

# Cleaning Vehicle Computers, Mobile Computers and Accessories in Food Processing Environments

## Overview

When using vehicle computers, mobile computers and accessories in food processing environments, health safety is often of paramount importance. To help prevent the spread of infectious agents that cause disease and to keep a device functioning properly, proper cleaning and disinfecting of the device is essential.

Since repeated use of chemical cleaners can have an adverse effect on the paint, plastics and other materials of a device, only approved cleaning agents must be used, and cleaning guidelines must be followed. This document provides best practices for regular cleaning and maintenance of your device in order to optimize performance.

## Approved Cleaning Agents

There are numerous cleaning agents used in the food processing industry, some of which contain ingredients that may be harmful to your Zebra product. It is therefore necessary to consult the Zebra product specific Approved Cleaning and Disinfecting agents list to identify the agents approved for use. Note: this document can be found at [Zebra.com](http://Zebra.com) for the specific product.

For further assistance or questions, about the cleaning process or about an agent that does not appear on the list, please contact your partner or Zebra sales representative.

## Regular Cleaning and Disinfecting

The following are the cleaning and disinfecting guidelines.

Do not allow any abrasive material to contact the touch panel/display/ scanner exit window.

Remove any visible dirt particles by blowing them off using an air brush blower.



Using either an approved pre-moistened wipe or a soft cloth dampened (not saturated) with an approved cleaning agent, remove the rest of the dirt particles.

- Do not allow liquid pool on any area of the device, especially around or on the touch panel/display/scanner exit window, trigger, and cable (I/O) connector.
- Never apply liquid directly to the device. Care should be taken not to pour, spray, or spill any of the liquids noted on any area of the device.
- Gently wipe all surfaces of the device, including the front, back, sides, top, and bottom. Do not wrap the device in the cloth or pre-moistened wipe.
  - Clean the keys and between the keys of mobile computers, the trigger, and between the trigger and the housing of barcode and scanners. (Use a cotton-tipped applicator to reach between keys and into tight or not easily accessed areas. Do not force swab into areas where it does not easily fit.)
  - After cleaning, immediately dry the touch panel/display/scanner exit window with a soft, non-abrasive cloth to prevent streaking.
  - Metal portions, including the battery latch and housing contacts, should be wiped down regularly with isopropyl alcohol to remove residual materials from the cleaning agents.
- Allow the unit to air dry before use.
- Once per shift, the device should be cleaned with an isopropyl alcohol wipe to avoid buildup of disinfectant materials (such as bleach). Most disinfectants leave residual materials which build up over time. Residual materials can then be transferred to an operator's skin (without gloves) and should be avoided.

## Monthly Deep Cleaning Maintenance

Keep your Zebra vehicle computers, mobile computers, scanners, and cradles in good working order with regular and comprehensive cleaning to remove the natural build-up of dirt that occurs with everyday use. Deep cleaning maintenance is recommended on a monthly basis.

### 1. Completely shut down and disconnect the device from AC/DC power.

### 2. Scanner Exit Window, Camera Window, Touch Panel, and Display

- Wipe the scanner exit window with a lens tissue or other material suitable for cleaning optical materials such as eyeglasses.
- Use a circular motion with the lens tissue working from the middle toward the outside edges.

### 3. External electrical contacts

- Dip the cotton portion of a cotton-tipped applicator in isopropyl alcohol.
- Gently rub the cotton portion of the cotton-tipped applicator back and forth across the connector contacts of the Zebra device.
- Using a dry cotton-tipped applicator, rub across the connector contacts of the Zebra device back and forth several times. Carefully inspect and remove any cotton or other residue that remains on the connector.
- Allow the isopropyl alcohol to air dry, or dry with a soft lint-free cloth or towelette. Ensure electrical contacts are fully dry before reapplying power.

### 4. Battery Chargers AND Cradles

- Disconnect the power cable from the cradle or charger.
- Remove large and loose particles with a soft brush.

- Dip a cotton-tipped applicator in isopropyl alcohol.
- Gently rub the moistened cotton-tipped applicator along the top of the pins of the connector. Slowly move the applicator back and forth from one side of the connector to the other, being careful not to compress the pins (in order to avoid trapping cotton residue in the connector).
- Rub all sides of the connector (including pins and walls) with the cotton-tipped applicator.
- Spray canned compressed air across the connector area by pointing the tube/nozzle about 1/2 inch (12.7 mm) away from the surface. (Caution: When using canned compressed air, follow the product manufacturer's directions for safe usage).
- If grease or other types of debris are found on other areas of the cradle, use a lint free cloth and isopropyl alcohol or a pre-moistened alcohol wipe to remove.
- Inspect and remove any residue (e.g., cotton, cloth, etc.) that may have attached to the connector during the cleaning process.
- Allow the isopropyl alcohol to air dry, or dry with a soft lint-free cloth or towelette. Ensure electrical contacts are fully dry before reapplying power.

### 5. Audio Grills and Openings (receiver, speaker, and microphones)

- a. Apply a couple drops of Isopropyl alcohol (70% or 91% solution) to audio grill area.
- b. Using a soft fine bristle brush gently brush the grill in a side to side motion, along the length of the slots, to sweep debris out of the openings
- c. Allow to air dry or use canned compressed air (across the openings, not directly inwards) to dry.

## Effects of Vinyl Gloves and Hand Sanitizers

Many vinyl gloves contain phthalate. These additives can interact with plastics and cause degradation. Using vinyl gloves containing phthalates should be avoided when handling mobile computers, scanners and accessories. After exposure to products containing phthalates, hands should be washed and dried before using the devices.

Some hand sanitizers contain ingredients that can be harmful to the device.

- Hand sanitizers should not be intentionally applied to products.
- Hands should be completely dry before handling the device and cradles to prevent damage.

## Improper Cleaning Example

**Issue:** Mobile computer units exhibited paint flaking and severe corrosion of the aluminum case in external areas.

**Root Cause:**

For the washdown, the customer used a highly alkaline, sodium hydroxide cleaning solution. Analysis of the cleaning solution composition, as indicated on the product brochure and Safety Data Sheet (SDS), indicates that when mixed with water as specified, the solution is extremely aggressive to all aluminum and zinc materials, and is incompatible with even slight exposure to the rear case base material.

**Solution:** A cleaning solution consisting only of 10% bleach/ 90% water was recommended to customers. Subsequently, a reduction in the return rate had been seen.

