



# Hadron<sub>mini</sub> R1271C

High Performance 1-port Embedded Reader



## Moisture Sensitive Level 3 (MSL 3)

CAEN RFID srl follows JEDEC standards for moisture classifications. The Hadron<sub>mini</sub> R1271C RFID reader is classified as MSL 3.



**Warning:** The damaging effects of moisture absorbed in semiconductor packages during SMT assembly are known. Pay attention to the next paragraphs and follow the instructions to avoid problems.

## MSL 3 Handling at PCB Assembly

The Hadronmini R1271C package is moisture sensitive and needs to be handled within proper MSL 3 guidelines to avoid damage from moisture absorption and exposure to solder reflow temperatures that can result in yield and reliability degradation.

### A. During PCB Assembly

1. Devices are baked and dry-packed before shipment from CAEN RFID. The packing uses a Moisture Barrier Bag (MBB). A Humidity Indicator Card (HIC) and drying desiccant are included inside the MBB. A MSL 3 label is attached to caution that the bag contains moisture sensitive devices.
2. Shelf life of devices in a sealed bag is 12 months at <40°C and <90% room humidity (RH).
3. Upon opening of MBB, the HIC should be checked immediately; devices require baking before board mounting if the HIC is >10% when read at 23°C ± 5°C.
4. After MBB is opened, devices should go through reflow for board assembly within 168 hours at factory conditions of <30°C/60% RH, or stored at <10% RH. If both of these conditions are not met, baking is required before board mounting.
5. If baking is required, devices should be baked for a minimum of 48 hours at 125°C or 24 hours at 150°C

### B. Handling Unused Devices

1. Any unused devices after the MBB has been opened for more than 168 hours or not stored at <10% RH should be baked before any subsequent reflow and board assembly.
2. Re-baking should be done for a minimum of 48 hours at 125°C or 24 hours at 150°C.
3. Unused devices can either be baked and dry-packed first before storage, or they can be baked just before the next board assembly. It is recommended that the former be practiced as it helps to prevent operator error from re-using devices without baking. In both cases, the re-packed materials should follow the guidelines in section A.

### C. Reworking a Device on a PCB

1. Before a device is removed from the module, the module must first be baked.
2. Baking should be done for a minimum of 48 hours at 125°C or 24 hours at 150°C.
3. It is recommended that during removal, localized heating be used, and the maximum body temperature of device should not exceed 200°C.
4. The replacement device should not exceed the specified floor life of 168 hours.



For more information on the product please download the *Hadron<sub>mini</sub> R1271C Technical Information Manual* at:

<https://www.caenrfid.com/en/products/hadron-mini-r1271c/>

