AN14769

UCODE X memory configuration setup for TSC Auto ID Printer with Nicelabel/ Loftware

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Document information

Information	Content
Keywords	UCODE X, memory configuration, TSC Auto ID Printer, Nicelabel/Loftware
Abstract	This document explains how to setup UCODE X memory configuration on TSC Auto ID Printer using Nicelabel/Loftware.

1 TSC Auto ID commands for UCODE X configuration change

UCODE X has six different memory configurations that a user can choose from. Multiple memory options enable tag functionality to be tailored for specific use cases and applications. These options help users strike the right balance between EPC/UII size and available user memory .

Table 1. UCODE memory configuration (1)

Configuration	EPC memory	User memory	Access Password	Kill Password	Permalock	Lock	Untraceable
Default	128 bits	0 bits	Yes	Yes	Yes	Yes	Yes
Config 2	160 bits	0 bits	Yes	No	Yes	Yes	Yes
Config 3	208 bits	0 bits	No	No	Yes	No	No
Config 4	96 bits	32 bits	Yes	Yes	Yes	Yes	Yes
Config 5	128 bits	32 bits	Yes	No	Yes	Yes	Yes
Config 6	176 bits	32 bits	No	No	Yes	No	No

Memory configurations can be changed by writing into the chip config word, which is located in Memory Bank ‘10’ (TID memory), starting at bit address 0x70h (word count 7). In order to make a change in the config word, a standard “WRITE” command can be used.

TSC PGL command:

PGL has a specific command line to change memory configuration for UCODE X. The command is as follows:

RFWTAG;16;7;TID

16;H;*XXXX*

STOP

Where RFWTAG represents initiating a write command in Hexadecimal format at word 7 in the TID location of the chip where XXXX represents the equivalent hex decimal input needed for the desired memory configuration

Table 2. UCODE memory configuration (2)

EPC	User memory	Access Password disabled	Kill Password disabled	User memory disabled	PGL corresponding command
128 bits	0 bits	0	0	1	16;H;*0001*
160 bits	0 bits	0	1	1	16;H;*0003*
208 bits	0 bits	1	1	1	16;H;*0007*
96 bits	32 bits	0	0	0	16;H;*0000*
128 bits	32 bits	0	1	0	16;H;*0002*
176 bits	32 bits	1	1	0	16;H;*0006*

2 How to change UCODE X memory configuration through Nicelabel software

This chapter provides a detailed, step-by-step procedure on how to change UCODE X configuration through TSC RFID printer using Nicelabel software

1. First user need to make sure about firmware version is updated as it should not be old since older version does not support writing to TID user can check firmware version by using the info option and checking the Program file value (For example if with T800 printer software version P301798 or P301821 user should be good) otherwise user can always download latest firmware from TSC download section online.
2. To create a custom font (which you can name **UCODE X**), begin by accessing the printer settings.
   - Open **Devices and Printers** on your computer.
   - Right-click your printer and select **Printer Properties**.

   A new window will appear similar to the one shown below. For our example, we are using the **T820** model for testing purposes.

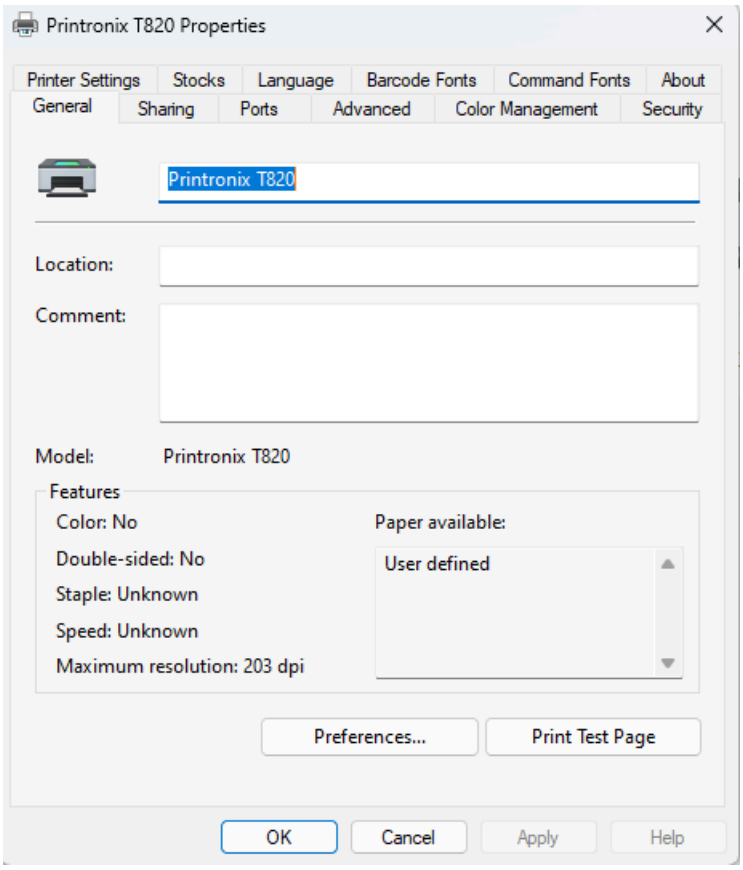

Figure 1. Printer Properties

3. Select the **Custom Fonts** option, then click **New** to create a new custom command, as shown below.

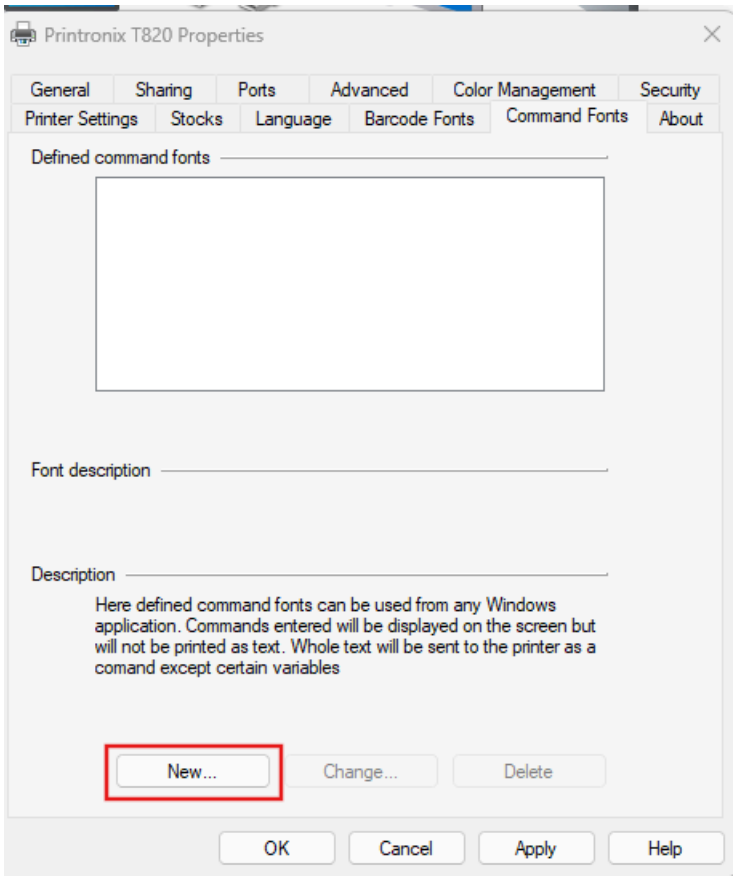

Figure 2. Custom Fonts

4. After creating the new custom command, user can assign it any name you prefer. In this example, we have named the command font **UCODE X**. Next, set the **Suffix** option to **Parsed Text**, and enter the following value in the **Data** field:
   \n
   Refer to the image below for visual guidance.

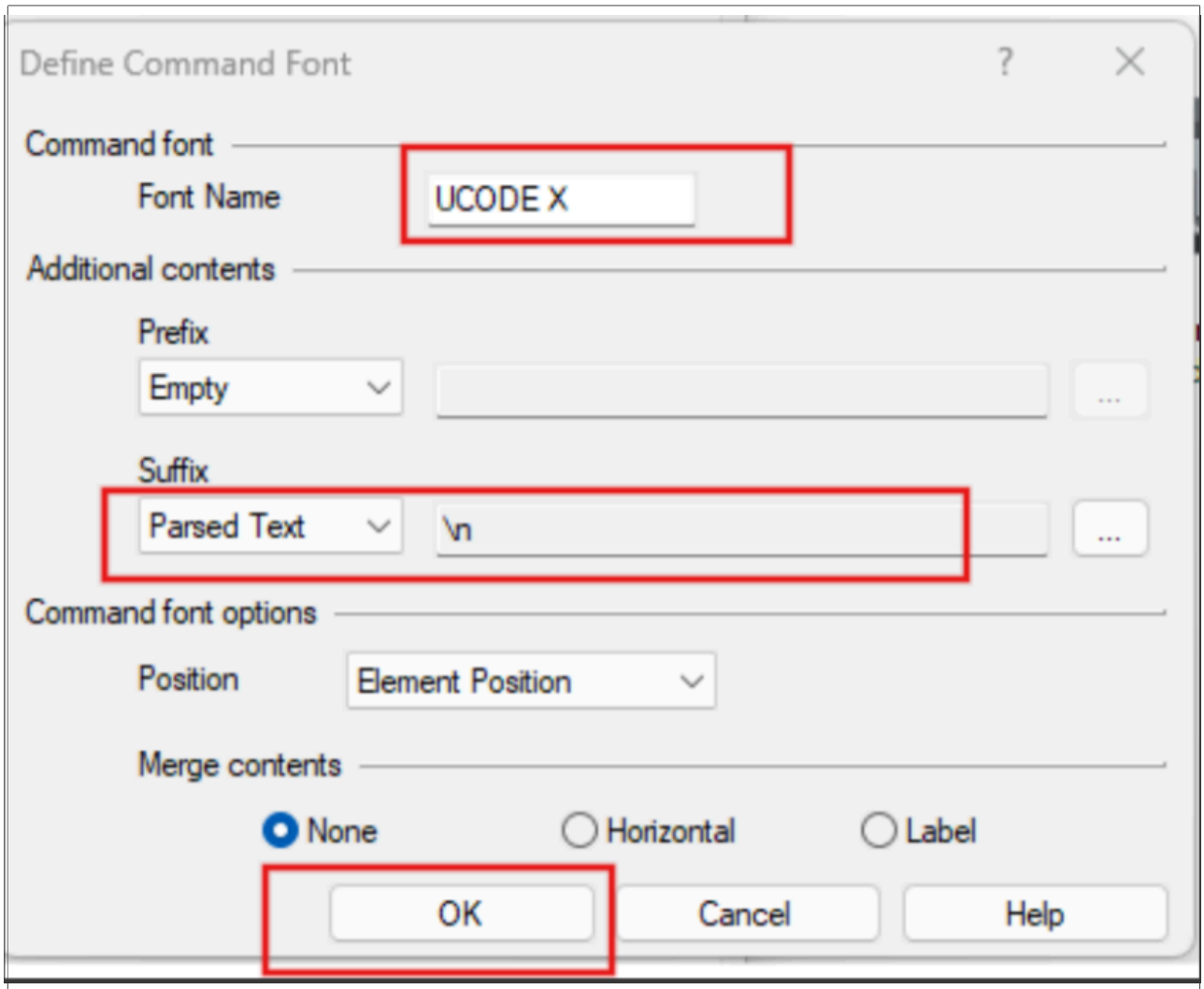

Figure 3. Define Command Font

5. This completes the setup of the custom command named **UCODE X**. To confirm that it has been created correctly, the **Command Font** section should now appear as shown below.

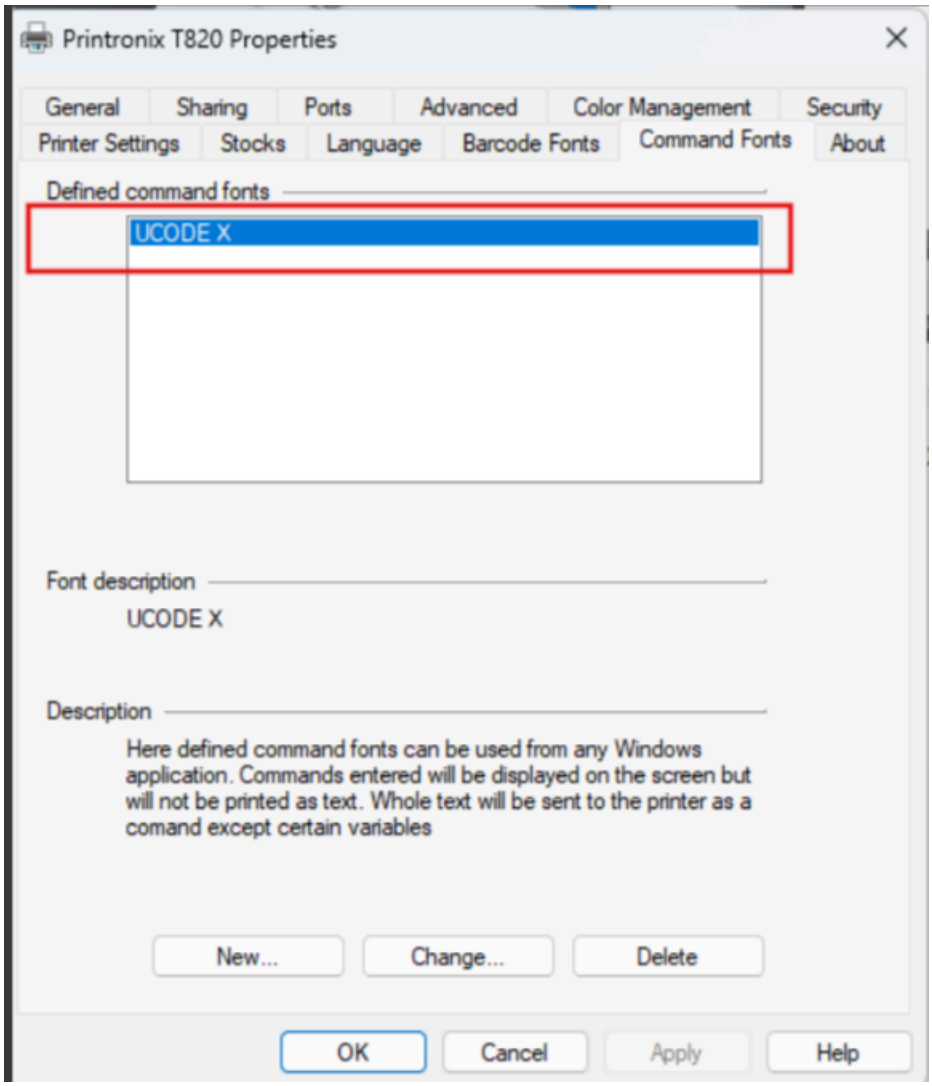

Figure 4. Defined command fonts

6. Open Loftware designer and in your font section your newly made custom font should be available for use as shown below

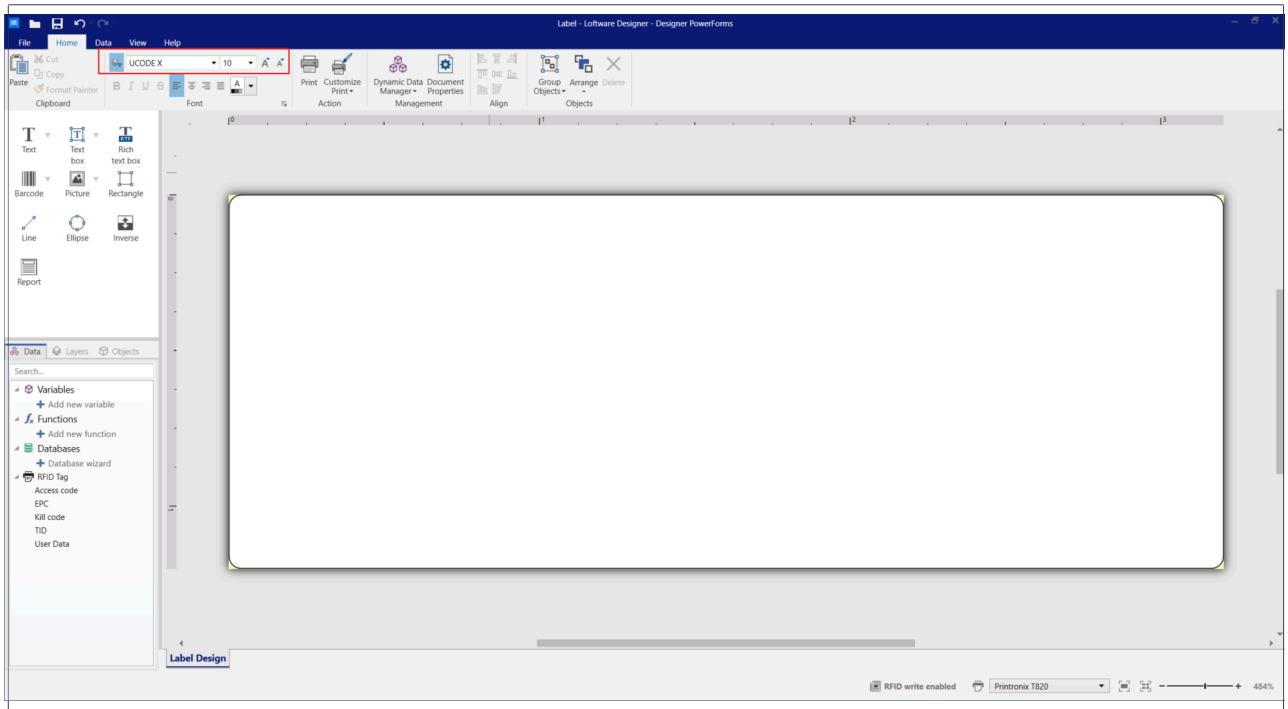

Figure 5. Loftware

7. Create a text box and then write the PGL command for memory configuration change as shown

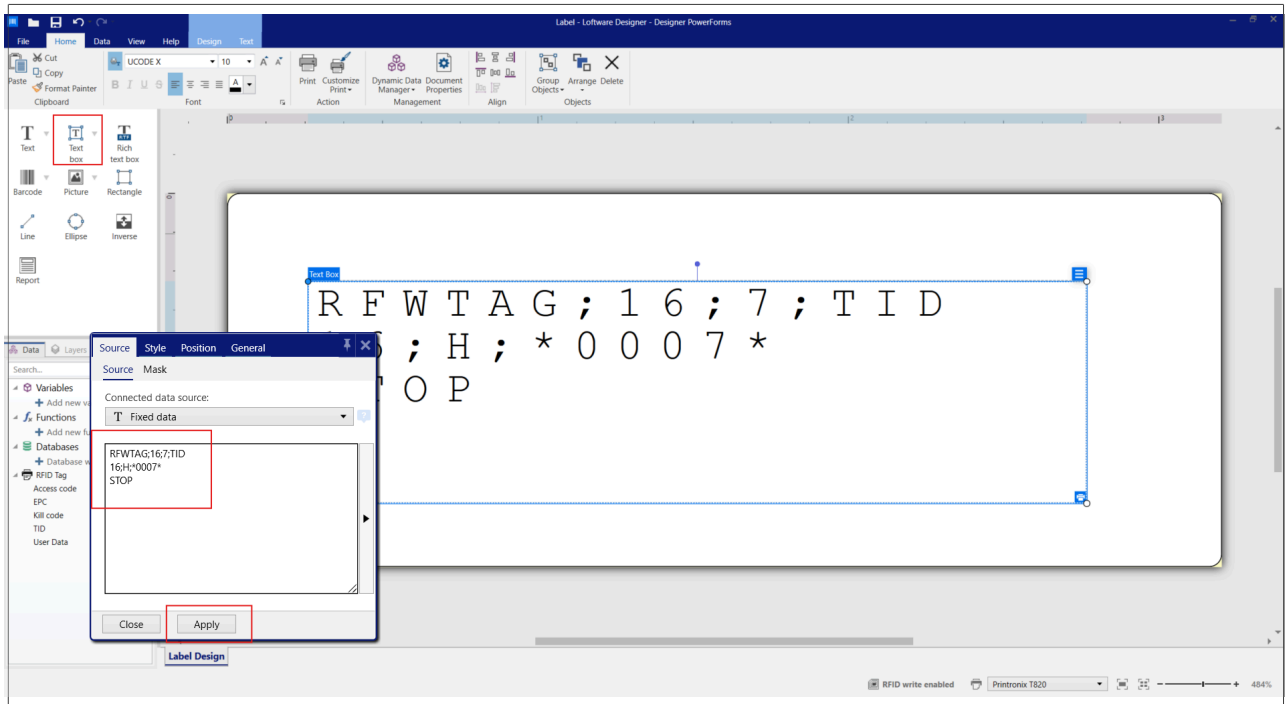

Figure 6. PGL command

8. User can also verify print to file code line of printer to see if that commands got executed

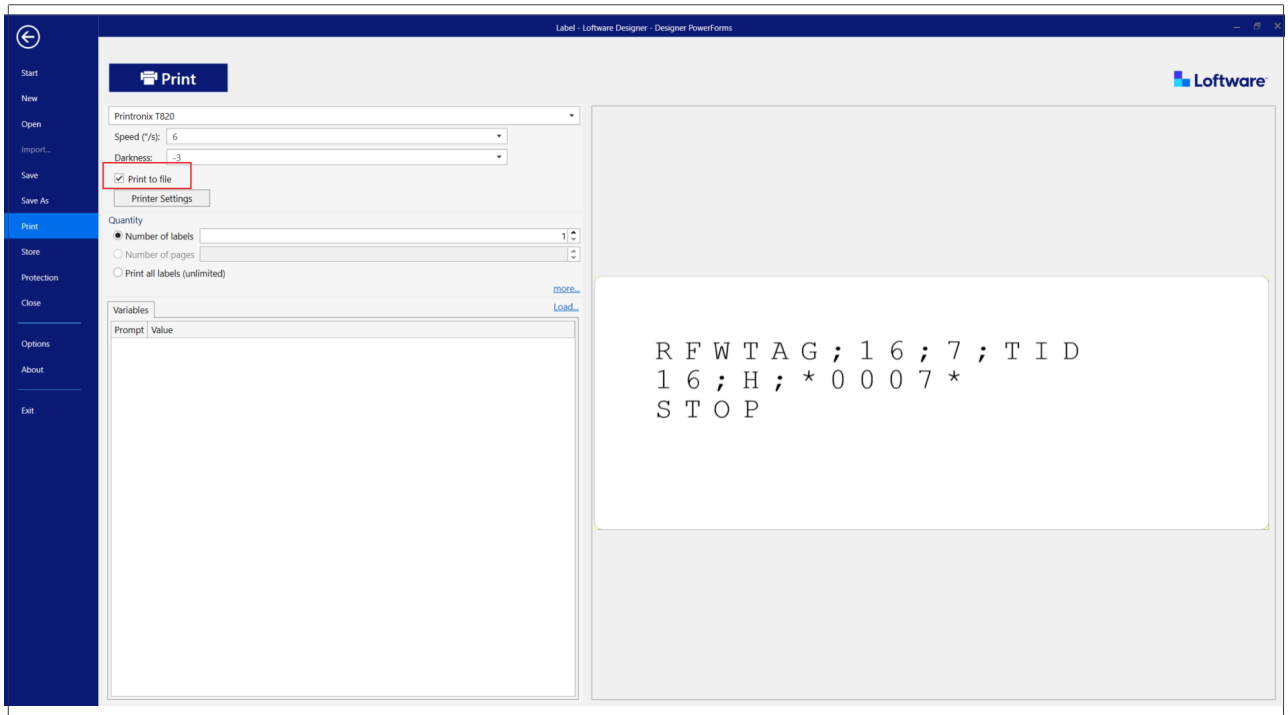

Figure 7. Verify print to file code

Print to file code line should be as below

!PTX_SETUP
RFID-SET_LABELRETRY;3
RFID-SET_ERRHANDLE;RFID_ERR_NONE
ENGINE-IMAGE_SHFT_H;0
ENGINE-IMAGE_SHFT_V;0
ENGINE-WIDTH;03280.
PTX_END
~NORMAL
~PIOFF
~DELETE LOGO;*ALL
~PAPER;INTENSITY -3;MEDIA 1;FEED SHIFT 0;CUT 0;PAUSE 0;TYPE 0;LABELS 2;SPEED IPS 6;SLEW IPS 6
~CREATE;FRM;86
SCALE;DOT;203;203
RFWTAG;16;7;TID
16;H;*0007*
STOP
END
~EXECUTE;FRM
~REPEAT;1
~NORMAL

3 Contact

For questions, reach out to: https://community.nxp.com/.

4 Revision history

Table 3. Revision history

Document ID	Release date	Description
AN14769 v.1.1	18 June 2026	Editorial changes. Document title updated to "UCODE X memory configuration setup for TSC Auto ID Printer with Nicelabel/ Loftware"
AN14769 v.1.0	15 June 2026	Initial version

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