

**Wrenchman, Inc.**

**10K122 Interface  
for  
2127 POS Printer Replacement**

**Installation and Setup Guide**

**Preliminary  
Documentation**

October 11, 2004

## Introduction

The Wrenchman 10K122 interface enables the use of an IBM 4610 thermal printer (models TI1, TI2, TI3 & TI4) with the NCR 2127 POS system.

### Advantages

- Electronic Journal <sup>1</sup>
- MICR capability <sup>2</sup>
- Printing of Graphic Store Logos on the receipt
- Easier receipt paper loading
- Faster and quieter printing
- Lower maintenance costs

## Installation and Setup

### Setup of the IBM 4610 printer

- Unpack the printer and accessories.
- Locate the “Installation Instructions” Chapter 1 in the “*User’s Guide*” <sup>3</sup> and follow the steps to setup and install the printer. <sup>4</sup>
- Verify that the settings on the printer DIP switches are the same as below. <sup>5</sup>

DIP switch 1 set to ON, for 19200 Baud Rate

DIP switch 2 set to OFF, for DTR/DSR control

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<sup>1</sup> The 10K122 interface has Flash memory to support Electronic Journal, when using the IBM 4610 printer.

<sup>2</sup> Enabled by the Dumac or Vesper 2127 register user exit.

<sup>3</sup> IBM’s 4610 printer “*User’s Guides*” are available online at [www.ibm.com](http://www.ibm.com).

<sup>4</sup> Power the printer up and check that the printer’s green light by the back receipt feed button is ON.

<sup>5</sup> See the “RS232 Communication Mode Selections” section in “Installation Instructions” chapter 1, pages 25 and 26 in the “*User’s Guide*”, *Fifth Edition*, September 2000, to change settings. Incorrect settings will result in unpredictable printing and operation.

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- With the printer powered on and with receipt paper in the printer, press and hold the two paper feed buttons for five seconds until the light next to the receipt feed button starts to blink.
- Release the two buttons and then press the receipt feed button. A form should print on the receipt like the one shown below.
- Verify that the serial interface settings on that form are as shown below.

```

The Printers S/N is **-*****
Microcode EC Level is **
Serial Interface:      RS232
                      19.2 K Baud, DTR/DSR
***** (receipt character set) *****
*****
*****
*****
*****
*****
*****

```

### Loading Logos into the IBM 4610

- Locate a PC with a free COM port and a floppy drive.
- Connect the IBM 4610 printer to the free COM port on the PC with the included 6ft straight through serial extension cable, power up the printer, and insert the floppy labeled “IBM 4610 Logo Utility” into the floppy drive and reboot the PC. In the root level of the floppy disk there is a file called “Readme2nd” that includes the instructions for using this utility. Please refer to section 4 of that document for instructions on logo loading and file structure for logos.

### 10K122 Interface Connections

The 10K122 interface consists of electronics enclosed in a small plastic case with two cable assemblies.

#### NCR 2127 register connection

- The connector<sup>6</sup> on the 10K122 interface single cable assembly plugs into a mating connector on NCR 2127. Connect to any of the six available mating sockets on the back panel of the register.

See the attached 2127 Register Back View picture (on page 17)

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<sup>6</sup> A Compu-shield, Series 31, 15 position plug is on the 10K122 interface single cable assembly.

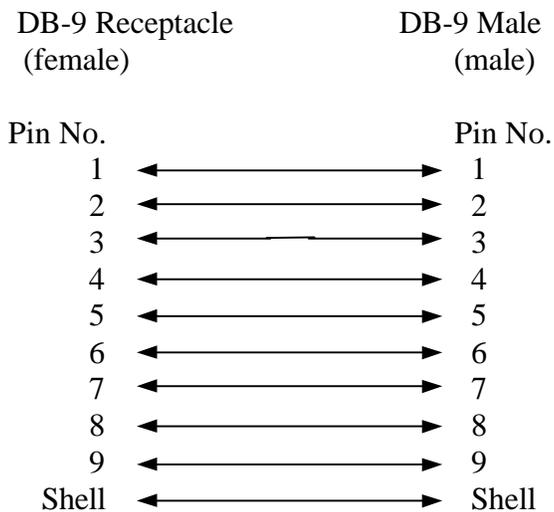
## IBM printer connection

- Screw the DB9-M connector on the 10K122 “Y” or dual cable assembly to the mating DB9-F connector on the supplied 6ft extension printer cable.<sup>7</sup>
- Securely attach the DB9-M connector on the free end of the 6ft extension cable to the printer’s RS232 communications connector. See IBM’s printer “*User’s Guide*” page 14.

If the 6ft supplied cable is not available, a cable wired as below will work.<sup>8</sup>

### Cable

10K122 interface to IBM 4610 printer



### Optional MICR connection

- Connect the Wrenchman 10K96 MICR cable DB9-M connector to the DB9-F connector on the 10K122 “Y” or dual cable assembly.<sup>9</sup>
- Connect the other end of the 10K96 cable, a JAE dual row 14 position connector, to the mating connector on the 2127 register that the Check MICR reader was using.  
If MICR was not in use, connect the 10K96 cable to either mating 14 position connector on the 2127 register’s OCRS 1 board.

See the attached photographs for illustrations of the proper connections to the 10K122 interface and the 2127 register (on page 17).

<sup>7</sup> Only one of the connectors, a DB9-M on this cable assembly will mate with the female connector on the 6 ft extension cable.

<sup>8</sup> This is the typical pin-out of a standard “Straight Through, 1 to 1” serial extension cable sold at computer stores.

<sup>9</sup> The 10K96 cable will mate with only one of the connectors on the assembly.

## **Setup the 2127 register to support the 10K122 interface**

Several of the 2127 configuration parameters and Machine Definition Codes must be set to specific values for the 10K122 interface to operate optimally.

The user should possess an understanding of the procedures to configure the 2127 register.

The 2127 manuals, "*Action Code Entries*", "*Parameter Entry*", and "*Machine Definition Codes*" provide information to set 2127 register configuration parameters and describes their function.

All numeric values are entered with the number keys for the steps below.

### **Set the 2127 register to use a multifunction printer.**

- Place the keylock in the "Super" position and hold down the P1 key<sup>10</sup> during power-up of the 2127 register.
- Type 2127 when prompted for the Access Number and press the Enter key.
- Type 3 to access Menu Data
- Type 2 to access the Peripheral Menu
- Scroll to menu items by pressing the P1 key.
- Set printer 1 to a "YES" and printers 2 and 3 to "NO" using the P2 key<sup>11</sup>.
- Press the P3 key<sup>12</sup> to exit the Peripheral Menu.
- Reset the 2127 register by pressing the "1" key twice. The display will show a line of "D"s with indicators.

### **Changing Machine Definition Code Values**

- Log out all cashiers.
- Turn the keylock to the "Prog" position.
- Enter your Secret Number when prompted, followed by the P2 key.
- At the Enter Program Number prompt, enter 1 and press the P1 key.

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<sup>10</sup> The P1 key is the bottom key in the column of keys to the right of the numeric keypad.

<sup>11</sup> The P2 key is the bottom key in the column of keys to the left of the numeric keypad.

<sup>12</sup> The P3 key is directly to the left of the "7" key on the numeric keypad.

- Enter 89 when prompted for the Report or Address of the Machine Definition Code, followed by the P2 key.

Changing the value for address 89 permits zero price PLU's required for configuring the 10K122 interface. Restore this setting to the original value after the 10K122 interface is configured by following the procedure in this section.

- Enter the value for the corresponding displayed address, given in the table below, followed by the P1 key.

The address is automatically incremented.

- Press the P2 key several times to increment the address to 103.

Follow the procedure in the step above to set the values for the addresses in the table below.

- After entering the new value for the addresses below, press the P1 key to finalize.

The 2127 will return to the Enter Program Number prompt.

### The Machine Definition Codes and Values

Machine Definition Code (Address)	Value
89	xx1x
103	0000
104	0xx0
105	1000
106	xxx0

x = the value's digit remains the same, as shown on the display for the corresponding address.

### Adjust Receipt Format

Changing Program 18 values will adjust the 2127 register receipt formatting options to match those needed by the IBM printer for optimal printing.

There are many settings in the 2127 register that can affect receipt appearance and print positioning. They allow the receipt appearance to be tailored to individual preferences. See the three 2127 register manuals mentioned above for more detail on receipt customization.

- At the Enter Program Number prompt, enter 18 and press the P1 key.
- Enter a 1 when prompted for the Report or Address, followed by the P2 key.

- Enter the value for Program 18 addresses in the table below, followed by the P1 key.

The program address will increment by one.

- Repeat the above step until all values in the table below are entered.
- After all 18 values have been entered, press the P1 Key.

The 2127 register will return to the Enter Program Number prompt.

### Program 18 Addresses and Values

Address	Value
1	1
2	1
3	1
4	1
5	2
6	2
7	2
8	8
9	12
10	8
11	10
12	1
13	0
14	0
15	0
16	0
17	-11 *
18	0

\* Negative values are entered by pressing the P4 key before entering the value.

The P4 key is located to the right of the “9” key on the numeric key pad.

### Customize the 10K122 Interface

The 10K122 interface is customized with special PLU items. The items are entered into the 2127 using PLU maintenance files.

The 2127 Add and Delete maintenance files along with the 10K122 interface PLU Configuration scan tags are available online at [www.wrenchman.com/products](http://www.wrenchman.com/products).

These PLU item UPC numbers were reserved by Wrenchman, Inc. from the Uniform Code Council and will never appear on any item in a store.

- If not already received on floppy disks, copy and unzip the add and delete PLU maintenance files onto separate PC formatted diskettes.

### **Add Procedure**

- Place the add disk into the drive on the 2127 register and turn the keylock to the "Super" position.
- Enter your Supervisor Number followed by the Enter key.
- At the Enter Action Code prompt enter 65
- Enter file number 1 and press the Enter key.
- Enter selection code 1 and press the Enter key twice.
- At the Enter Action Code prompt enter 56.
- Enter file number 1 and press the Enter key.
- Enter device 1 followed by the Enter key.
- Press the Enter key again.

The disk drive should go active and load the file into the 2127.

- Enter 60 when prompted for an action code.
- Enter a 1 for the file number and press the Enter key.
- Enter a 1 for the selection code followed by the Enter key.
- Press the Enter key again.

The 2127 should indicate MMM communications and the printer should print a message showing "27 applied 0 failed".

Repeat the process under the Add Procedure for the second add batch file. The 2127 printout should print a message showing "11 applied 0 Failed"

### **Create Department 100**

If "Dept Not Found" or a related message appeared when the last step above was performed or when the configuration labels are entered in the next section, then Department 100 will have to be temporarily created. Follow the next steps to do this:

- At the Enter Action Code prompt, enter 113.

- Enter 100 when prompted for the Department Number
- Press the Enter key twice to finalize the setting.

A report should print indicating that a department was created.

### **Delete Procedure**

The procedure to delete these PLU items from the 2127 follows the same procedure except the delete floppy is used instead of the add floppy.

### **MICR Feature Option**

If the MICR feature is to be used, information about the MICR user exit configuration will need to be known before setting the 10K122 interface options.

- At the Enter Action Code prompt, enter 260.
- Scroll to address 14 by pressing the P1 key.
- Note the value of the first digit in the four digit number shown.

If the first digit is 0, use the “Format Dumac Short” tag for the 10K122 configuration.

If the first digit is 1, use the “Format Dumac Long” tag for the 10K122 configuration.

- Press the P2 key to exit Action Code 260
- Turn the keylock back to the “Reg” position and log in a cashier allowing transaction items to be entered.

### **Set the 10K122 Interface Options**

See the options in the section below.

- The 10K122 options can now be set by scanning the supplied bar codes.
- If the 2127 register does not have a scanner, manually enter the bar code PLU numbers via the keyboard.

## **Configure and Customize the 10K122 Interface**

There are 37 option and command items that can be set or controlled. See the following table.

The normal procedures to ring up an item also apply to these configuration items.

The configuration items are zero priced, so store totals will not be altered.

Scanning a tag or entering the respective UPC item number will cause the 10K122 interface to perform the indicated action.

The first five, the “Save Configuration” tag, and the last configuration item in the table below are action items and do not set a configuration parameter. They perform the indicated action immediately.

The remaining items set configuration parameters. Except for the Quickset tags, they require the Save Configuration Tag to be entered directly after entering the configuration item tag(s).

If the Save Configuration Tag is not used, the entered configuration parameter(s) will be valid only until the next power cycle at which point the cable will revert to the last saved settings.

**10K122 Interface Configuration Item Tag Table**

<b>Item</b>	<b>PLU No.</b>	<b>Description</b>
Print Config Report	66394700101	Prints a receipt with the current 10K122 interface saved settings..
Print EJ Report	66394700102	Prints a receipt with the electronic journal total capacity and the amount of that capacity that is used.
Print EJ Data	66394700103	Prints the contents of the electronic journal and leaves the journal data intact.
Print and Erase EJ	66394700104	Prints the contents of the electronic journal and then erase the journal data.
Erase EJ Data	66394700105	This tag will erase the contents of the electronic journal without printing it. <b>Once the data is erased, there is no way to recover it.</b>
EJ Data Storage ON	66394700106	Enables the electronic journal function.
EJ data Storage OFF	66394700107	Disables the electronic journal function.
J View Key ON	66394700108	Enables the journal view feature.
J View Key OFF	66394700109	Disables the journal view feature.
S Key Erase ON	66394700110	Enables the printing and erasing of journal data with the supervisor key.
S Key Erase off	66394700111	Disables the printing and erasing of journal data with the supervisor key.
P Key Erase ON	66394700112	Enables the printing and erasing of journal data with the programmers key.
P Key Erase OFF	66394700113	Disables the printing and erasing of journal data with the programmers key.
MICR Reader ON	66394700114	Enables the MICR functionality. This function also requires the Dumac or Vesper MICR user exit be installed and configured for MICR to operate correctly.
MICR Reader OFF	66394700115	Disables MICR functionality.
Format Dumac or Vesper Long	66394700116	Adjusts the MICR data sent to the register to match the Dumac or Vesper user exit long format setting.
Format Dumac or Vesper Short	66394700117	Adjusts the MICR data sent to the register to match the Dumac or Vesper user exit short format setting.
Power up Message ON	66394700118	Enables the 10K122 firmware information printout when the 2127 register is powered on, the cable is inserted into a powered 2127 register, or when the printer power is cycled.

## 10K122 Interface Configuration Item Tag Table

Continued

Item	PLU No.	Description
Power up Message OFF	66394700119	Disables the 10K122 firmware information printout when the 2127 register is powered on, the cable is inserted into a powered 2127 register, or when the printer power is cycled.
-	66394700120	Reserved, Not Used
Load Configuration	66394700121	Loads the configuration values stored in the cable and activates them.
Quickset Defaults	66394700122	Sets all the configuration parameters to their default settings. These settings are: Electronic Journal Disabled Power-up Report Enabled MICR Reader Disabled
Quickset 1	66394700123	Sets all the configuration parameters to values for electronic journal but not MICR. These settings are: Electronic Journal Enabled S Key Journal Erase Disabled P Key Journal Erase Enabled Journal Report Key Enabled Power-up Report Enabled MICR Reader Disabled
Quickset 2	66394700124	Sets all the configuration parameters to values for MICR but not electronic journal. These settings are: Electronic Journal Disabled Power-up Report Enabled MICR Reader Enabled MICR Data Format Long
Quickset 3	66394700125	Sets all the configuration parameters to values for MICR and electronic journal. These settings are: Electronic Journal Enabled S Key Journal Erase Disabled P Key Journal Erase Enabled Journal Report Key Enabled Power-up Report Enabled MICR Reader Enabled MICR Data Format Long
Save Configuration	66394700126	Saves all the currently set configuration parameters in permanent memory and resets the cable. <sup>13</sup>

<sup>13</sup> The Save Configuration Tag applies to configuration items 106 through 119 and 160 through 169 in the Configuration Item Tag Table. The numbers are the last three digits of the item.

## 10K122 Interface Configuration Item Tag Table

**Continued**

Item	PLU No.	Description
No Logo	66394700160	Disables the printing of the logo at the top of the receipt
Use Logo 1	66394700161	Selects logo 1 stored in the printer for the logo printout at the top of the receipt.
Use Logo 2	66394700162	Selects logo 2 stored in the printer for the logo printout at the top of the receipt.
Use Logo 3	66394700163	Selects logo 3 stored in the printer for the logo printout at the top of the receipt.
Use Logo 4	66394700164	Selects logo 4 stored in the printer for the logo printout at the top of the receipt.
Use Logo 5	66394700165	Selects logo 5 stored in the printer for the logo printout at the top of the receipt.
Use Logo 6	66394700166	Selects logo 6 stored in the printer for the logo printout at the top of the receipt.
Use Logo 7	66394700167	Selects logo 7 stored in the printer for the logo printout at the top of the receipt.
Use Logo 8	66394700168	Selects logo 8 stored in the printer for the logo printout at the top of the receipt.
Use Logo 9	66394700169	Selects logo 9 stored in the printer for the logo printout at the top of the receipt.
Reload	66394700197	Reloads the custom 2127 character set into the printer. Use this tag when unusual characters show up on the receipt or slip.

### Electronic Journal Operation

#### Print a Electronic Journal capacity report

- Scan or enter the PLU number of the "Print EJ Report" configuration tag.

The EJ report will also print out at power-on and whenever the new settings are stored in the 10K122 interface.

### **Print recent Electronic Journal transaction data**

- If enabled via the “J View Key ON” function, make sure that the keylock is in the “Reg” position and press the journal feed key.

The printer will print out a copy of the electronic journal data of the last transaction. If more data is needed, each press of the journal feed key will move back one transaction in the journal storage from the last journal transaction printed and print that transaction. To finalize the journal view printout, the receipt feed key can be pressed.

### **Print and erase Journal data**

- If enabled via the "S Key Erase ON" function, turn the keylock to the "Super" position and press the journal feed key.
- If set via the "P Key Erase ON" function, turn the keylock to the "Prog" position and press the journal feed key.
- Scan the "Print and Erase EJ" tag or enter the respective PLU number.

If the above procedures do not work, verify that the associated function is enabled by looking at the report produced from scanning the "Print Config Report" tag or entering the associated PLU number.

### **Erase the Journal data**

- Scan the "Erase EJ Data" tag or enter the associated PLU number.

### **Print the Journal data without erasing**

- Scan the "Print EJ Data" tag or enter the associated PLU number

### **Read MICR data from a check**

- Place the check in the printer and press the "Clear" key on the keyboard when the "Enter Acct. #" shows after ringing a transaction with a check tender.

## **Electronic Journal Maintenance**

### **Printing**

The 10K122 interface will post a message when its EJ capacity is almost full. Journal data will be lost if the Journal is not serviced at this time.

It is recommended that the amount of EJ data in the 10K122 interface or in the printer be monitored on a regular basis so it doesn't reach capacity and lose EJ data. Printing the EJ data on a regular basis will lessen the time that the register is unavailable, due to printing large amounts of EJ data.

### **Security**

Varying security levels to the EJ data can be accomplished in several ways. This permits different security configurations on each register.

Disabling the configuration PLU's that erase or print and erase EJ from the PLU database or controlling possession of the configuration tags will prevent any cashier without a Supervisor or Program key from erasing the EJ data.

Disabling the Supervisor key function with the S Key Erase OFF configuration tag will only allow someone with a program key (generally unavailable to anyone except management and technical personel) to erase EJ data.

### **FAQ's**

What if the Printer doesn't print at all or a W5244 or W5245 error shows on the register?

- Check that the printer is powered. A green light, located on the top of the printer next to the receipt feed button should be ON.
- Verify that the printer configuration settings are as outlined in the "Setup of the IBM 4610 printer" section above.
- Check that the 6ft extension cable or compatible RS232 straight through cable is connected between the printer and the 10K122 interface.
- Check that the 10K122 interface is securely plugged into one of the mating ports on the back of the 2127 register. It should be latched into the receptacle connector.

What if the printer line spacing, knife cut, or other print formatting is off?

- Verify the Machine Definition Codes and Program 18 settings are as outlined in the sections above.

**There are many settings in the 2127 register that can affect receipt appearance and print positioning and can be tailored to individual preferences. See the three 2127 manuals mentioned above for more detail on the possible customization that can be performed to alter the appearance of the receipt.**

What if MICR does not operate?

- Check that the 10K96 cable is connected to the 10K122 interface and is in the correct port on the 2127 register. Try the other RS232 port on the 2127 OCRS board if the first is nonfunctional.
- Check the 10K122 MICR reader setting to verify that it is enabled and the Dumac or Vesper or Vesper Format setting is properly set for your system configuration.

Contact Dumac or Vesper at 315-463-1010 or Vesper Software at 877-478-2127 if you have questions concerning MICR settings on the 2127 register.

What if the EJ function appears not to operate?

- Check that the 10K122 EJ Data Storage setting is enabled and that the desired access method for printing and erasing the EJ data is enabled.

What if the error “W5250” shows up on the display during slip printing operations?

Reinsert the slip into the printer to let the printer finish its printing and then press the clear key to eliminate the error. The cause of this error is most likely due to the slip being placed in the document station crooked and thus uncovering one of the paper insert sensors before the printer has finished printing the slip. Always place the slip snug up to the right side of the document station in the printer before sliding it into the printer.

What if the green light by the document feed button is blinking?

This light, when blinking, indicates that the printer has slip data that needs to be or remains to be printed and can not be printed. This is most likely due to either there is no slip present or the slip is not properly inserted or positioned.

- Please insert the slip in the proper fashion to continue printing.

