

# Setup Documentation for the Zebra<sup>®</sup> HC100<sup>™</sup> Printer in a MEDITECH Environment

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### Setup Documentation for the HC100 Armband Printer in a Meditech Environment

# **Topics**

- 1. Setting Up the HC100 Printer on Your Network
- 2. Changing the Default Administration Password
- 3. Defining the Printers IP Address in Meditech
- 4. Setting Up the Printer Destination for Meditech
- 5. Uploading the Armband Formats to Meditech
- 6. Printing an Armband
- 7. Editing the Armband Formats to include or disable specific information
- 8. Setting up the HC100 Printer on a Desktop PC (Optional Configuration)

Configuring the HC100 Printer for Meditech takes special advantage of the technical features in the printer itself. Because all of the font symbologies required to generate 1D and 2D Barcodes are built into the printer, you do not need special drivers or software to create barcoded output. You can send text to the printer directly with the commands necessary to format the data in a barcode.

# **HC100 Printer Initial Setup**

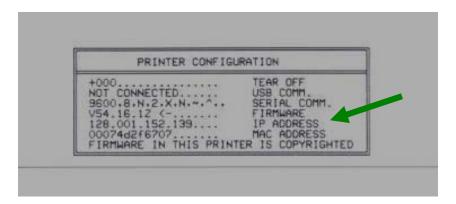
The HC 100 network capable printer is equipped with DHCP and can download an IP Address from your network if that functionality is enabled.

Plug the HC100 into your network and power it on. Within two minutes, the device should have downloaded a valid IP Address.

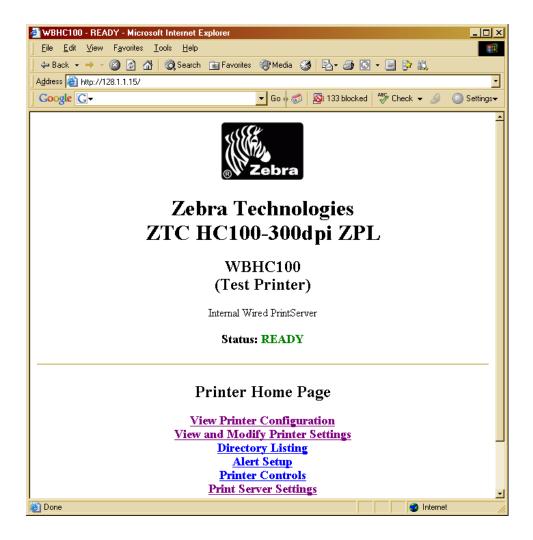
To determine the printer's address, print a test label. Hold down the Pause / Feed Button on the printer until it blinks orange once and then release.



An armband will print with the unit's IP Address shown.



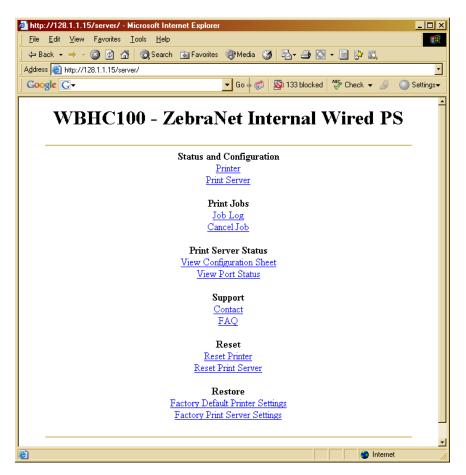
This Label will include the downloaded IP Address. You can then browse to the printer to set up the necessary administrative data with your default web browser.



The DEFAULT ADMIN PASSWORD is <u>1234</u>. This should be updated / changed after the printer is on your network.

# **Changing the Unit's Password**

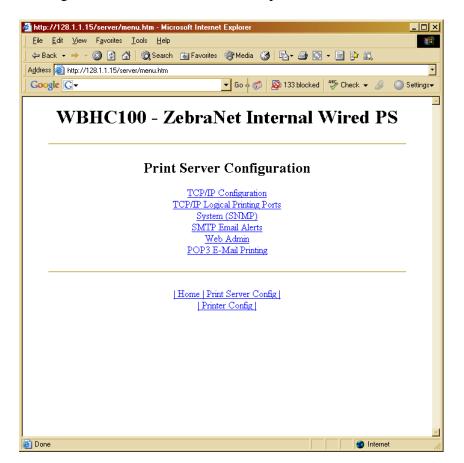
1. Go to the print server settings page.



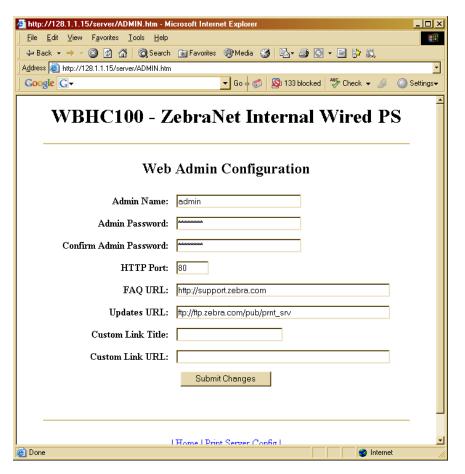
2. Select Print Server.



3. Log in as ADMIN with the default password of 1234.



4. Select Web Admin to configure password.

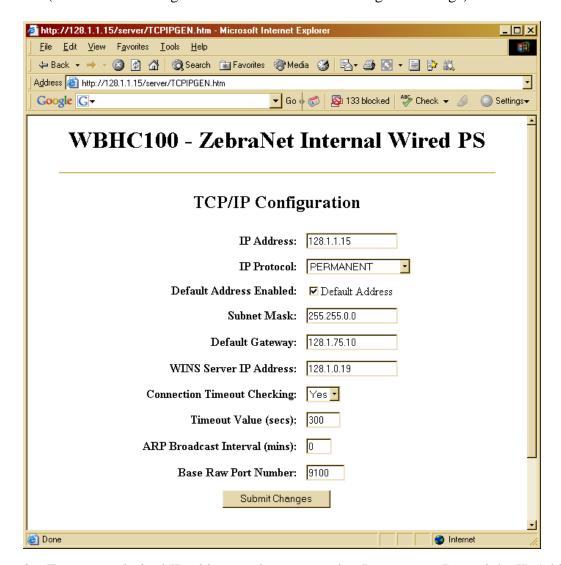


Configure your Password on this page and document it accordingly. If you ever lose your password, you can reset the printer to factory defaults to regain admin access to the console.

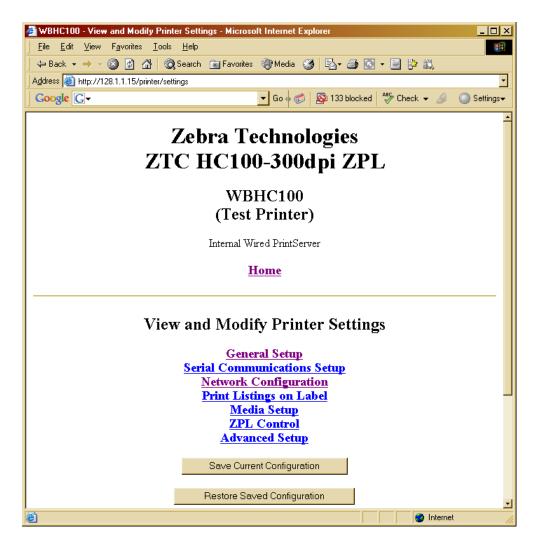
# Setting up the TCP/IP Address for Meditech

The Meditech Environment requires a fixed IP address that it can transmit the printer data to.

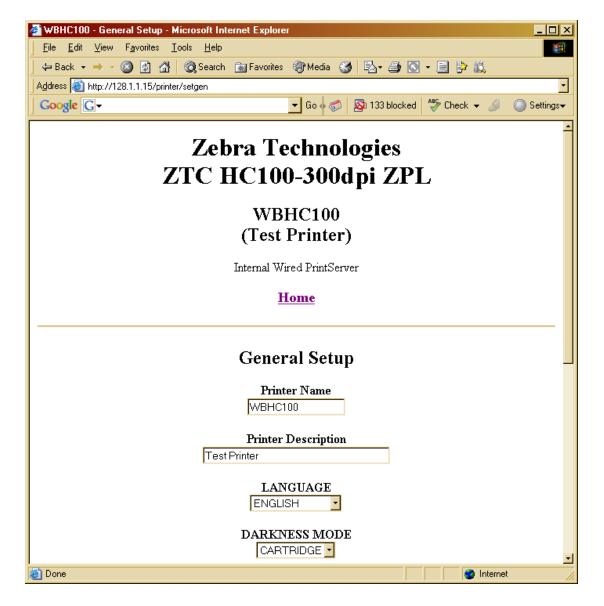
1. From the Administration Menu of the HC100, select TCP/IP Configuration... (Print Server Settings / Print Server / TCP/IP Configuration Page)



- 2. Enter your desired IP address and set protocol to Permanent. Record the IP Address for later setup in Meditech.
- 3. Return to the Admin page and select the General Setup page.



4. Choose General Setup



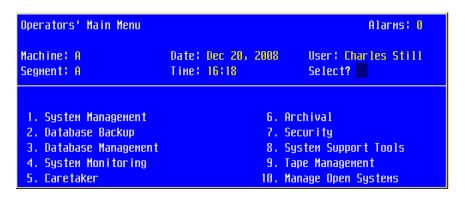
You can modify DNS Name on this screen. For ease of maintenance and administration, you can set your DNS Name to the Meditech Print Queue Name.

5. Be sure to return, save, and submit your updates to the printer for them to take effect.

After you have configured your printer with a fixed IP Address, you are ready to set it up in Meditech.

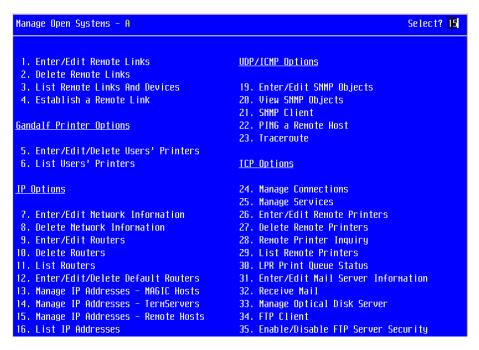
# Meditech Magic Setup and Configuration of the HC100 Armband Printer

- 1. Log in to Meditech with an Administrative User ID.
- 2. Go to the EXT.OPS Menu where you will define the Printer IP Address and Printer Name.

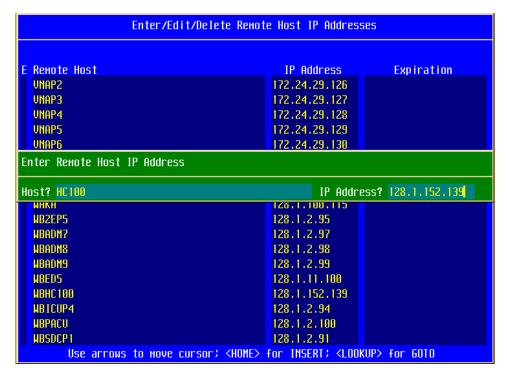


3. On this menu, select #10. "Manage Open Systems."

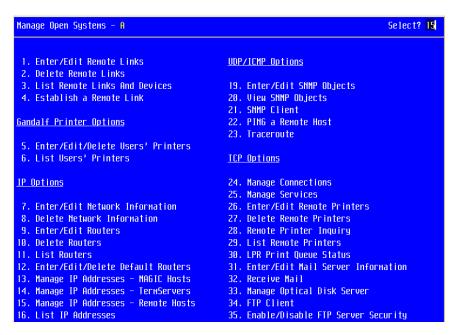
Please note these are default Meditech Menus, and they may have been changed in your host system for the specific ID you are using to log in.



4. From the Open Systems Menu, select # 15. "Manage IP Addresses – Remote Hosts".



- 5. Press the right CTRL key to Insert a New Record. Enter the HOST (Printer) Name and IP Address you previously recorded from the HC100.
- 6. Save the Entry (F12) and return to the previous menu.



7. On this menu, choose #26. "Enter/Edit Remote Printers."



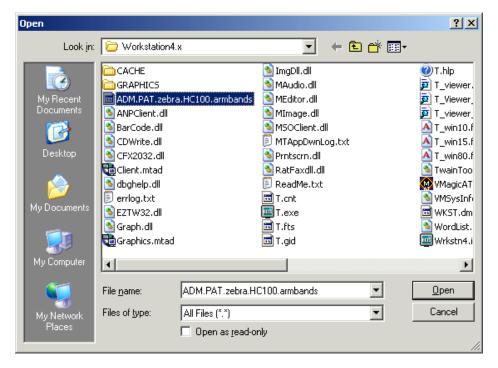
8. Enter the Printer Name you intend to use in Meditech Applications. Leave the "Model?" Field **Blank**. There is no specific printer driver necessary to use with the HC100 Armband Printer.

The Remote Host and Remote Name field can be defined as the name you gave your printer in the Open Systems Menu.

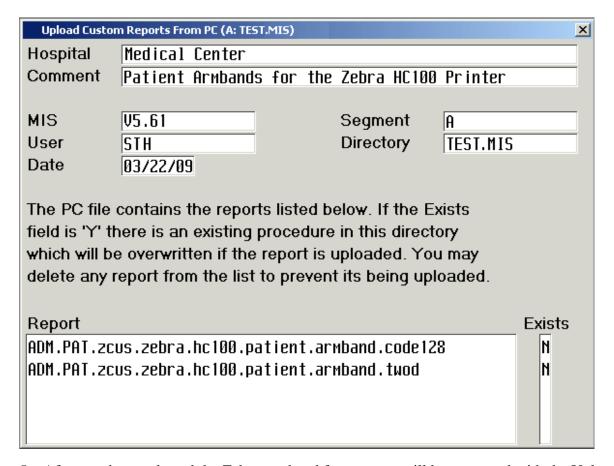
After you have entered the information on this screen, your printer is ready to use.

# **Uploading the Zebra Printer Armband Formats to Meditech.**

- 1. Download the Zebra Armband formats to your local PC.
- 2. Log in to your TEST Meditech Environment NPR Menu.
- 3. Select "Upload Reports from PC".



4. Select the ADM.PAT.zebra.HC100.armbands file from the directory that you downloaded it to.



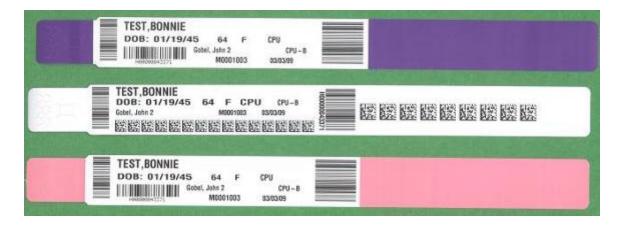
5. After you have selected the Zebra armband format, you will be presented with the Upload Reports screen. Press F12 to process and answer Yes to File.

You can enter 0 at the "Print On" and "Translate" prompts to have the upload results printed to your screen.

The NPR Report Formats will upload to your ADM.PAT DPM automatically.

After you have completed editing and testing your reports, you can copy them to your live clinical environment. It is always advisable to test new reports in your test environment.

### The Reports:



The ADM.PAT.zebra.HC100.armbands file contains two NPR Reports.

The zcus.zebra.hc100.patient.armband.code128 format incorporates three Code 128 Barcodes for Scanning; two are printed ladder style across vertically on the armband. These reports are designed to work with the ZEBRA Armband Material Main Part Number 10006995.

## The Armband contains the following Sample Fields:

Patient Name: Test, Bonnie DOB: 01/19/45

Age: 64
Sex: F
Wing: CPU
Bed: CPU-B
MR#: M0001003
H#: H00000043371

Attending

Physician: Gobel, John 2 Admit Date 03/03/09

# **Printing the Armband to your Printer**

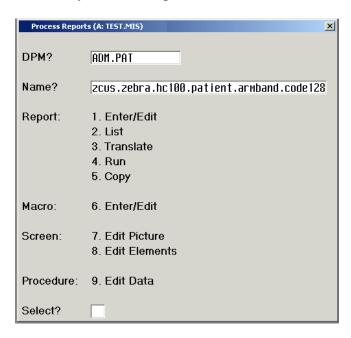
After you have uploaded and translated the report to your Test Environment, you are ready to validate that everything is working correctly. From your NPR Reports Menu, choose "Process" to Print or Edit the Zebra Armband. Choose Option "4. Run" to print.

You will be prompted for your Organization, a Patient Name and finally the Printer Destination you defined earlier.

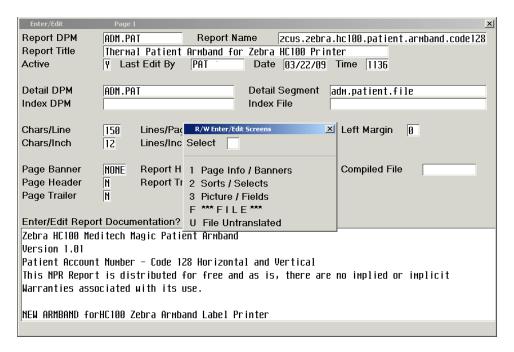
# Editing the Armband Formats to include or disable specific information.

Please note, you will need familiarity with the Meditech NPR Report Writer Product to complete these editing steps.

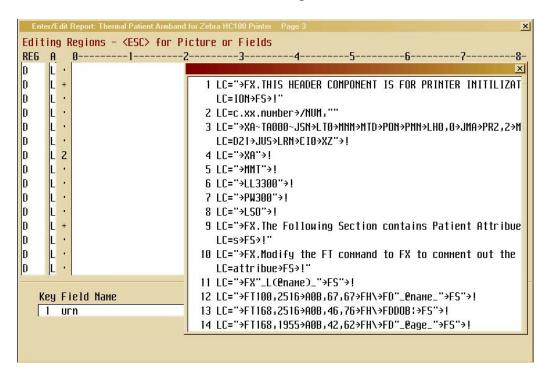
1. From your NPR Reports Menu, choose "Process" to run or edit the Zebra Armband



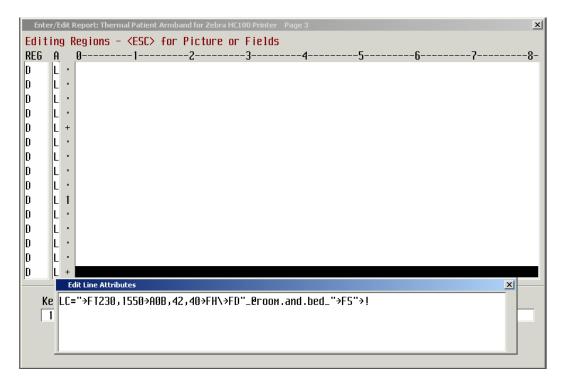
2. Choose Option "1. Enter/Edit" to update or review the report.



3. Select "#3 Picture / Fields" to edit the report.



4. To correctly pass the necessary control codes to the printer, the report detail is stored as a line check in the NPR Reports Regions area. Pressing CTRL+F3 will list the entire report on screen. To edit a specific line, press the F3 key by itself.



5. To comment out a line so that it does not print, edit the Line Check and change the first command after the Esc Code to FX. In the example shown above, the command string is LC="^FT230,1550^...." By changing the "FT" to "FX", the line will be considered a non printable comment by the printer, and it will no longer appear on the patient armband.

Any of the fields can be edited in this manner.

# Listing of fields for Code 128 Version Armband

Bolded Fields are the Meditech Data Elements Selected for that field.

```
1 LC="^FX.THIS HEADER COMPONENT IS FOR PRINTER INITILIZAT
  LC=ION^FS^!"
 2 LC=c.xx.number^/NUM,""
 3 LC="^XA~TA000~JSN^LTO^MNM^MTD^PON^PMN^LH0,0^JMA^PR2,2^M
  LC=D21^JUS^LRN^CIO^XZ"^!
 4 LC="^XA"^!
 5 LC="^MMT"^!
 6 LC="^LL3300"^!
 7 LC="^PW300"^!
 8 LC="^LSO"^!
9 LC="^FX.The Following Section contains Patient Attributes^FS^!"
10 LC="^FX.Modify the FT command to FX to comment out the
  LC=attribute^FS^!"
11 LC="^FX"_L(@name)_"^FS"^!
12 LC="^FT100,2516^A0B,67,67^FH\^FD"_@name_"^FS"^!
13 LC="^FT168,2516^A0B,46,76^FH\^FDDOB:^FS"^!
14 LC="^FT168,1955^A0B,42,62^FH\^FD"_@age_"^FS"^!
15 LC="^FT230,1550^A0B,42,40^FH\^FD"_@room.and.bed_"^FS"^!
16 LC="^FT230,2100^A0B,42,40^FH\^FD"_@attend.doctor.name_"
  LC=^FS"^!
17 LC="^FT168,1814^A0B,42,62^FH\^FD"_@sex_"^FS"^!
18 LC="^FT168,2337^A0B,46,76^FH\^FD"_%Z.date.text(@birthda
  LC=te, "N/D/y") "^FS"^!
19 LC="^FT290,1967^A0B,46,45^FH\^FD"_@unit.number_"^FS"^!
20 LC="^FX.The Following Section contains the Code 128 Bar
  LC=codes^FS^!"
21 LC="^BY2,3,102^FT280,2557^BCI,,N,N,N,A"^!
22 LC="^FD"_@acct.number_"^FS"^!
23 LC="^BY2,3,245^FT289,1088^BCI,,N,N,N,A"^!
24 LC="^FD"_@acct.number_"^FS"^!
25 LC="^BY3,3,73^FT270,2516^BCB,,Y,N,N,A"^!
26 LC="^FD" @acct.number "^FS"^!
27 LC="^FT290,1643^A0B,42,40^FH\^FD" %Z.date.text(@adm.svc
  LC=.res.date.out,"N/D/y") "^FS"^!
28 LC="^FT168,1659^A0B,46,45^FH\^FD"_@location_"^FS"^!
29 LC="^FX.Change the PO# in the next line to change the n
  LC=umber of armbands^FS^!"
30 LC="^PQ1,0,1,Y^XZ"^!
```

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#### Listing of Fields for Code 128 & 2D Data matrix Version

```
1 LC="^FX.THIS HEADER COMPONENT IS FOR PRINTER INITILIZAT
  LC=ION^FS^!"
 2 LC=c.xx.number^/NUM,""
 3 LC="^XA~TA000~JSN^LT0^MNM^MTD^PON^PMN^LH0,0^JMA^PR2,2^M
  LC=D21^JUS^LRN^CIO^XZ"^!
 4 LC="^XA"^!
 5 LC="^MMT"^!
 6 LC="^LL3300"^!
 7 LC="^PW300"^!
 8 LC="^LSO"^!
9 LC="^FX.The Following Section contains Patient Attributes_FS^!"
10 LC="^FT85,2516^A0B,67,67^FH\^FD"_@name_"^FS"^!
11 LC="^FT140,2516^A0B,46,76^FH\^FDDOB:^FS"^!
12 LC="^FT140,2000^A0B,46,76^FH\^FD"_@age_"^FS"^!
13 LC="^FT140,1865^A0B,46,76^FH\^FD"_@sex_"^FS"^!
14 LC="^FT140,2337^A0B,46,76^FH\^FD"_%Z.date.text(@birthda
  LC=te,"N/D/y")_"^FS"^!
15 LC="^FT200,2516^A0B,42,40^FH\^FD" @attend.doctor.name "
16 LC="^FT200,1900^A0B,42,40^FH\^FD" @unit.number "^FS"^!
17 LC="^FT58,1300^A0N,42,40^FH\^FD"_@acct.number_"^FS"^!
19 LC="^FT140,1550^A0B,42,40^FH\^FD"_@room.and.bed_"^FS"^!
22 LC="^FT200,1643^A0B,42,40^FH\^FD" %Z.date.text(@adm.svc
  LC=.res.date.out, "N/D/y")_"^FS"^!
23 LC="^FT140,1775^A0B,46,76^FH\^FD"_@location_"^FS"^!
24 LC="^FX.The Following Section contains the Code 128 + 2
  LC=D Barcodes^FS^!"
25 LC="^BY2,3,175^FT289,1088^BCI,,N,N,N,A^FD"_@acct.number_"^FS"^!
26 LC="^BY2,3,102^FT280,2557^BCI,,N,N,N,A^FD"_@acct.number_"^FS"^!
27 LC="^BY70,70^FT299,2520^BXB,5,200,0,0,1^FD" @acct.number "^FS"^!
29 LC="^BY70,70^FT299,2440^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
30 LC="^BY70,70^FT299,2360^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
31 LC="^BY70,70^FT299,2280^BXB,5,200,0,0,1^FD"_@acct.number_
32 LC="^BY70,70^FT299,2200^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
33 LC="^BY70,70^FT299,2120^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
34 LC="^BY70,70^FT299,2040^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
35 LC="^BY70,70^FT299,1960^BXB,5,200,0,0,1^FD" @acct.number "^FS"^!
36 LC="^BY70,70^FT299,1880^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
37 LC="^BY70,70^FT299,1800^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
38 LC="^BY70,70^FT299,1720^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
39 LC="^BY70,70^FT299,1640^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
40 LC="^BY70,70^FT299,1560^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
41 LC="^BY70,70^FT299,1480^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
42 LC="^BY70,70^FT299,1400^BXB,5,200,0,0,1^FD"_@acct.number_"^FS"^!
43 LC="^BY70,70^FT225,100^BXB,7,200,0,0,1^FD"_@acct.number_"^FS"^!
44 LC="^BY70,70^FT225,220^BXB,7,200,0,0,1^FD"_@acct.number_"^FS"^!
45 LC="^BY70,70^FT225,340^BXB,7,200,0,0,1^FD"_@acct.number_"^FS"^!
46 LC="^BY70,70^FT225,460^BXB,7,200,0,0,1^FD"_@acct.number_"^FS"^!
47 LC="^BY70,70^FT225,580^BXB,7,200,0,0,1^FD"_@acct.number_"^FS"^!
```

```
48 LC="^BY70,70^FT225,700^BXB,7,200,0,0,1^FD"_@acct.number_"^FS"^!
49 LC="^BY70,70^FT225,820^BXB,7,200,0,0,1^FD" @acct.number "^FS"^!
50 LC="^BY70,70^FT225,940^BXB,7,200,0,0,1^FD"_@acct.number_"^FS"^!
51 LC="^BY70,70^FT225,1060^BXB,7,200,0,0,1^FD"_@acct.number_"^FS"^!
52 LC="^FX.Change the PO# in the next line to change the n
  LC=umber of armbands^FS^!"
53 LC="^PQ1,0,1,Y^XZ"^!
```

#### **Brief Command Overview**

Much further detail is available in the Zebra ZPL II Programming Guide. Here is a quick look at a few commands.

The ^FT – Field Typeset Command sets general characteristics about the data being displayed. In the example below, we will identify each component of the Patient Name field.

#### Text Line:

```
^FT85,2516^A0B,67,67^FH\^FD" @name "^FS"^!
       ^FT = Field Typeset
       85,2516 = the X and Y Location in Dots Per Inch (DPI) on the label media.
       ^A = Specifies the Font to use in the Data Section
       0 = Internal Font to Use
       B = field orientation
       67,67 = Sets the Font Height and Width in DPI – you can modify this to change
              the sizing of the font.
       ^FH\ = Field Hexadecimal Indicator
       ^FD = Field Data
       ^FS = Field Separator or End
Barcode Code 128 Line:
```

```
^BY2,3,175^FT289,1088^BCI,,N,N,N,A^FD" @acct.number "^FS"^!
       ^BY2,3,175 = Modifies the default DPI values for barocode
       ^FT = Field Typeset
       289,1088 = the X and Y Location in Dots Per Inch (DPI) on the label media.
       ^BCI,,N,N,N,A = Generates the Code 128 Barcode – Setting the first N to
                            a Y ie(^BCI.,Y,N,N,A) Includes a Human Readable
                            font on the label.
       ^FD = Field Data, the @acct.number is the patient account #.
       ^FS = Field Separator or End
```

#### Barcode Datamatrix Line:

```
^BY70,70^FT225,220^BXB,7,200,0,0,1^FD"_@acct.number_"^FS"^!

^BY70,70 = Modifies the default DPI values for barocode
^FT = Field Typeset
225,220= the X and Y Location in Dots Per Inch (DPI) on the label media.
^BXB,7,200,0,0,1 = Generates the two-dimensional data matrix barcode format.

In this example the 7 sets the size of the barcode.
^FD = Field Data the @acct.number is the patient account #.
^FS = Field Separator or End
```

Please refer to the Zebra ZPL II Programming Guide for greater detail.

Note: To remove a field from printing, you can delete the line or replace the ^FT with ^FX making it a comment field.

# Printer Setup for Access E-Forms Setup or PC Workstation Setup

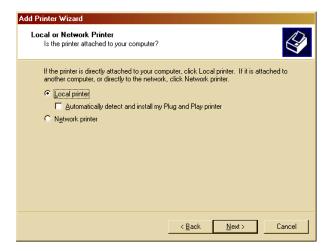
In the event that you are using the printer with other middleware products, you can set it up without a printer driver and pass the text strings of commands directly to the printer. This is helpful for sending printer commands directly to the printer without routing them through Meditech.

You will need to set up a Generic Text / Only Printer Driver on your system. Do not load the Zebra Windows Driver.

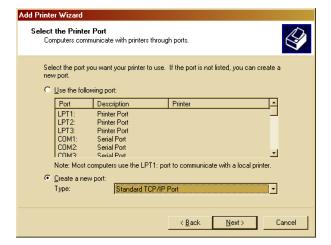
Adding Windows destination – Optional for testing.



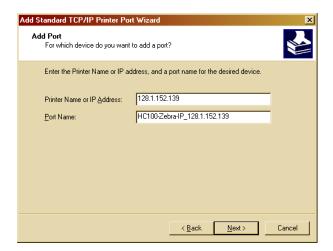
1. Click Next.



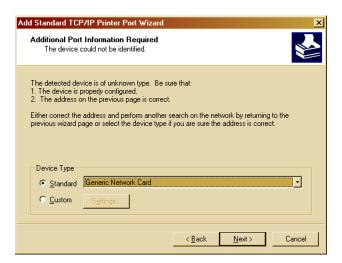
2. Choose Local printer.



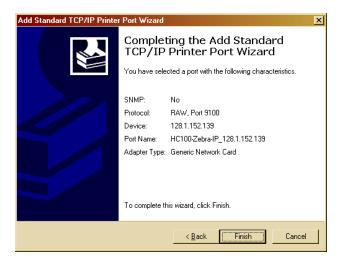
# 3. Create a new port.



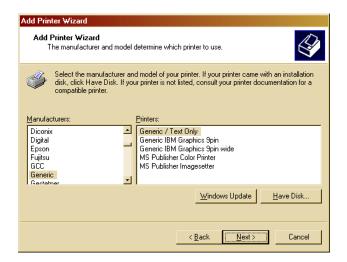
# 4. Identify your Printer IP Address.



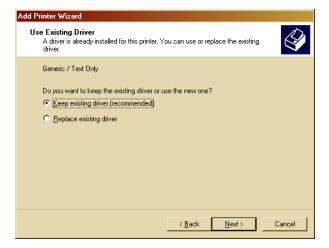
5. Choose Generic Network Card.



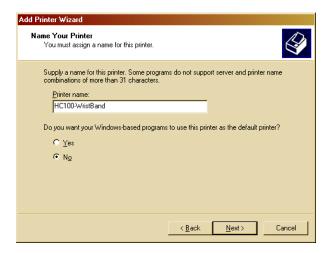
6. Confirm your settings before proceeding.



7. Choose the Generic / Text Only Driver

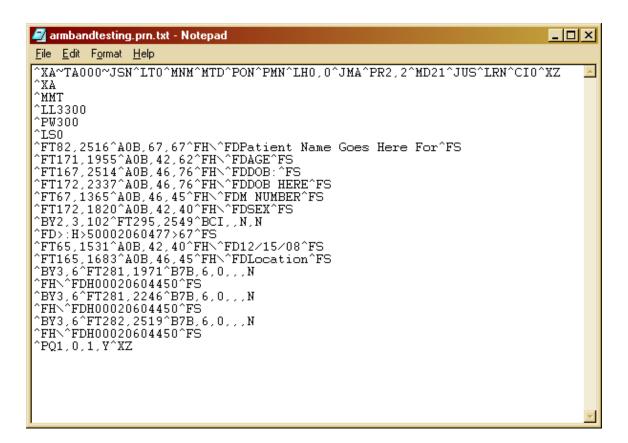


# 8. Keep Existing Driver.

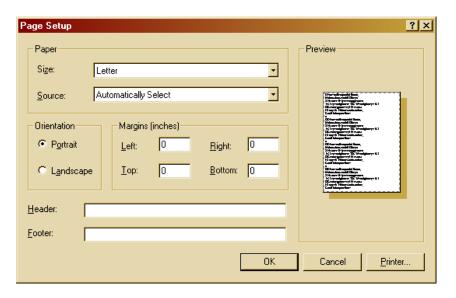


9. Specify your local printer name for the HC100 Printer.

After you have set up the Printer as a generic destination, you can use Windows Notepad to send commands directly to the printer and generate sample armbands or labels.



Be sure to remove any Margins and Clear Header and Footer Settings before sending the commands to the printer.



You can use the Zebra Designer software that comes with your printer to generate the text output files for your testing. By graphically designing your label and printing the commands to a file, you will automatically generate all of the printer initialization strings used to create the label.



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