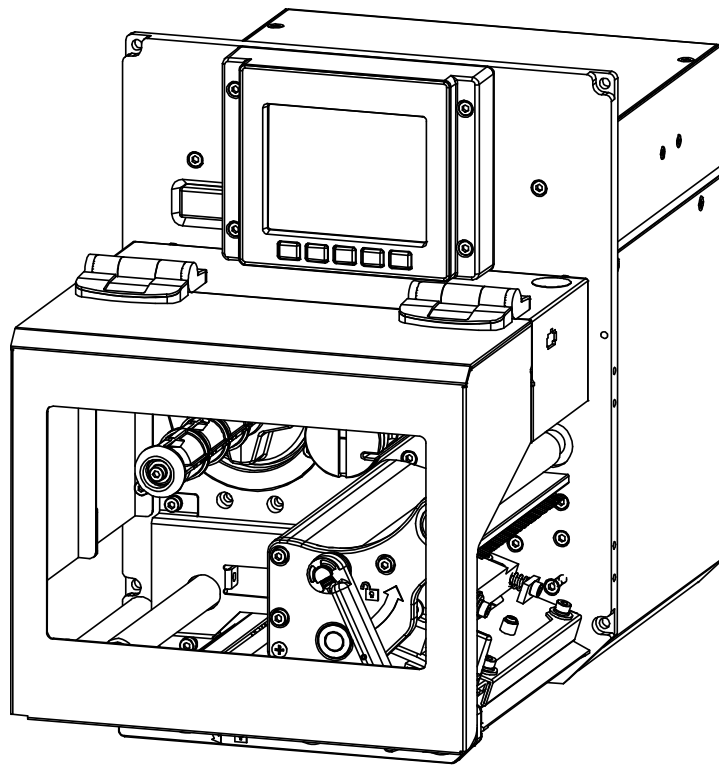# A-Class™ *Mark II*

RFID Quick Start Guide ■ ■ ■

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This guide presents a systematic overview of important media requirements, setup options, and modes of use for A-Class *Mark II* RFID-equipped printers.
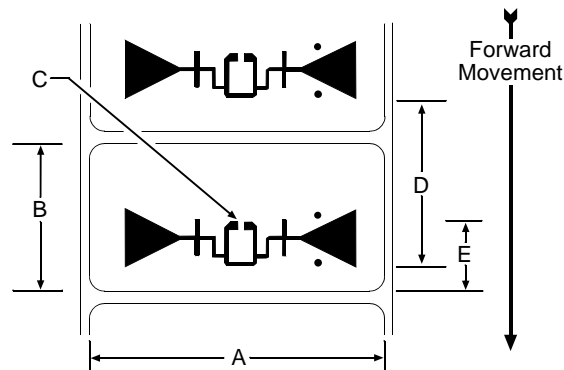
> ☑ **Note:** To use the RFID option, the printer's firmware version must be 12.03 or greater. Downloads can be found at ftp://ftp.datamax-oneil.com/Printer Firmware.

(((•))) Step 1: Know the RFID Media

Ensure that your UHF RFID media meets the following specifications:

Smart Label and Tag Requirements [1]
Layout

Definitions [2]			
Designator	**Description**	**Dimension (inches)**	**Dimension (millimeters)**
A	Label Width	4.00	101.6
B	Label Lengths	2.00, 4.00, & 6.00	50.8, 101.6, & 152.4
C	Chip Location Tolerance	± 0.05	± 1.3
D	Label Pitch (minimum)	1.70	57.2
E	Chip Inlay Location	1.10	27.9

[1] See the *Operator's Manual* for additional standard media requirements.

[2] Definitions referenced while looking down onto the labeling side of the media, and from the leading edge of the label (or tag) in the print direction.

> ☑ **Note:** If you have questions regarding media selection, contact a Datamax-O'Neil Media Representative at (407) 523-5650.

((•)) Step 2: Know the Printer

For ease of use, the following RFID factory default settings can be modified directly from the printer's front panel:

- RFID POSITION = 1.10
- TAG TYPE = GEN 2
- TAG DATA SIZE = 96-BIT
- RETRY ATTEMPTS = 3

For example, to change the factory defaults using the front panel, press the **MENU Key**:

Then use the ↓ **Key** to scroll to **PRINTER OPTIONS**, and press the **ENTER Key**:

Next, select the factory default setting to be modified (for example, RETRY ATTEMPTS):

1) Use the ↓ or the ↑ **Keys** to scroll to **RFID** then press the **ENTER Key**.

2) Use the ↓ or the ↑ **Keys** to scroll to **RETRY ATTEMPTS** then press the **ENTER Key**.

3) Use the ↓ or the ↑ **Keys** to enter the desired number of attempts then press the **ENTER Key**.

4) Press the **ESC Key** and, at the **SAVE CHANGES** prompt, answer **YES** to complete the setup.

☑ **Notes:** (1) If the display indicates NOT INSTALLED after selecting RFID, then the device is not equipped or not communicating with the printer.

(2) For User Interface details, see the *Operator's Manual.*

(3) To restore factory defaults, select SET DEFAULTS in the RFID options menu.

As a final note on default settings, encoded RFID data can be exported to a host device (with proper cabling) by enabling OPTION FEEDBACK. The data is contained in the format <A;B;C;D;E;F>[CR] where:

A -	Is the device type: R = RFID; and, S = Linear Scanner.
B -	Is the resulting status: C = entire label complete; F = faulted (failed) label; and, U = unknown.
C -	Is the number of expected reads for bar codes or tags, given in two characters.
D -	Is the number of good reads for bar codes or tags, given in two characters.
E -	Is the printer's internal Job and Sub Job Identifier, given in four characters each.
F -	Is the data that was read, delimited with semicolons (;) on multiple reads.

To enable **OPTION FEEDBACK**, proceed as follows:

1) Press the **MENU Key**.

2) Use the ↓ or the ↑ **Keys** to scroll to **COMMUNICATIONS** then press the **ENTER Key**.

3) Use the ↓ or the ↑ **Keys** to scroll to **HOST SETTINGS** then press the **ENTER Key**.

4) Use the ↓ or the ↑ **Keys** to scroll to **OPTION FEEDBACK** then press the **ENTER Key**.

5) Use the ↓ or the ↑ **Keys** to select the desired output format (**RFID HEX** or **RFID ASCII**) then press the **ENTER Key**.

6) Press the **ESC Key** and, at the **SAVE CHANGES** prompt, answer **YES** to complete the setup.

((•)) Step 3: Calibrate the RFID Tag

To establish the critical tag to transducer distance setting and nominal power requirements, the printer features two different RFID tag calibration methods: Quick and Standard. As shown below, while the amount of operator interaction differs, both calibration methods accomplish the same result. Before calibrating for the RFID tag, ensure the following:

1) That RFID media has been loaded;

2) That the printer's media sensor has been calibrated for the RFID media; and,

3) That the RFID Option has been enabled in the **PRINTER OPTIONS** menu. (Consult the *Operator's Manual* for details on these procedures and settings.)

To calibrate the RFID Tags, choose your method then execute the steps accordingly, as explained below:

- *To perform the Quick RFID Tag Calibration –*

    With the printer at READY, simultaneously press both the **FEED Key** and the **TEST Key**.

- *To perform the Standard RFID Tag Calibration –*

    1) Press the **MENU Key** then scroll to **PRINTER OPTIONS** and press the **ENTER Key**.

    2) Scroll to **RFID** then press the **ENTER Key**.

    3) Scroll to **PERFORM CALIBRATION** then press the **ENTER Key**.

Using either method, you will be prompted to **PERFORM CALIBRATION?** Selecting **YES** at the prompt will start the two-part calibration process (while selecting **NO** will exit this menu).

If **YES** was selected, **CALIBRATING RFID** will be displayed as the media advances to begin tag location scanning. Once this location is established, power calibration begins. (Wait briefly while these processes finish.)

Upon completion, the printer will retract the media to the TOF position, update its database information, and display the RFID position and power results (along with a brief SUCCESS or FAILURE message).

Step 4: RFID Programming Modes

The printer features two different operational modes for RFID tag programming:

- **Direct Mode** allows the user (Host) to control the reading and writing of the RFID tag directly. Containing both a generic read/write interface and a high-level tag UHF-specific interface, each RFID tag is individually processed with status and data responses.

- **Label Formatting Mode** utilizes the current printer configuration to process all the reads, write, and exception processing for each tag printed. (For exception processing and fault handling details, see the *Operator's Manual.*) The specification for the RFID operation is contained in the data fields of a DPL label format, instructing the printer to write data, read data, and update selective fields prior to printing the label. This mode supports automatic increment and decrement commands for numeric, alphanumeric, or hexadecimal.

☑ **Notes:** (1) Both programming modes will auto-position the label to the RFID tag location.

(2) Reference the *Class Series Programmer's Manual* for detailed RFID programming information.

Diagnostics

The following features can be found in the printer's User Menu under DIAGNOSTICS. (From DIAGNOSTICS go to OPTIONS TESTING, then TEST RFID, and finally TEST UHF.)

☑ **Note:** If, upon selection, the RFID module is not equipped or is not communicating with the printer, the display will indicate NOT INSTALLED. In this case, go to PRINTER OPTIONS / MODE and ensure that the option is enabled.

- TAG DATA – This acts as an RFID reader, allowing the printer to read and display the data. If the tag cannot be found after ten tries, the message CANNOT READ RFID TAG will be displayed.

- DEVICE VERSION – This queries then displays the serial number and the firmware version of the RFID programming device, and is useful for verifying proper device communication with the printer.