



QUICK REFERENCE GUIDE



Kornit Avalanche/ Avalanche DC Pro

Quick Reference Guide

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The Kornit Avalanche Installation Guide is delivered subject to the following conditions and restrictions:

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Safety Instructions



NOTE:

This guide takes into account that you have prepared your printing site according to the instructions provided in the Kornit Avalanche Site Preparation Guide.

Safety Instructions provides you with essential information for safely operating the Kornit Avalanche printer. All operators are expected to be familiar with, and to follow, the safety instructions when operating the Avalanche.

In addition, we recommend that you read and practice the safety guidelines as outlined in the Material Safety Data Sheet (MSDS) for each ink, and post the document in the work area as required by prevailing law.

Safety Instructions includes:

- [Safety Labels](#) on page 5.
- [Personal Safety](#) on page 4.
- [Hardware Safety](#) on page 6.
- [Electrical Safety](#) on page 6.
- [Ink, Consumable, and Waste Safety](#) on page 7.

Safety Labels

The following safety labels are positioned on interior and exterior areas of the Avalanche printer.

Warning Symbol	Meaning	Location	Comments
	High Voltage	- Electronic Compartment-right door - Top of electronic card compartment	Indicates a high voltage part; contact can result in major or fatal injury.
	Moving Parts	- Below left side of left printing pallet - Below right side of right printing pallet	Indicates moving parts; contact can cause minor or moderate injury.
	Servicing by Authorized Personnel	Both sides of electronic card compartment	Indicates that the specific printer part can be serviced by authorized personnel only.

Personal Safety

We advise that all Avalanche operators wear latex gloves and safety glasses and become familiar with the following recommendations.

- **To prevent damage and injury:**
 - Allow only specially trained and authorized personnel to perform service and repair work on the Avalanche.
 - Do not allow any personnel to wear loose-fitting clothing near the working Avalanche.
 - Do not allow smoking, pilot lights, or open flames anywhere near the Avalanche.
- **To extinguish a fire:**

Use CO₂, foam, dry powder, or vaporizing liquids.
- **To prevent slipping/falling:**

Immediately clean up any oil, grease, or water from around the Avalanche.

Hardware Safety

We advise that all operators become familiar with the Hardware Safety recommendations.

- **To prevent injury to personnel:**
 - Do not touch moving parts or put your hands into the Avalanche during operation.
 - Remove tools and loose parts from the Avalanche before operation.
 - Be aware of the weight of the printing pallets when changing (to prevent back strain).
 - Close all compartment and service doors when operating the Avalanche.
 - Make sure that the pallet frame is securely in place when you press the green start buttons to begin the printing process.

Electrical Safety

Even when the Emergency Stop has been pressed, the electronic system still receives electrical input. Therefore:

- Shut off the Main Power Switch before performing any electrical work; do not, under any circumstances, service electrical components while the Avalanche is in standby or printing modes.
- Allow only certified electricians to work on electrical devices.

Ink, Consumable, and Waste Safety

The Avalanche uses water-based inks and consumables such as flushing, wiping, fixation, and priming fluid. The Avalanche also creates waste fluids. Do not come into direct physical contact with ink, consumables, or wastes:

- Allow only authorized personnel to handle inks, consumables, or wastes.
- Avoid skin contact with ink, consumables, or wastes by wearing protective gloves.
- Wear protective goggles when handling ink, consumables, or wastes.
- Store inks and consumables in closed containers and in a cool, ventilated place.

➤ **To handle ink, consumable, or waste spills on the floor or on equipment:**

1. Use rags to stop the spill from spreading.
2. Use additional rags to clean up the spill and then wash the area of the spill with water.
3. Place all soiled rags into a closed container.
4. Incinerate the rags in a permitted, hazardous waste incinerator. Do not release to waterways or sewers.

➤ **To handle ink, consumable, or waste spills on people:**

- **Inhalation:** Move to fresh air.
- **Skin contact:** Wash with water and soap as a precaution. If skin irritation persists, call a physician.
- **Eye contact:** Rinse with plenty of water. If eye irritation persists, consult a specialist.
- **Ingestion:** Drink 1-2 glasses of water. Consult a physician if necessary.

Preparing the Kornit Avalanche Printer for Printing

Preparing the Kornit Avalanche Printer for Printing describes the daily procedures to perform prior to operating the Avalanche and comprises the following tasks:

- [Organizing Tools and Supplies](#) on page 9.
- [Performing Beginning of Day Procedures](#) on page 10.

Organizing Tools and Supplies

The table below lists all tools and supplies required for performing the “Beginning of Day” procedures. Prepare these items before turning on the Avalanche.

Part Number	Description	Quantity
01-WIPR-0909	Lint-free wipes	As required
50 WIPG 0200	Wiping fluid	As required
62-PMNT-0007	Periodic Preventative Maintenance Guide (for Avalanche and DC Pro)	1
83-LATX-0001	Gloves (latex, without talc)	As required
--	Clean rags	As required
--	IPA (Isopropyl Alcohol)	As required
--	Water (tap)	As required

Performing Beginning of Day Procedures

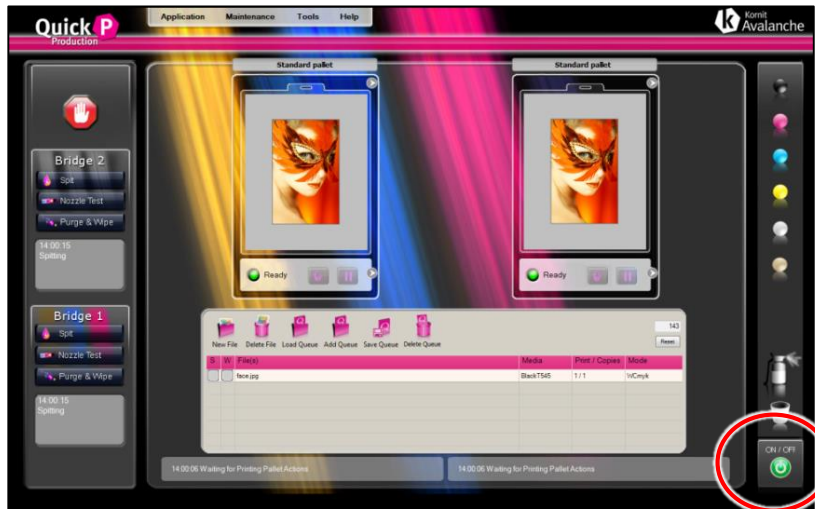
Perform the following procedure at the start of each working day or shift.

1. Turn the Avalanche's main power switch to **ON**.
2. Verify that the green operating lights, for all of the printer systems, are activated.
3. Open the Waste compartment service doors on the right side of the Avalanche and examine the waste tank(s).

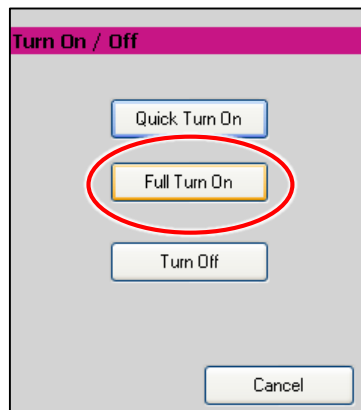


4. Empty any waste tank that is nearly or completely full.
5. Close the service doors.
6. On the left side of the Avalanche, in the bulk ink compartment, verify that the bulk ink bottles are not empty.
7. Replace any empty bulk ink bottles.
8. On the right side of the Avalanche, examine the fixation fluid gauge.
9. If the gauge indicates that the spray tank is empty or nearly empty, refill with fixation fluid.
10. Use clean, lint-free wipes to remove any lint and dirt from the printing pallets.

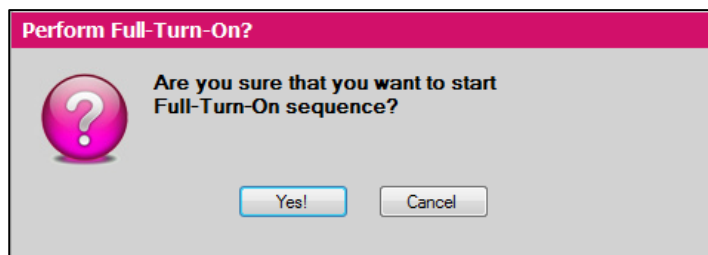
11. Click the **Avalanche Application** icon (located on the desktop) to open the application.



12. From the Main Window:
 - a. Click the **ON/OFF** button; the Turn On/Off window appears.

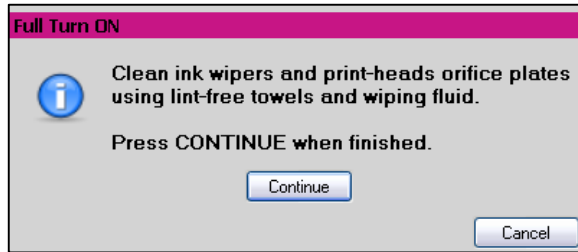


- b. Click **Full Turn On**; the Full Turn On confirmation window appears.



c. Click **Yes**; the following occurs:

- The motors are activated and automatically perform “homing”.
- The two maintenance trays are lowered to the Down position.
- The Full Turn On window appears, instructing to clean the ink wipers and print head orifice plates using lint-free towels and wiping fluid.



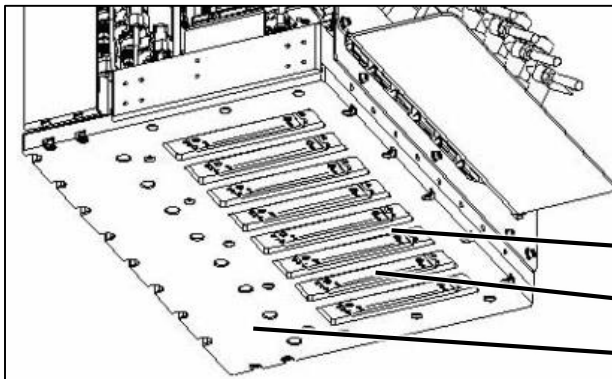
13. Using wiping fluid and lint-free wipes:

- a. Clean the bottom frame of the print head carriages.
- b. Clean the edges around each print head orifice plate (bottom of the print head), to remove the dried ink.



CAUTION!

Do **not** touch the print head orifice plates while cleaning the bottom frame or edges.



Print Head Orifice Plate edge

Print Head Orifice Plate

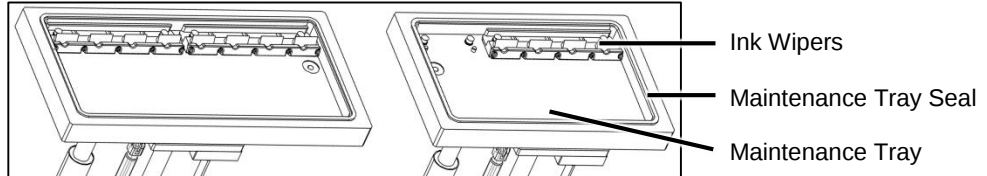
Print Head Carriage Bottom Frame

14. Using clean rags and water:
 - a. Clean the maintenance trays.
 - b. Clean the rubber maintenance tray seal and its surroundings.



CAUTION!

Do **not** touch the ink wipers while cleaning the maintenance trays.



15. Using wiping fluid and new lint-free wipes, clean the print head orifice plates (bottom of the print heads).
16. Using wiping fluid and new lint-free wipes, clean the ink wipers.
17. In the Full Turn ON window, click **Continue**; the printer performs Purge and Wipe and enters the Ready for Printing mode (the green Ready light appears).
 - a. From the Main Window, click the **Nozzle Test** button to perform a nozzle test and examine the results.
 - b. Verify that there are no blocked nozzles.
 - c. If there are blocked nozzles, clean the heads with a lint-free wipe and, from the Main Window (for both bridges):
 - I. Click **Purge & Wipe**.
 - II. Click **Spit**.
 - III. Click **Nozzle Test**.
 - d. If there are still blocked nozzles, clean the heads with a lint-free wipe and repeat step c.

Printing a Job

Printing a job comprises the following procedures:

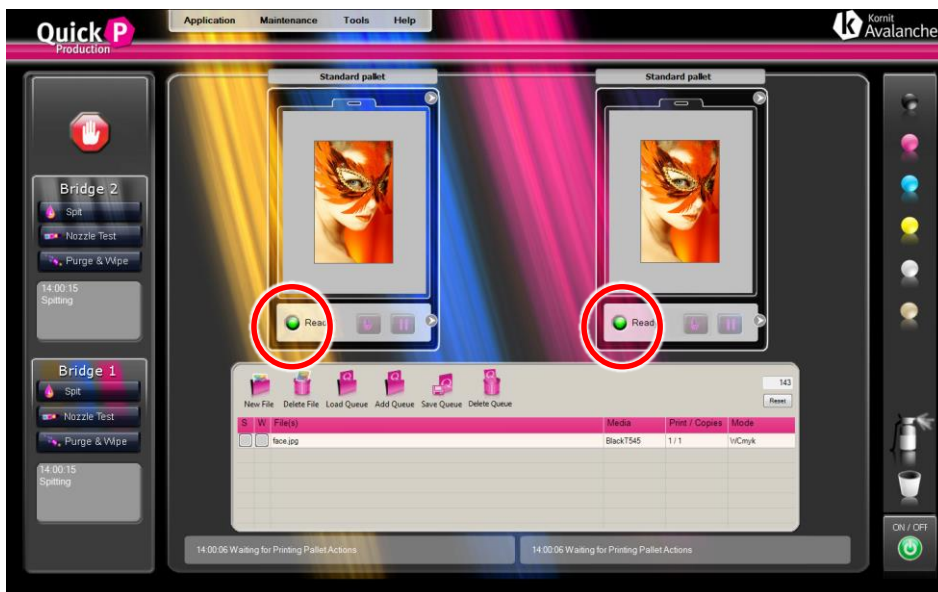
- [Verifying that the Kornit Avalanche Printer is Ready for Printing](#) on page 15.
- [Uploading a Job File into the Job Queue](#) on page 16.
- [Loading a Garment onto a Printing Pallet](#) on page 16.
- [Printing the Job](#) on page 21.
- [Unloading a Garment from the Printing Pallet](#) on page 21.
- [Drying the Garment](#) on page 22.

Verifying that the Kornit Avalanche Printer is Ready for Printing

After you perform all of the recommended procedures before beginning to print your first job of the day or at the start of your shift, the Avalanche should be ready for printing.

➤ To verify that the Avalanche is ready for printing:

In the Main Window, view the status buttons beneath the printing pallet images; the gray Ready indicator lights become green.



Uploading a Job File into the Job Queue

You can upload images in the following image color modes:

- RGB (8-bit)
- RGBA (Transparent Mask)
- CMYK (1 or 8-bit)
- CMYKWH (White and Highlight Channels – 8-bit only)

In addition, you can upload images in the following image file formats:

- .jpeg
- .png
- .psd
- .tiff
- Image files that were prepared with the Quick P Designer and arrive with three to six separations.

➤ To upload an image file:

1. In the Job Queue menu, click the **New File** button; the Load Image window appears.

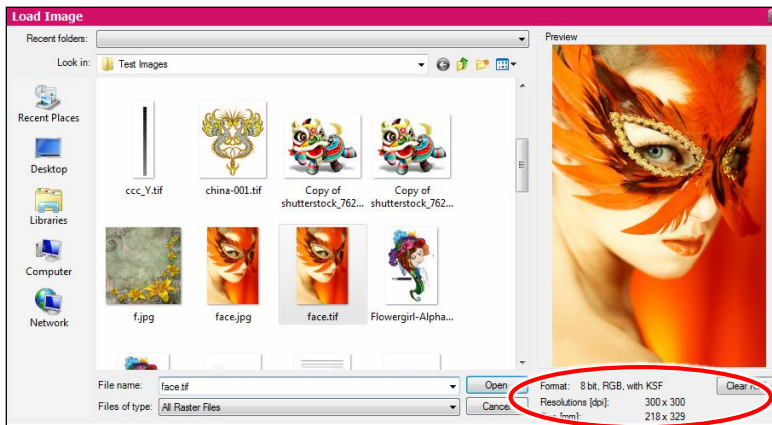


Image
Properties

2. Select an image file; the image appears in the Preview pane on the right side of the window and the image properties appear below the image.

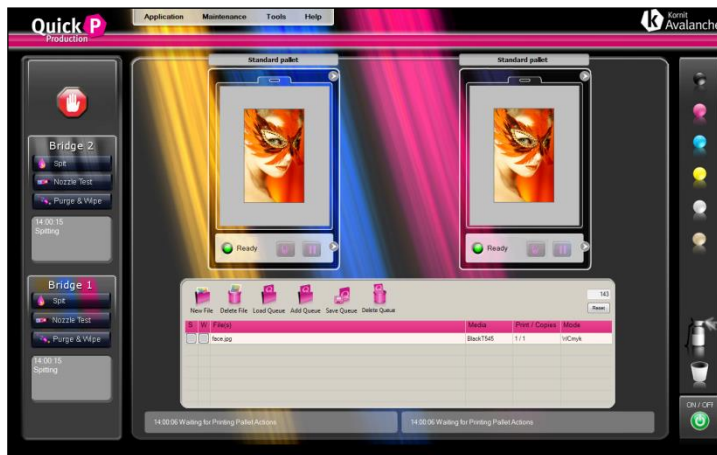
**NOTE:**

The Preview pane displays the following information:

- Format:
 - 1-bit – for 4-6 color separation. A 1 bit file is uploaded with a .KSF file.
 - 8-bit – for RGBA (Alpha mask)
 - 8-bit – for CMYK, CMYKW, CMYKWH (highlight). An 8 bit file can be uploaded either with or without a .KSF file. (When the image file is coupled with a .KSF file, the Clear KSF button is enabled).
- Resolution – DPI
- Size – The size of the image.

When you want to select new parameters for a file, rather than use previously-created calibration, delete the KSF file by clicking the Clear KSF button before clicking Open (i.e. before loading).

3. Click **Open**; the image file appears in the job queue and the image appears centered in the Preview pane above the job queue.

**NOTE:**

- When the image file is accompanied by a KSF file, the image appears in the Preview pane.
- When there is no accompanying KSF file, the File Details window appears.
- The position of the image in the File Preview pane reflects the position of the printed image on the printing pallet.

Loading a Garment onto a Printing Pallet

After each spraying or printing process, or at the start of the work day, the Avalanche automatically moves the printing pallets towards you, to the loading positions. In the loading positions, you can mount the garments onto the printing pallets.



NOTE:

The Loading Garment procedure is based on the Standard pallet.



To load a garment onto a printing pallet:

1. Open the pallet frame:
 - a. Pull out the black locking knob.
 - b. Lift up the pallet frame.



2. Remove any printed garment already on the printing pallet. See [Unloading a Garment from the Printing Pallet](#) on page 21.

3. Position the garment onto the printing pallet:
 - a. The print side up.
 - b. The top of the garment (e.g. the t-shirt neck hole) closest to you.



NOTE:

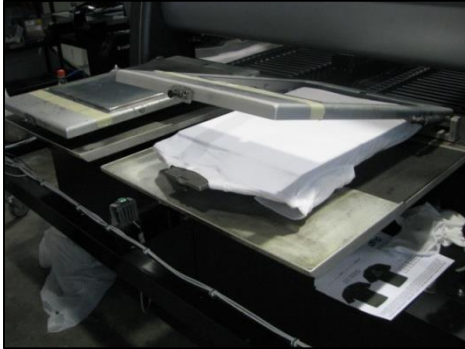
- The side that is not printed upon should be underneath the bottom of the printing pallet.
- The printing will appear upside down to you.

4. Fold any excess garment material underneath the printing pallet.



5. On the printing pallet, gently smooth out any visible garment wrinkles. Do not stretch the material.

6. Lower the pallet frame.



7. Push down the pallet frame, making sure that the latch snaps into place.



WARNING!

Verify that the pallet frame is securely in place before continuing.

You can test whether the pallet frame is properly closed by trying to pull the frame up.
When properly closed, the pallet frame does not open.

Printing the Job

When the Avalanche is ready for printing and you have mounted the garment onto the printing pallet, you can start printing.

➤ To activate the Avalanche:

1. On the Avalanche front panel, press the two green Print buttons of the printing pallet that you are currently using; the Avalanche begins to print the first job appearing in the Job Queue and runs until the printed image is completed.



2. For each subsequent copy:
 - a. Unload the printed garment.
 - b. Load the new garment.
 - c. Press the two green Print buttons of the printing pallet being used.



NOTE:

Press the left and center Print buttons when printing on the left printing pallet and press the right and center Print buttons when printing on the right printing pallet.

When the last copy of the print job has been printed, the job is removed from the Job Queue and the next job moves to the top of the Job Queue.

Unloading a Garment from the Printing Pallet

After each spraying or printing process, the printing pallet automatically moves forward to the loading position. From this position, you can remove the current garment and load the next one.

➤ To unload a garment from the printing pallet:

1. Pull out the black printing pallet locking knob and lift up the pallet frame.
2. Hold the garment at the top of each side and gently lift it off the printing pallet; do not wrinkle the garment.
3. Hold the garment so that it hangs straight down.
4. Gently lay the garment on the dryer, making sure that the garment does not wrinkle.

Drying the Garment

After printing, immediately remove the garment from the printing pallet and place it on the dryer.



NOTE:

- The average drying time suitable for most types of garments is 4 minutes (at 160°C / 350°F).
- Certain garment types and colors can require changing the drying system and parameters (e.g. images printed with white ink require more drying time).

Testing Dryer Suitability

Before using the dryer for the first time, or before mass-printing, you should test the performance of the dryer.



To test dryer suitability:

Print a garment using all the standard procedures and parameters that you will be using on an ongoing basis:

Run the garment through the dryer and then:

- Smell the image – If you can smell the fixation spray, the image has not dried.
- Chafe the image with a piece of material – If ink rubs off on the material, the image is not dry.
- Wash the garment to make sure that the image does not fade.
- Examine for burning.

Burning

A burnt image has a yellowish color or is cracked.



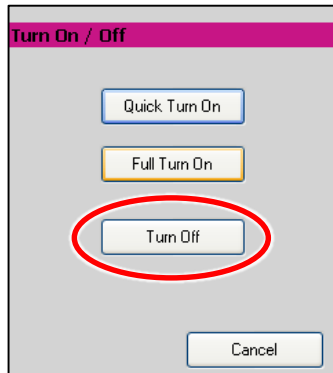
To correct burning:

1. On your dryer, adjust the temperature range according to the temperature listed in the Dryer Specifications. See the Avalanche Help.
2. Dry a second garment; if the image is still burnt, or if the image cracks when stretching the garment, reduce the drying temperature for this type of garment.

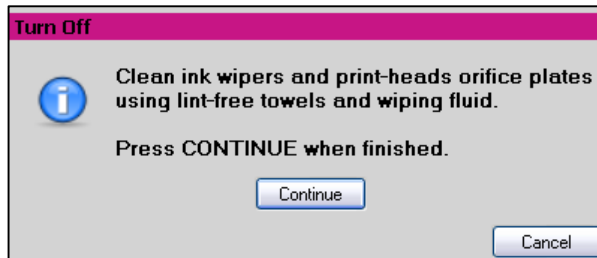
Shutting Down the Kornit Avalanche Printer at the End of the Day

At the end of the work day, perform the follow steps to turn off the Avalanche:

1. In the Main Window, click the **ON/OFF** button; the Turn On/Off window appears.



2. Click **Turn Off**; the Perform Turn Off window appears.
3. Click **Yes**; the Turn Off window appears.



4. Open the service doors.
5. Using wiping fluid and lint-free wipes:
 - a. Clean the bottom frame of the print head carriages.
 - b. Clean the edges around each print head orifice plate (bottom of the print head), to remove the dried ink (see **Error! Reference source not found.**).
6. Using clean rags and water:
 - a. Clean the maintenance trays.
 - b. Clean the rubber maintenance tray seals and their surroundings.
7. Using wiping fluid and new lint-free wipes, clean the print head orifice plates (bottom of the print heads).
8. Using wiping fluid and new lint-free wipes, clean the ink wipers.

9. Close the service doors and in the Turn Off window, click **Continue**; the Information window appears, informing that the Turn Off was successful.
10. Click **OK** to close the Information window.
11. In the Main Window, click **Application > Exit**.
12. Shut off the Main Power switch.

Regulations

Regulations include the following issues:

- [WEEE Notice](#) on page 25.
- [Environmental Policy](#) on page 25.
- [Declaration of Conformity](#) on page 26.



WEEE Notice

Disposal of Waste Electrical and Electronic Equipment and/or Battery by users in private households in the European Union.

This symbol on the product or on the packaging indicates that when last user wishes to discard a product, it must be sent to appropriate facilities for recovery and recycling. For more information about recycling of this equipment and/or battery, please contact the equipment supplier.

The recycling of materials will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and environment.



Environmental Policy

Service personnel should dispose of replaced printer parts according to the laws and regulations of the local authority and recycled, where applicable.

For more detailed information regarding these recommended procedures, refer to your regional Kornit support office or distributor.

Declaration of Conformity



EC DECLARATION OF CONFORMITY

We Kornit Digital Ltd

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In accordance with the following Directives:

EMC: Directive 2004/108/EC
Safety: Directive 2006/42/EC
LVD: Directive 2006/95/EC
RoHS: Directive 2011/65/EU

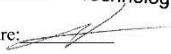
Hereby declare that:

Equipment: Textile Digital Printer
Model number: Avalanche (951)

Is in conformity with the applicable requirements of the following documents:

Ref. No.	Title
EN 61000-6-2:2005+AC 2005	Electromagnetic compatibility (EMC) - Part 6-2 Immunity for industrial environments
IEC 61000-4-2:2008	Electromagnetic compatibility (EMC) - Part 4.2: Testing and measurement techniques - Electrostatic discharge immunity test
EN 55011:2009; Amendment A1: 2010	Radio-frequency disturbance characteristics. Limits and methods of measurement
EN ISO 12100-2010	Safety of machinery. General principles for design. Risk assessment and risk reduction
EN 60204-1: 2006	Safety of machinery .Electrical equipment of machines - Part 1:General requirements
EN 614-1: 2006	Safety of machinery. Ergonomic design principles – Part 1: Terminology and general principles
EN 982:1996+A1:2008	Safety of machinery. Safety requirements for fluid power systems and their components. Hydraulics
2011/65/EU	Restriction of the use of certain hazardous substances (RoHS)

Manufacturer: **Kornit Digital Technologies Ltd.**

Signature:  Date: 04/12/2014 Position: Engineering Manager

Full Name: Shimon Hayoun Place: Israel

The technical documentation for the machinery is available from:

Name: Wilfried Kampe Address: Halskestrasse 29, Ratingen,
D-40880, Germany

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