Four Easy Steps of RFID Configuration

1. Examine Labels to determine printer settings.
2. Set up printer.
   A) Menu Settings
   B) Physical Antenna Position
4. Confirm operation by printing/encoding a label.

Refer to the CL4NX Operator Manual for more information.

Thank you for choosing a SATO RFID Printer. This guide will help configure the printer to encode your inlays.

You can access the CL4NX Operator Manual from the website for your region linked from www.satoworldwide.com.

1. Examine labels.

Refer to the attached CL4NX UHF Inlay Configuration Guide for what measurements you should take and what they mean, as well as a list of inlays and their required configurations.

2. Set up printer.

   A) Menu Settings
   B) Physical Antenna Position
   C) Other Settings

Refer to the CL4NX Operator Manual for detailed instructions.

1. Turn on Power
2. Printer Comes Online
3. Switch to Offline
4. Enter Menu
5. Select "Interface"
6. Select "RFID"

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**Explanation of RFID menu items**

- **Antenna Pitch**
  - Allows the user to select the "Standard" or "Short" pitch antenna settings. See under "Antenna Pitch" in the CL4NX UHF Inlay Placement & Configuration Table.

- **Write Power**
  - Radio Power level used to write information to RFID tag. "0 - 16 - 24" (dBm). See under "Write" under "Power" in the CL4NX UHF Inlay Placement & Configuration Table.

- **Read Power**
  - Radio Power level used to read information from RFID tag. "0 - 16 - 24" (dBm). See under "Read" under "Power" in the CL4NX UHF Inlay Placement & Configuration Table.

- **Tag Offset**
  - Distance to print on label BEFORE pausing to encode RFID. "0 - 240" (mm). This setting will be used when labels aren't compatible with the CL4NX's antenna positions. For more information about compatible antenna positions, refer to the attached CL4NX UHF Inlay Placement and Configuration Table.

- **Reader Model**
  - Display model of installed RFID reader module.

- **Reader Version**
  - Display firmware version of installed RFID reader module.

- **View**
  - When selected printer will attempt to read the tag currently set in the printer. Select the memory bank from which to read information. "EPC", "TID", "User", "PC"

- **Retry Mode**
  - Determine whether to retry encoding of failed data after error recovery. "Retry", "Release". The Release option deletes the current print job, allowing the printer to move on to the next print job. When Retry is selected, the printer will continue to attempt encoding the same data.

- **Retries**
  - Number of failed encoding attempts before error warning/print pause. "0 - 9"

- **Mark bad tags**
  - Mark bad tags with slash marks. "Enable", "Disable"

- **MCS**
  - **MCS** Multi vendor Chip-based Serialization: use TID as base for GTIN serial number. "Enable", "Disable"
  - **Chip Manufacturer**
    - Manually select MCS manufacturer prefix. For use when Assign Prefix is "Manual", "IMPINJ", "ALIEN", "NXP". Value is ignored when Assign Prefix is "AUTO".
  - **Pre-Encoded Tag**
    - Enable for tags with pre-encoded EPC serial numbers. EPC GTIN data still required. "Enable", "Disable"
  - **Assign Prefix**
    - Automatically or manually assign MCS manufacturer prefix to serial number. "AUTO", "MANUAL"
  - **MCS Prefix Digit**
    - Determine length of manually assigned MCS manufacturer prefix. For use when Assign Prefix is Manual. "NONE", "1bit", "2bits", "3bits"
  - **Input Prefix**
    - Determine contents of MCS prefix. "0 - 7". For use with EPC chips not manufactured by Impinj, Alien Technology, or NXP Semiconductors.
  - **Log RFID Data**
    - Record encoded tag information. "Disable", "Enable"
  - **Data to Record**
    - Used with log mode: determine what information to record. "EPC and TID", "EPC", "TID"
  - **Output Error Mode**
    - Allows the user to set the signal type for RFID errors. "Pulse", "Level"
  - **Pulse Length**
    - Allows the user to select the length of an RFID error pulse. This menu is displayed when the Output Error Mode is set in Pulse. "100ms", "200ms", "300ms", "400ms", "500ms"
  - **Counters**
    - **Life time**
      - Life time counter displays the number of encoding successes, failures, and total attempts. (Count Success, Count Failure, Count Total)
    - **User**
      - User counter displays the number of encoding successes, failures, and total attempts. (Count Success, Count Failure, Count Total, Clear Counter)

*BOLD items are default settings.*
B) Physical Antenna Position

When the Antenna Pitch is set to “Standard” in the printer’s RFID menu, adjust the physical position of the antenna according to the settings required for the specific label and inlay used.

Refer to the sticker on the printer’s top cover, the help videos in the printer menu, and the Operator Manual for more information.

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3 Set Labels and Carbon Ribbon.

Refer to the sticker on the printer’s top cover, the help videos in the printer menu, and the Operator Manual for more information.

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4 Confirm operation by printing/encoding a label.

Be sure to read the data and check that it is correctly encoded.

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RFID Printing Tips

A) Recommended no-print zone
Avoid printing barcodes or characters directly on top of an RFID chip. The uneven surface will negatively affect print quality.

B) Printing of RFID tag errors
The printer can be set to print an RFID tag error when there is a problem with the recorded data, for example in a write to a defective tag, in order to prevent accidental distribution of a defective label. Depending on the error and the print command paper size setting, a diagonal line or a cross will be printed, together with a description of the error.

- List of errors printed

<table>
<thead>
<tr>
<th>Message</th>
<th>Cause</th>
<th>Countermeasure</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAG NOT FOUND</td>
<td>Tag cannot be found, or reading in failed.</td>
<td>Confirm inlay operation and check printer / antenna configuration.</td>
</tr>
<tr>
<td>WRITE TAG ERROR</td>
<td>Writing failed.</td>
<td>Confirm inlay operation and check printer / antenna configuration.</td>
</tr>
<tr>
<td>PROTECT (TAG) ERROR</td>
<td>Cause 1: An attempt was made to write to a tag with the write lock set.</td>
<td>Confirm inlay operation and check printer / antenna configuration.</td>
</tr>
<tr>
<td></td>
<td>Cause 2: An attempt was made to write to a non-writable address.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Countermeasure</td>
<td>Use a label with the lock not set.</td>
</tr>
<tr>
<td>LOCKING ERROR</td>
<td>Lock processing failed.</td>
<td>Check the label.</td>
</tr>
<tr>
<td>MULTI TAGS ERROR</td>
<td>Multiple tags captured simultaneously.</td>
<td>Confirm inlay operation and check printer / antenna configuration.</td>
</tr>
<tr>
<td>DIFFER EPC ERROR</td>
<td>In a processing sequence, non-matching EPC found.</td>
<td>Check the label.</td>
</tr>
<tr>
<td>RFID MODULE ERROR</td>
<td>Hardware error occurred.</td>
<td>Contact your SATO reseller or technical support center.</td>
</tr>
</tbody>
</table>

Extensive contact information of worldwide SATO operations can be found on the Internet at www.satoworldwide.com