safety for Audio/video, information and communication technology equipment-
Part 1: Safety requirements, Second Edition;
CAN/CSA-C22.2 No. 62368-1-14, Audio/video, information and communication technology equipment-
Part 1: Safety requirements, Second Edition;
Upon review, the following tests were selected and performed with satisfactory results

Test results relate only to the items tested.

STANDARD	INFORMATION
B.2.5	INPUT TEST
6.3, 9.2	HEATING TEST
B.3	SIMULATED ABNORMAL OPERATING CONDITIONS
B.4	SINGLE FAULT CONDITION
6.2.2	PS MEASUREMENT FOR CLASSIFICATION

The test methods and results of the above tests have been reviewed and found to be in compliance with the applicable requirements of the applicable standards/codes indicated above.

LR1123-4R1: July 19, 2021

Update to report LR1123-4 dated November 24, 2020 to include the following.

P/N 950020 were evaluated at QPS to the requirements of UL 62368-1, Standard for Safety for Audio/video, information and communication technology equipment- Part 1: Safety requirements, Second Edition;
CAN/CSA-C22.2 No. 62368-1-14, Audio/video, information and communication technology equipment-
Part 1: Safety requirements, Second Edition with satisfactory results.

The following tests were performed; test results relate only to the items tested.

STANDARD	INFORMATION
B.2.5	INPUT TEST
6.3	HEATING TEST

The test methods and results of the above tests have been reviewed and found to be in compliance with the applicable requirements of the applicable standard indicated above.

NOTE: Acceptance Criteria per simple Acceptance rule: Measurement of Uncertainty is not applied to the measured value when In/Out of tolerance statement is made.

LR1123-4R2 (January 28, 2022)
Revise/reissue LR1123-4R1 (July 19, 2021) to add a new model (P/N 950055) based on similarity with the currently certified P/N 950050; also reinstated P/N 950021 (similar to P/N 950051). No additional testing is deemed necessary to conducted for continued compliance with the standards noted on Page 1.

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Critical Components Table

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1
P/N 950011					
Printer Assembly	Fujitsu	FTP-639MCL354	DC 24 V	--	Tested with the equipment
PCB	Various	Various	V-0, 105°C	UL 796	UR
P/N 950020, 103665, 950005					
Printer Assembly	Axiohm	MHTAGS24/C	DC 24 V	--	Tested with the equipment
Printer Assembly - Alternate component	Axiohm	MHTAS010	DC 24V	--	Tested with the equipment
PCB	Various	Various	V-0, 105°C	UL 796	UR
Polymeric Drawer	Various	Various	V-0	UL 746	cURus
P/N 950050, 950055					
Printer	TXCOM	AXIOHM MHTNGD24	25mm motor, thermal print head Rated Voltage: 24Vdc	UL 60950-1:2007 R12.11 CAN/CSA-C22.2 No.60950-1-07+A1:2011	TUV (CU72141773)
P/N 950051, 950021					
Printer Assembly	TXCOM	AXIOHM MHTNGD24	25mm motor, thermal print head	UL 60950-1:2007 R12.11 CAN/CSA-C22.2 No.60950-1-07+A1:2011	TUV (CU72141773)
*Plastic enclosure for model 950051	Polymer Technology & Services LLC	ABS- FR3800-V	Acrylonitrile Butadiene Styrene (ABS), HB.	CSA-C22.2 No. 0.17 UL 746C	cURus (E155285)
P/N 950100					
Printer Assembly	Seiko	CAP9347E-S640-E	24Vdc, 1.25A	IEC 60950-1	Tested with the equipment
DC Sepper Motor	Seiko	B420A	24Vdc, 0.50A	IE 60950-1	Tested with the equipment
P/N 950023, 100769					

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Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1
*Cover	Covestro Deutschland AG	Makrolon 2405+(z)	V-2	UL 746C	cURus(E41613)
*Shell (top, bottom)	Teijin Limited Resin and Plastic	TN-7500M(#)	V-1 minimum	UL 746C	cURus(E98529)
Printer Assembly	Axiohm	MHTPGS24H	DC 24 V	--	Tested with the equipment
Printer Assembly - Alternate component	Axiohm	MHTAS010	DC 24V	--	Tested with the equipment
DC stepping motor	Minebea Electronic Co Ltd. (NMB)	PM20L-020-AXH2	DC 24V, 100MΩ, 120°C	--	Tested with the equipment
PCB	Various	Various	V-0, 105°C	UL796	UR
PN 950024, 950026, 950028, 950029					
*Enclosure material for P/N 950028	E I DUPONT DE NEMOURS & CO INC	FR50	V-0	UL 746C	UR(E41938)
*Cover, mount material for P/N 950028	TRINSEO (HONG KONG) LTD	Celec 5200HF	V-0	UL 746C	UR(E132010)
Printer Assembly	Seiko	CAPM347	Thermal printer mechanism 24VDC, 4.9A(peak)/144 dots; 9.9A(peak)/288 dots; 21.9A(peak)/640 dots Print speed 300mm/s	--	Tested with the equipment
Thermal Head	--	--	*Heat element matrix consist of 640 dots*	--	*Tested with the equipment*
Paper feed motor	--	*J05F9ZY2BC*	*PM type stepper motor, 3.7Ω/phase, Vp:21.6-26.4V* *600mA/phase*	--	*Tested with the equipment*

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Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1
Paper motor	--	*J09C9ZE2BC*	*PM type stepper motor, 8.5Ω/phase, Vp:21.6-26.4V* *820mA/phase(at 1 phase)*	--	*Tested with the equipment*
PCB (control board 209008)	Various	Various	V-0, 105°C	UL796	UR
Internal Wiring	Interchangeable	Interchangeable	VW-1, 105°C	UL 758	UR
PN 950054					
*Enclosure for presenter	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000	V-0	UL 746C	UR(E41613)
*Enclosure for main frame	CHI MEI CORPORATION	PA-757	HB	UL 746C	UR(E56070)
Printer Assembly	Seiko	CAPM347	Thermal printer mechanism 24VDC, 4.9A(peak)/144 dots; 9.9A(peak)/288 dots; 21.9A(peak)/640 dots Print speed 300mm/s	--	Tested with the equipment
PCB for control board 209014 and presenter	Various	Various	V-0, 105°C	UL796	UR
Internal Wiring	Interchangeable	Interchangeable	VW-1, 105°C	UL 758	UR
Power adaptor	FSP Group	FSP060-RTAAN2	Input 100-240V, 1.5A, 50-60Hz Output 24VDC, 2.5A	UL/CSA 60950-1	cULus (E190414)
* In the component (Manufacturer) column indicates a Safety Agency Approved/Certified component whose manufacturer can be interchanged without consideration of re-testing, all interchangeable components must have equivalent electrical and temperature ratings or better for the intended application.					

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Photo 1 – Front view of thermal printer, P/N 950011

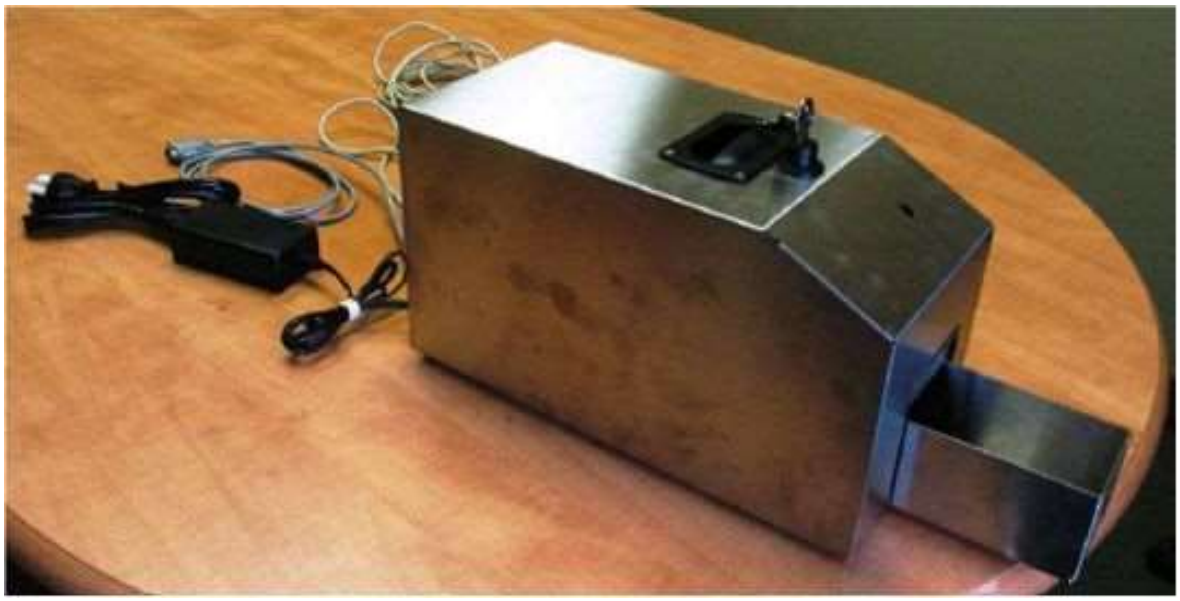

Photo 2 – Back and inside view of thermal printer, P/N 950011

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Photo 3 – Inside view of thermal printer, P/N 950011

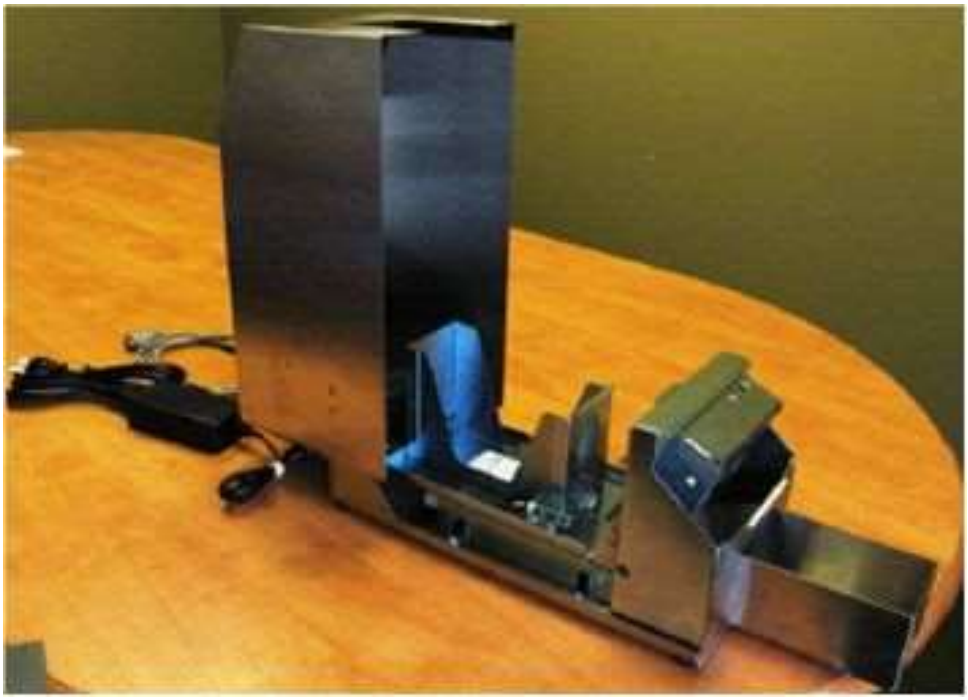

Photo 4 – Overall view of thermal printer, P/N 950020

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Photo 5, 6 – PayCheck DeskTop (P/N 950021)

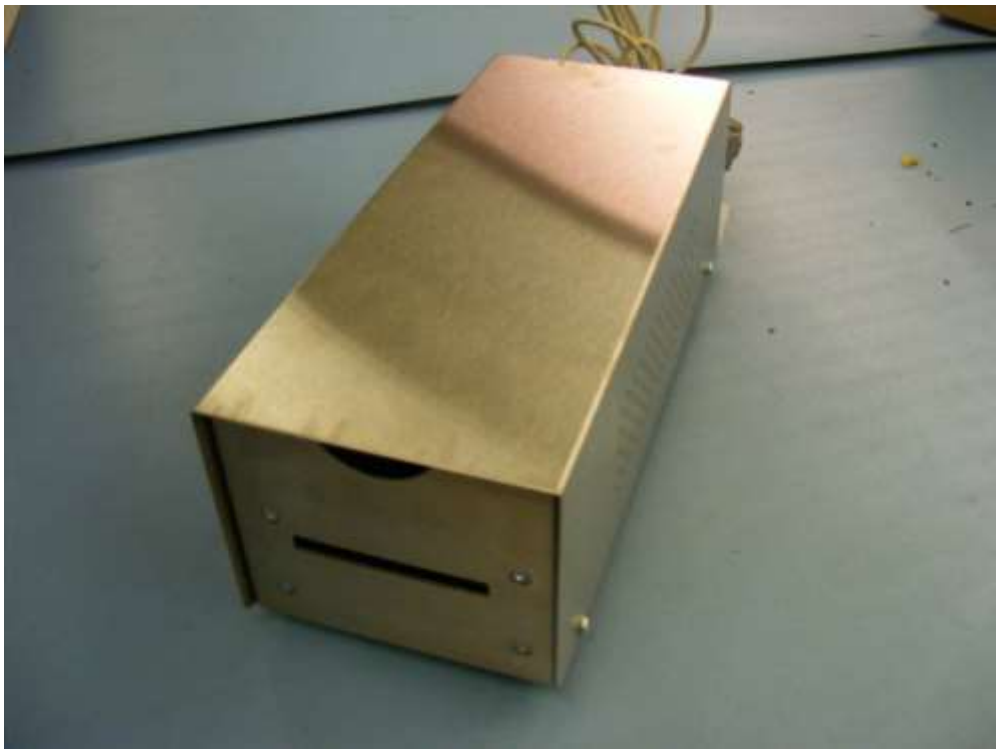

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Photo 7 – Overall view of thermal printer, P/N 103665

Photo 8 – Main board of thermal printer, P/N 103665

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Photo 9 – Top view of thermal printer, P/N 950050

Photo 10 – Bottom view of thermal printer, P/N 950050

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Photo 11 – Overall view of thermal printer, P/N 950051

Photo 12 – Internal view of thermal printer, P/N 950051

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Photo 13 – Top view of thermal printer, P/N 950100

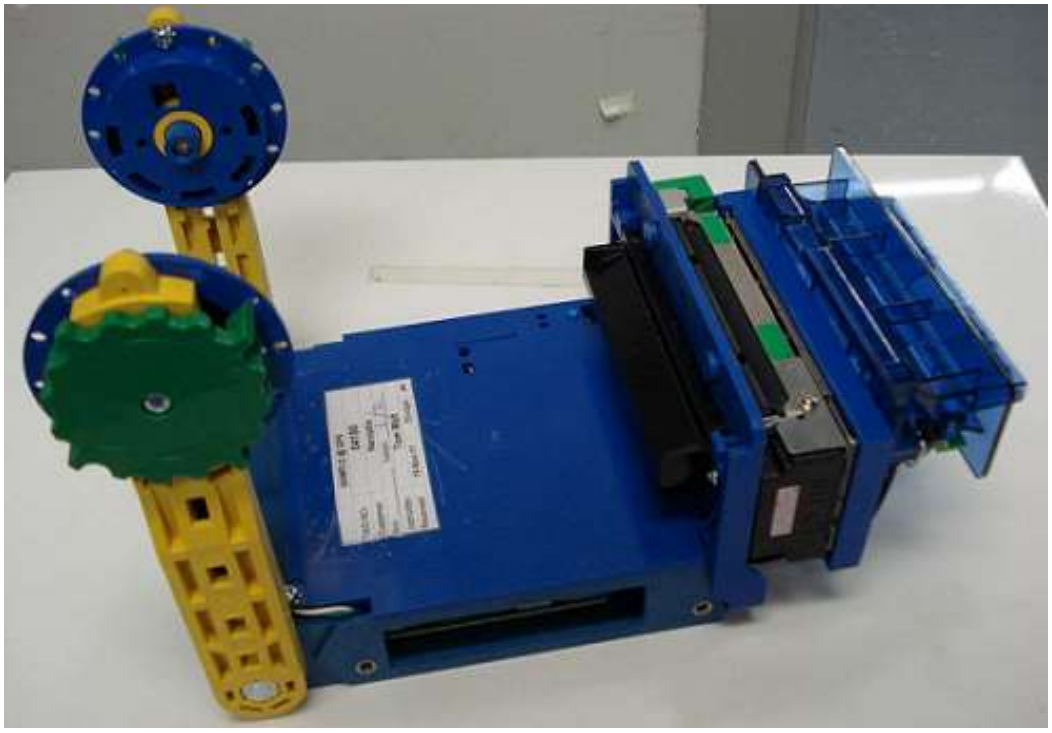

Photo 14 – Bottom view of thermal printer, P/N 950100

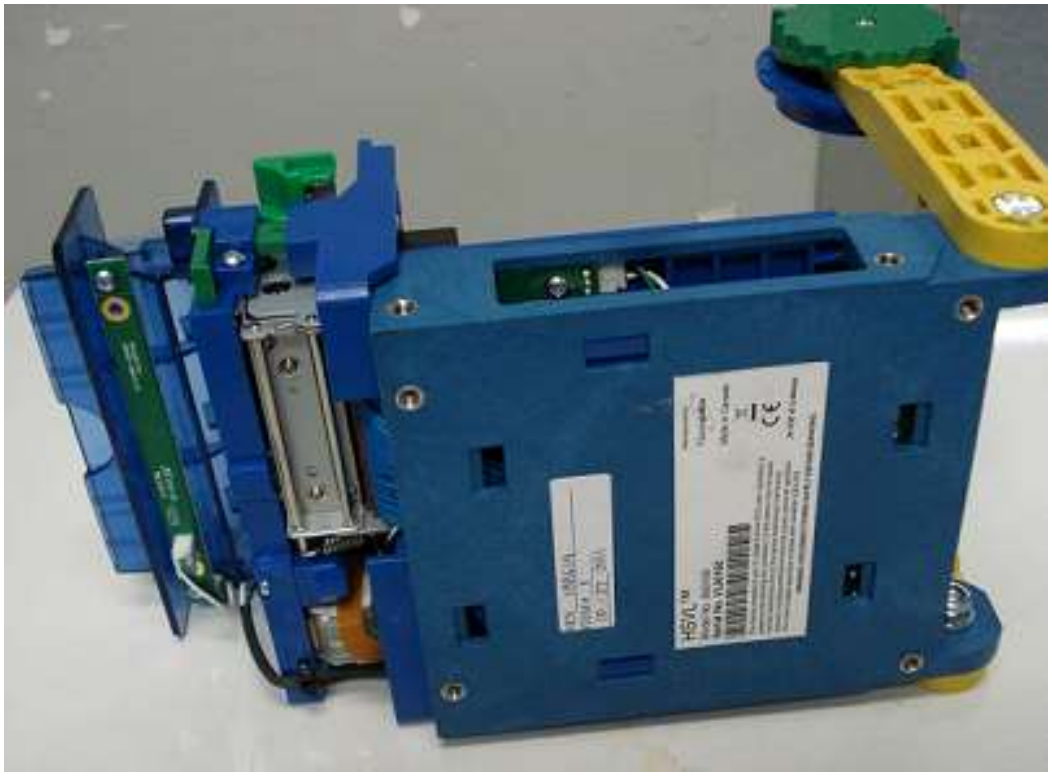

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Photo 15 – Overall view of thermal printer, P/N 100769

Photo 16 – Internal view of thermal printer, P/N 100769

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Photo 17 – Overall view of thermal printer, P/N 950024

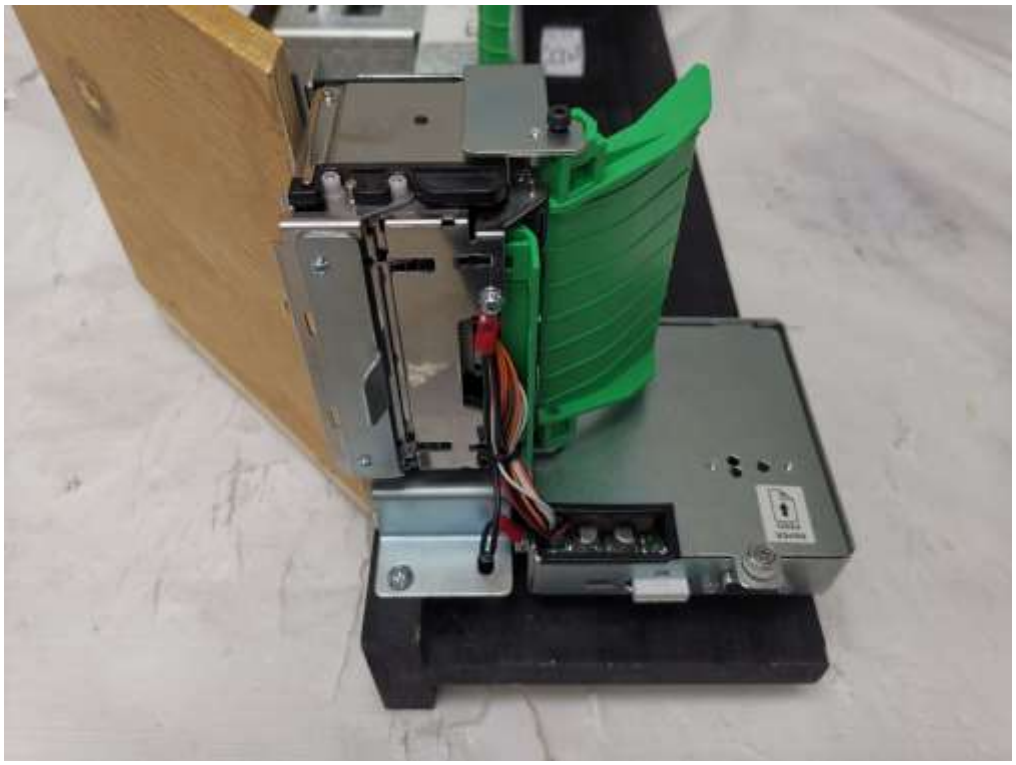

Photo 18 – Internal view of thermal printer, P/N 950024

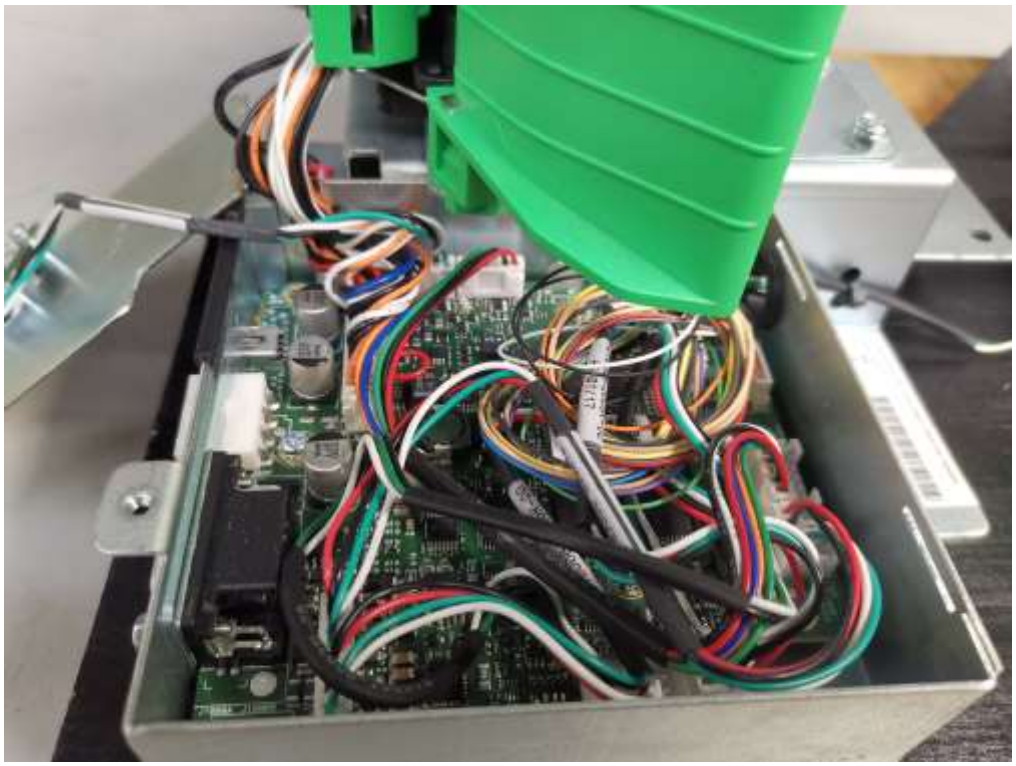

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Photo 19 – Top view of the main circuit board of thermal printer, P/N 950024

Photo 20 – Bottom view of the main circuit board of thermal printer, P/N 950024

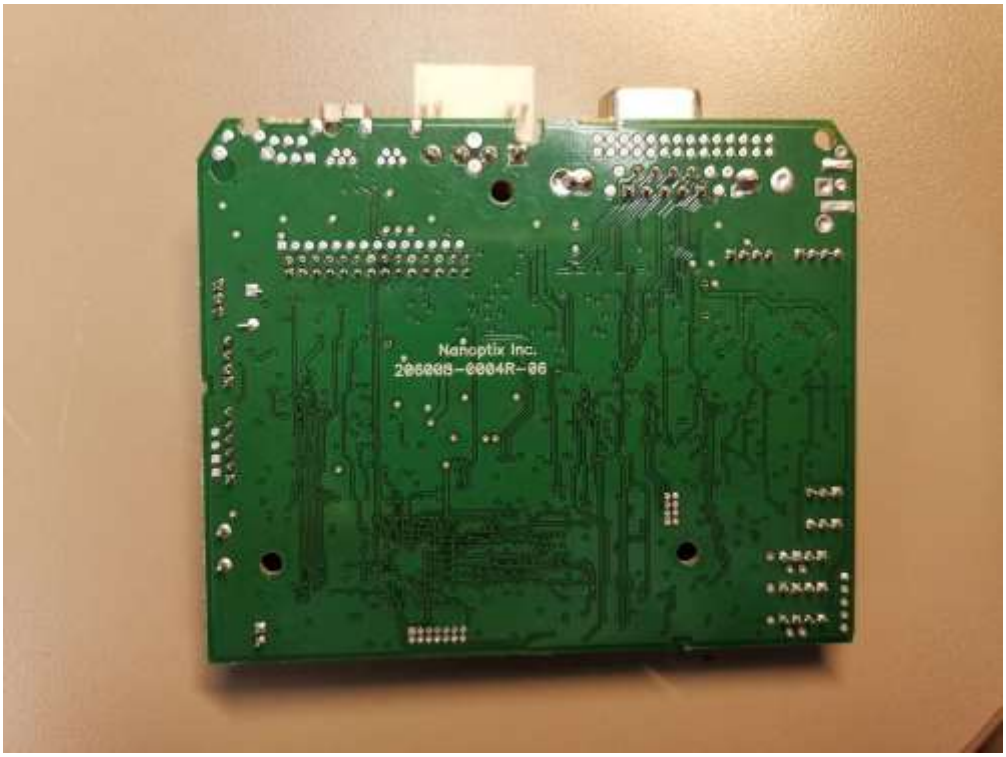

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Photo 21 – Overall view of thermal printer, P/N 950026

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Photo 22 – Overall view of thermal printer, P/N 950028

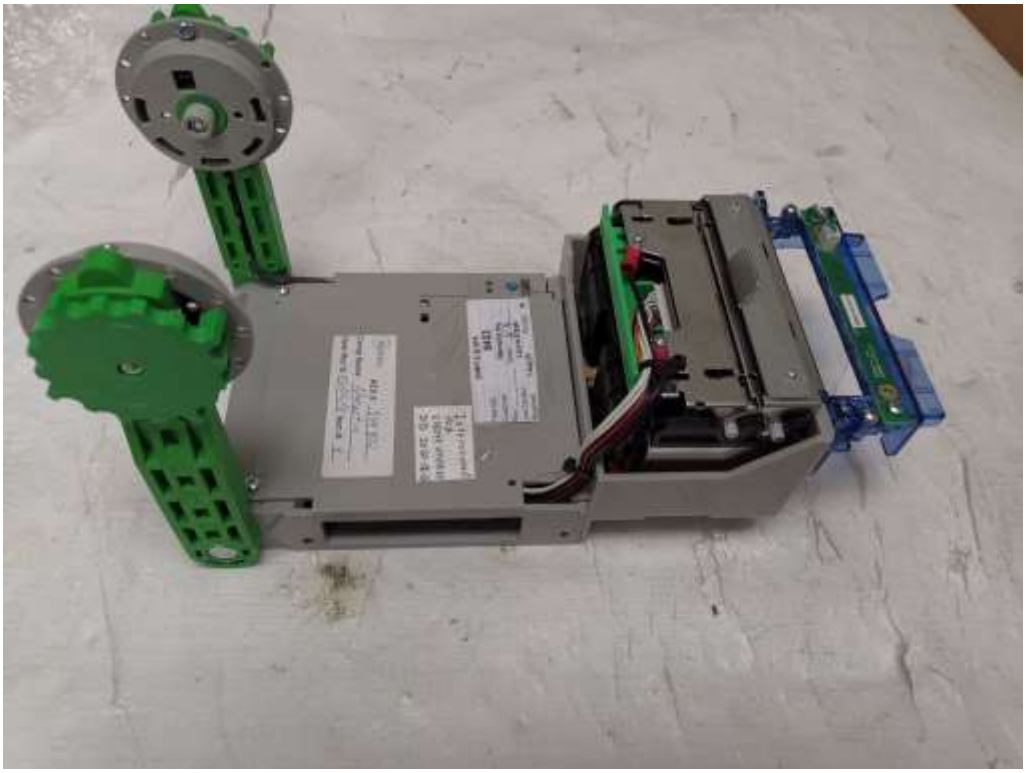

Photo 23 – Bottom view of thermal printer, P/N 950028

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Photo 24 – Overall view of thermal printer, P/N 950028

Photo 25 – Overall view of thermal printer, P/N 950054

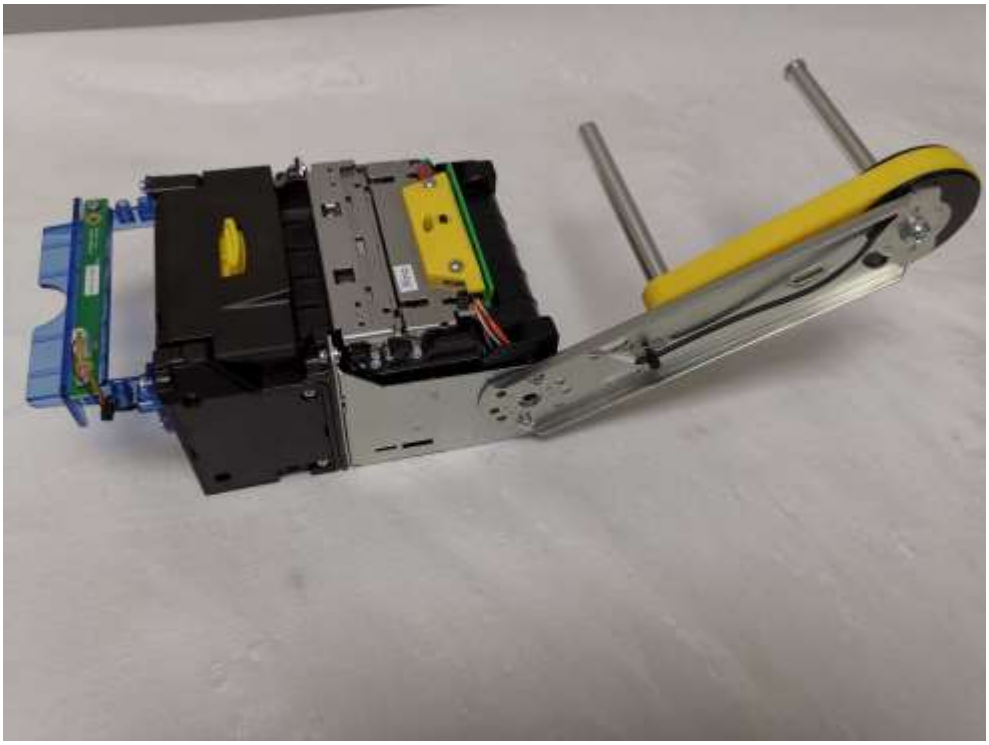

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Photo 26 – Bottom view of thermal printer, P/N 950054

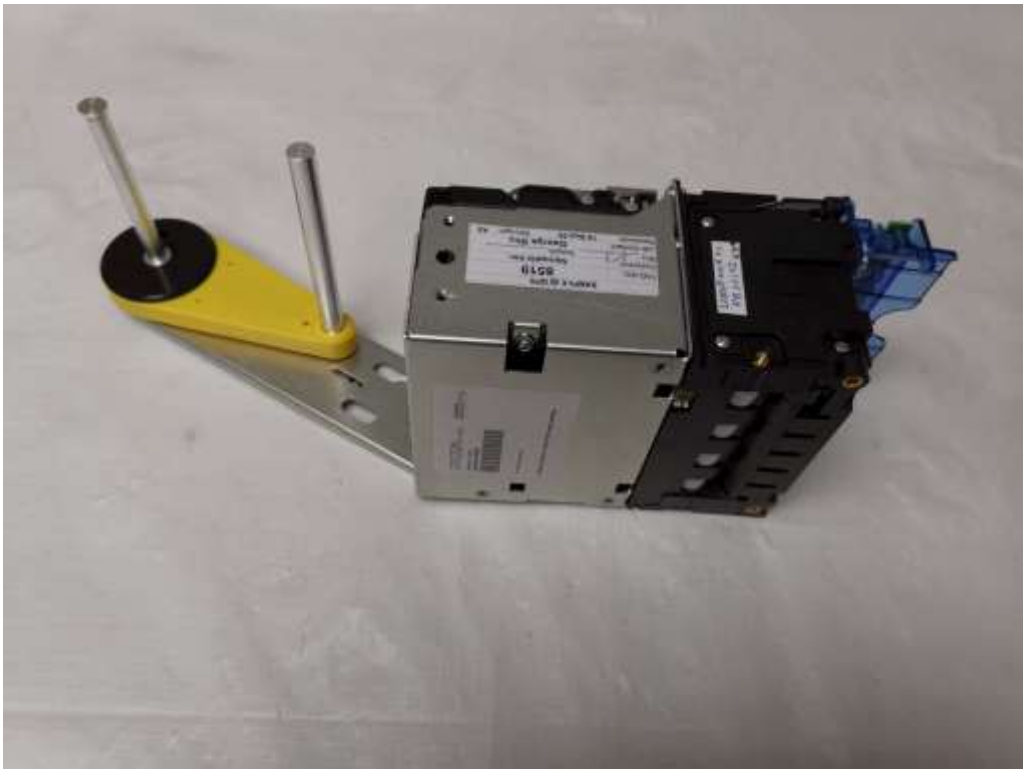

Photo 27 – Top view of the main circuit board of thermal printer, P/N 950054

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Photo 28 – Bottom view of the main circuit board of thermal printer, P/N 950054

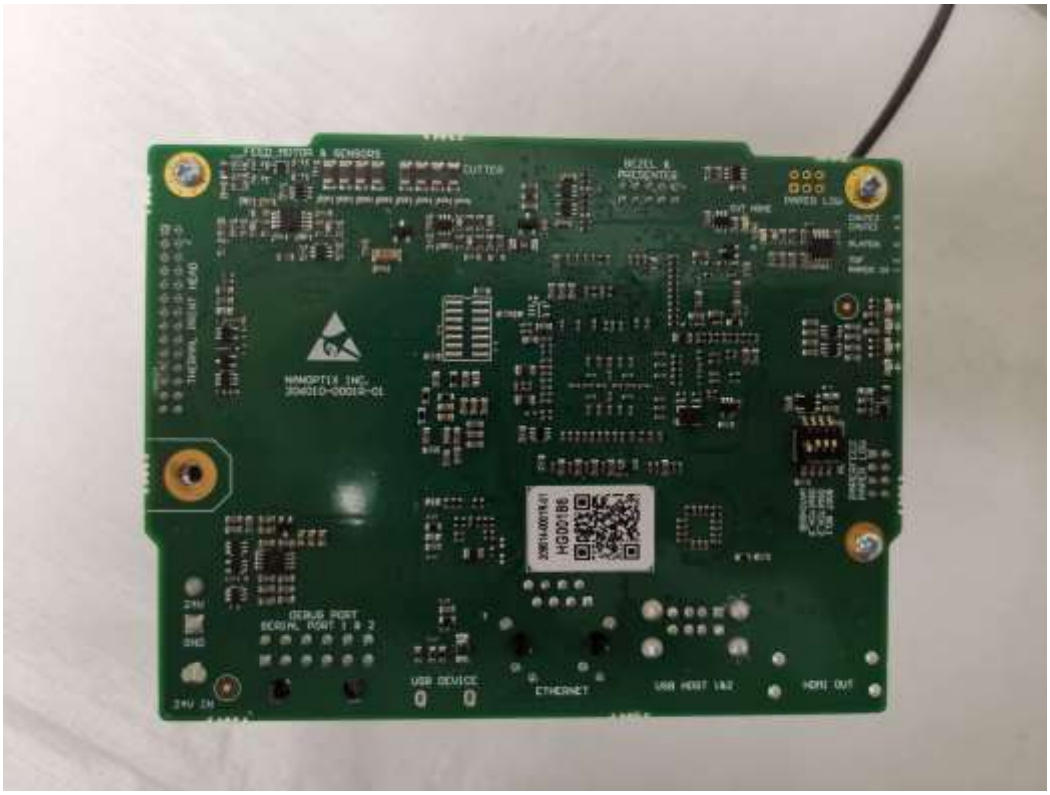

Photo 29 – Internal view of the presenter of thermal printer, P/N 950054

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Photo 30 – Overall view of the printer assembly, CAPM347

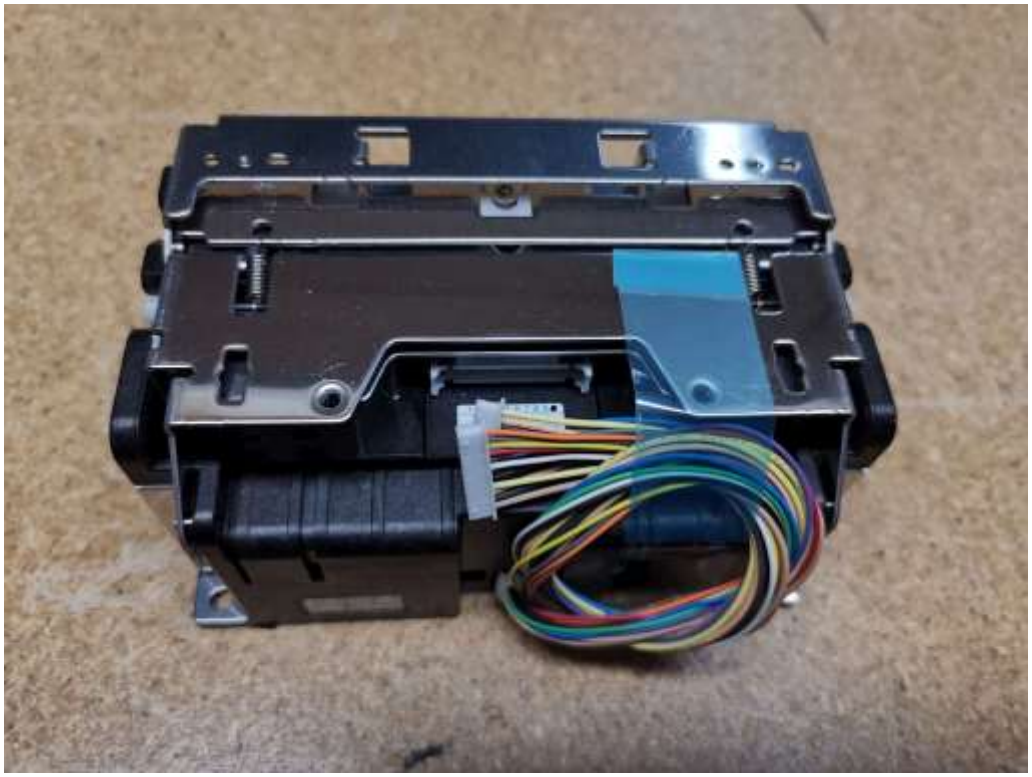

Photo 31 – Internal view of the printer assembly, step motors, CAPM347

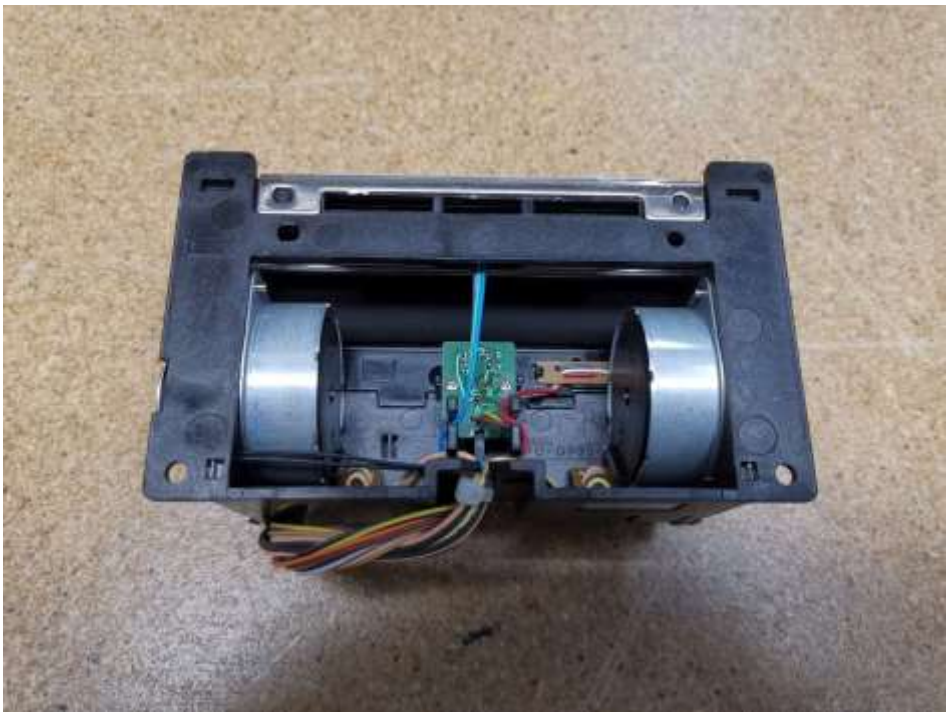

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Photo 32 – Internal circuit board of the printer assembly, CAPM347

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Photo 33 – P/N 950055

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Photo 34 – P/N 950055

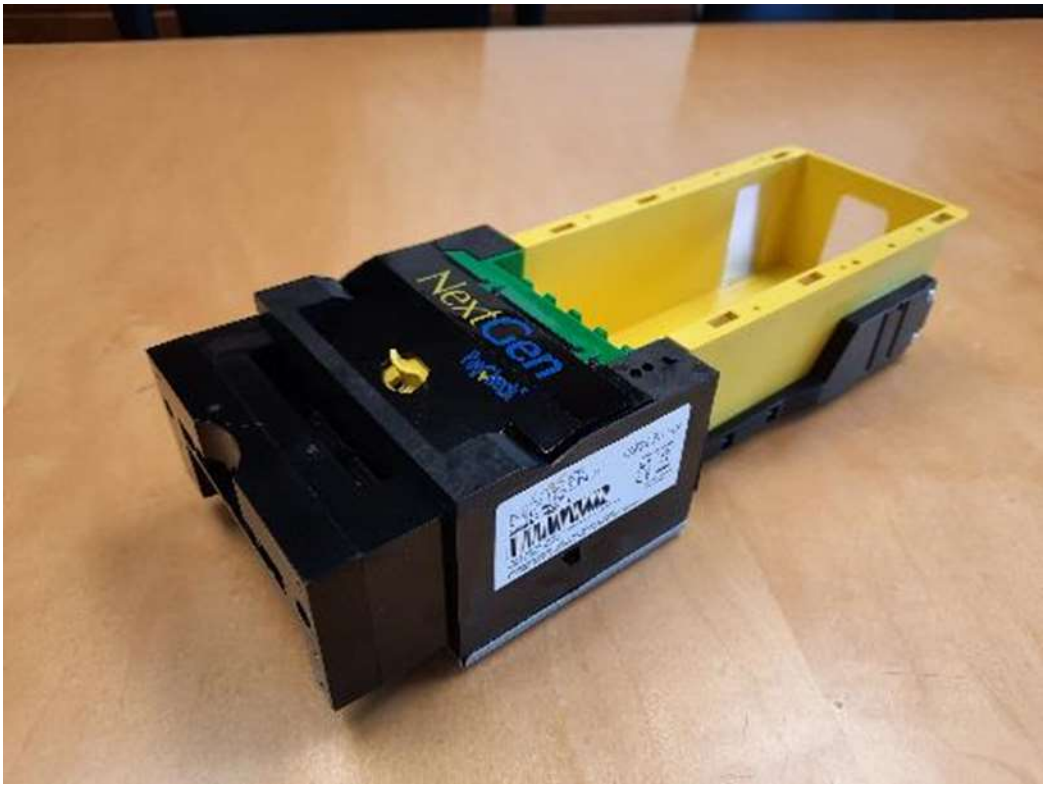

Photo 35 – P/N 950055

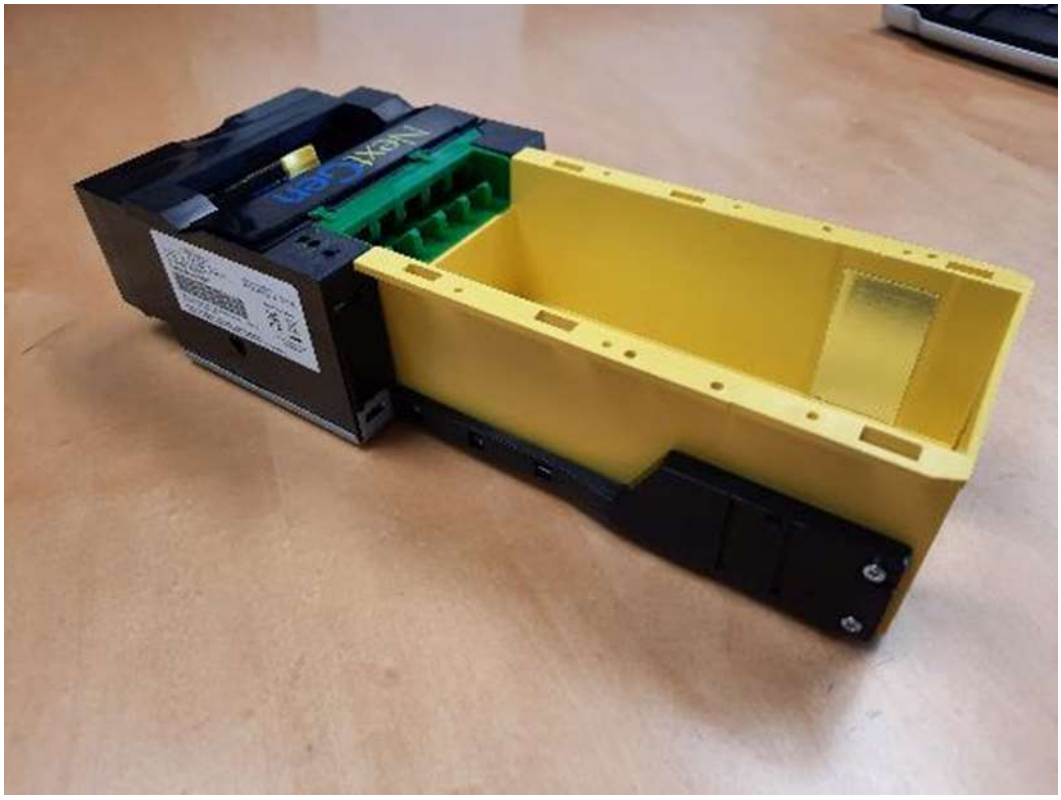

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Photo 36 – P/N 950055

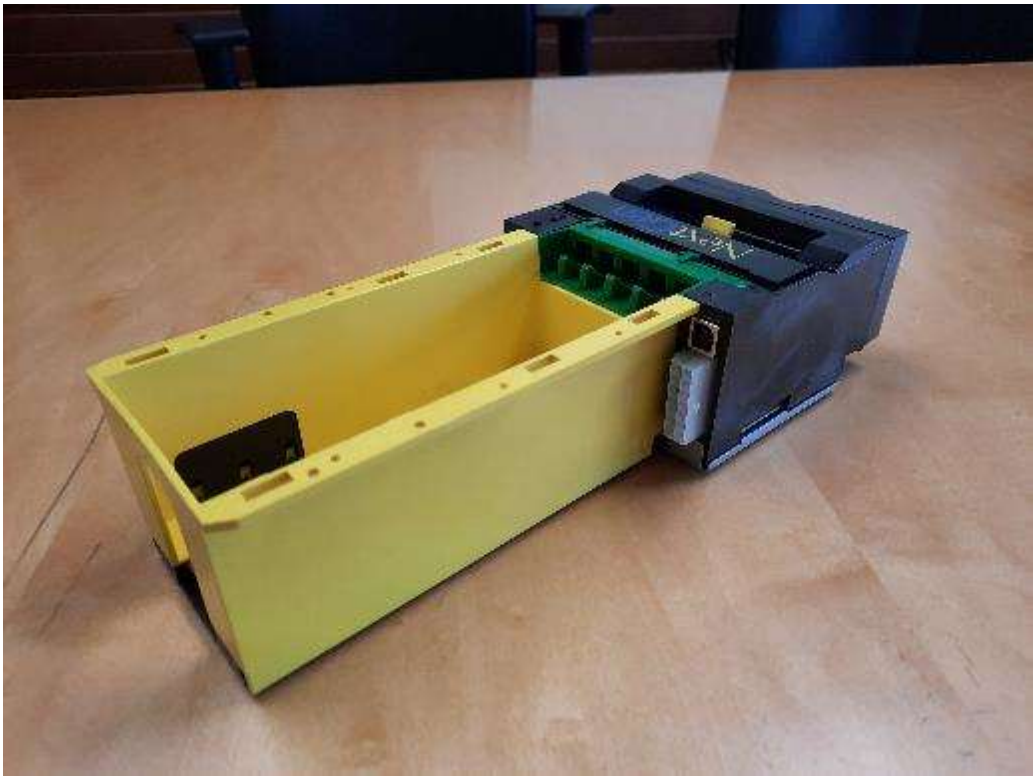

Photo 37 – P/N 950055

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Evaluation of Unlisted Components

Because unlisted components are uncontrolled, and they do not fall under a third party follow up program, QPS may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The unlisted components in the table below require testing and/or evaluation as indicated.

Note to QPS Follow Up Inspector: The testing laboratory will notify you in writing when these components must be selected and sent to the laboratory for re-evaluation

Ship the samples to: QPS Evaluation Services Inc.
81 Kelfield St. Unit 81
Toronto Ontario
Canada
M9W 5A3

Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return **must** accompany the initial component shipment.

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The Unlisted Components covered by this report are shown in the following Table:

Photo No.	Component Description	Manufacturer	Catalog No.	Frequency*	Qty**	Send to Lab (YES or NO)	Required Action***
							None

* Quarterly, semi-annual, annual.

** Note: Indicate any samples not available and provide the anticipated date that the component will be available.

*** Required Action (select one of the three):
Visual
Partial
Full Evaluation

Note:

Visual means the quarterly verification of the description of the unlisted component in the report is sufficient for Certification.

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