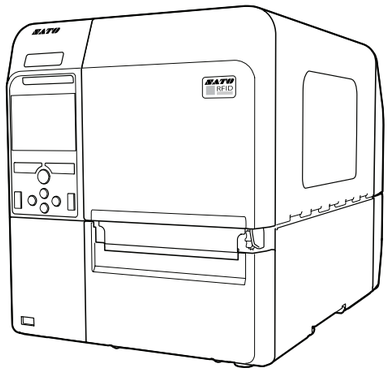
CL4NX

UHF RFID Configuration Guide

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



Four Easy Steps of RFID Configuration

1 Examine Labels to determine printer settings.

2 Set up printer.

A) Menu Settings
B) Physical Antenna Position

3 Set Labels and Carbon Ribbon.

4 Confirm operation by printing/encoding a label.

→ Refer to the CL4NX Operator Manual for more information.

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.

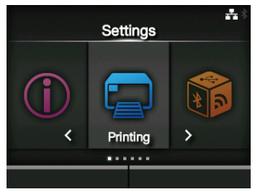
2 Set up printer.

A) Menu Settings:
Adjust the Antenna Pitch, Write Power and Read Power according to required levels on attached list.

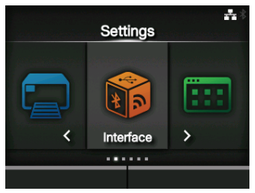
1. Turn on Power

2. Printer Comes Online

3. Switch to Offline
(Line button on the Operator Panel)



4. Enter Menu
(Right Arrow button on the Operator Panel)



5. Select “Interface”

6. Select “RFID”

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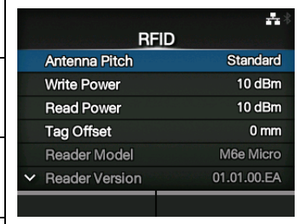
- Explanation of RFID menu items

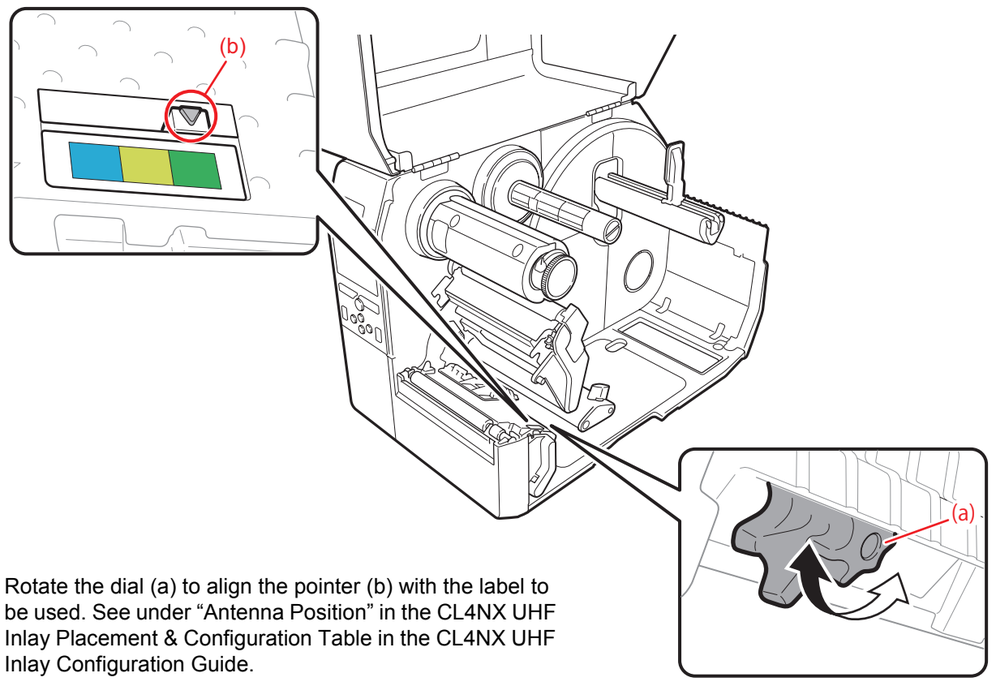
Antenna Pitch	Allows the user to select the “**Standard**” or “Short” pitch antenna settings. *See under “Antenna Pitch” in the CL4NX UHF Inlay Placement & Configuration Table.*	
Write Power	Radio Power level used to write information to RFID tag. “0 - **10** - 24” (dBm) *See under “Write” under “Power” in the CL4NX UHF Inlay Placement & Configuration Table.*	
Read Power	Radio Power level used to read information from RFID tag. “0 - **10** - 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 in unit) 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 - **1** - 9”	
Mark bad tags	Mark bad tags with slash marks. “**Enable**”, “Disable”	
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.



Rotate the dial (a) to align the pointer (b) with the label to be used. See under “Antenna Position” in the CL4NX UHF Inlay Placement & Configuration Table in the CL4NX UHF Inlay Configuration Guide.

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.

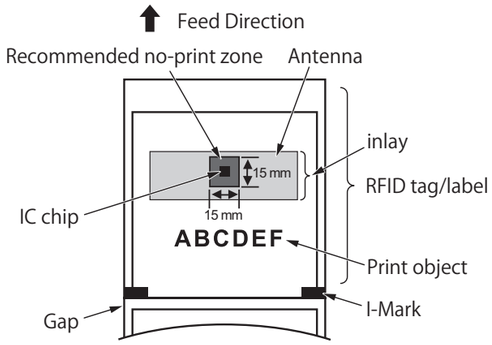
4 Confirm operation by printing/encoding a label.

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

RFID Printing Tips

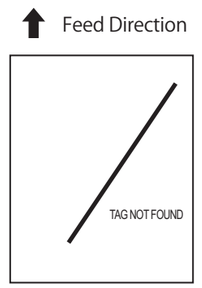
A) Recommended no-print zone

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

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

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