

# MONARCHNET2™ OPERATING INSTRUCTIONS



TABLETOP PRINTER 1  
TABLETOP PRINTER 2

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# GETTING STARTED

# 1

Your Avery Dennison Monarch® Tabletop Printer 1 or Avery Dennison Monarch® Tabletop Printer 2 may contain a wireless module with MonarchNet2™ software. MonarchNet2 enables remote (Internet) access to configure and control your printers.

Refer to your network manuals for more information. This manual does not include information about setting up your wireless network.

## Audience

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This manual is written for the System Administrator who sets up printers on the network and is familiar with basic networking principles.

**Note:** Use this manual with printer firmware version 2.0 or greater.

## System Requirements

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To use the wireless module for printing from a wireless network, you need an 802.11a/b/g/n wireless network. The wireless network consists of either of the following:

- ◆ An 802.11a/b/g/n wireless-enabled computer printing straight to the printer (Ad-Hoc mode).
- ◆ An 802.11a/b/g/n wireless access point allowing wireless and wired Ethernet-enabled computers to print to the wireless module (infrastructure mode).

To configure and print, you need the following:

1. The MAC address from the label of the wireless module (for example: 004017023F96).

The Ethernet and wireless interfaces share the same MAC Address. When using DHCP, Ethernet and wireless will receive the same IP address from a DHCP server.

2. The following information from your wireless network administrator:
  - ◆ Wireless mode (infrastructure or Ad-Hoc).
  - ◆ The SSID (service set identifier) for your wireless network.
  - ◆ If you are using TCP/IP (recommended for Windows Networks) and are not connected to a DHCP server (for obtaining an IP address automatically), you need a unique IP address for the wireless module and a subnet mask. If the wireless module is not on the same IP subnet as the computers you are printing from, you need a router. A wireless module with an IP address of **192.0.xxx.xxx** will not be seen by a network looking for devices with a prefix of **10.1.xxx.xxx**. A router (default gateway) address is optional.
  - ◆ Wireless security settings.

# Specifications

---

**Link Layer:** 802.3 or optional 802.11a/b/g/n

**Protocols:** TCP/IP  
DHCP  
LPD/LPR  
Telnet  
RSH (remote shell)  
FTP

**802.3 Communication Rate:** 10 Mbps or 100 Mbps

**Frequency:** 2.4GHz and 5.0 GHz range

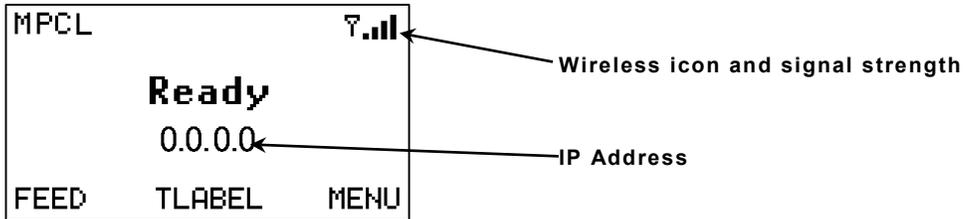
**Security:** None, WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise

**EAP Method:** EAP-FAST  
LEAP  
PEAP  
TLS  
TTLS

## Verifying a Wireless Connection

---

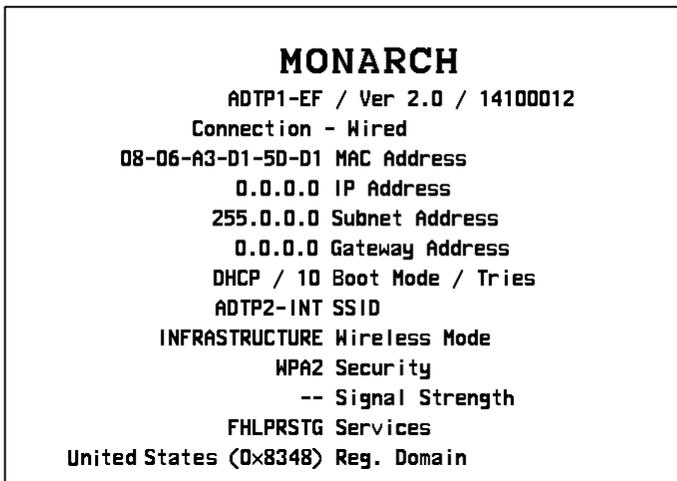
When the printer is turned on, the wireless module runs through a set of power-up diagnostics for a few seconds. Then the display shows the wireless connection icon, wireless connection signal strength, and your printer's IP (Internet Protocol) address.



## Printing a MonarchNet2 Test Label

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Press **TLABEL** and select *Mnet2 Label*:



# USING A WEB BROWSER

## 2

You can configure and manage the printer using a Web browser. Before you begin, you need to know your printer's IP address. The printer should be turned on and ready to receive data.

**Note:** The screens shown in this manual may not exactly match what you see.

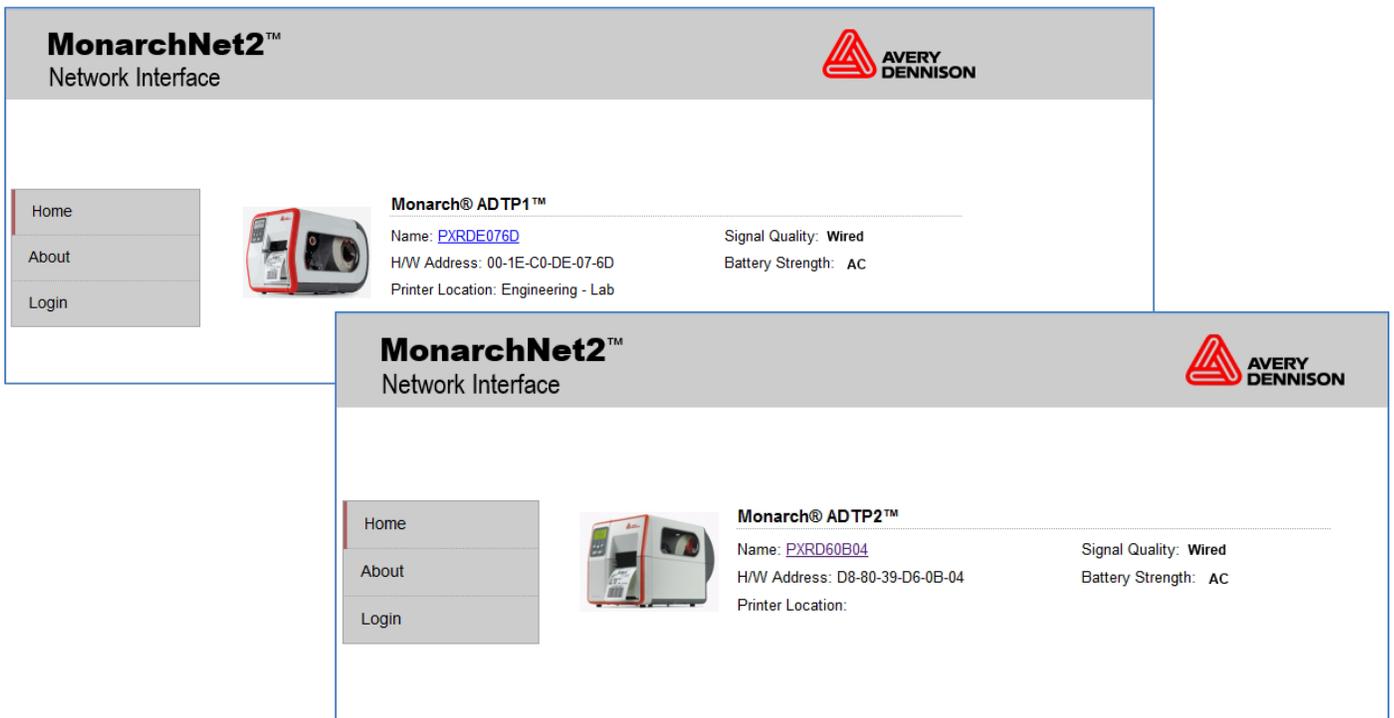
It may take about a minute, depending on network traffic, for the printer to connect to an access point. When the printer is connected and ready to receive data you see:



The printer's display shows the antenna symbol when the printer is connected and ready to receive data.

## Logging In

1. Start your Web browser.
2. Type in your printer's IP address and press **Enter**.



If the printer is experiencing a ribbon or supply problem, the icon for Printer Status appears with a red background.

If the printer has a wireless connection, the signal strength icon appears.

The power status shows AC or DC (using a Mobile Work Station) depending on your connection.

3. Click **Log In** or the printer's name (for example: PXRDE076D).

4. Type **access** for the password and click **Submit**. You do not need a user name. The password is case-sensitive and saved in the printer's flash memory. See "[Changing the Password](#)" to change the password.

The screenshot shows the 'Administrator Logon' page of the MonarchNet2 Network Interface. The page has a grey header with the 'MonarchNet2™ Network Interface' logo on the left and the 'AVERY DENNISON' logo on the right. A left-hand navigation menu contains 'Home', 'About', and 'Login' (which is highlighted with a red bar). The main content area is titled 'Administrator Logon' and contains a form with two input fields: 'Username:' and 'Password:'. Below the fields is a 'Submit' button.

The About tab appears with information about your printer, including printer name, IP address, and installed/enabled options.

The screenshot shows the 'Admin Home' page of the MonarchNet2 Network Interface. The page has a grey header with the 'MonarchNet2™ Network Interface' logo on the left and the 'AVERY DENNISON' logo on the right. A left-hand navigation menu contains 'Home', 'Network Configuration', 'Printer Configuration', 'Virtual Panel Display', 'Custom Command', 'Custom Data', 'Admin Settings', and 'Log Off'. The main content area is titled 'Admin Home' and has two tabs: 'About' and 'Tech Support' (which is selected). The 'About' tab displays printer information: 'Printer Model: Monarch® ADTP1™', 'Printer Name: PXRDE076D', 'H/W Address: 00-1E-C0-DE-07-6D', 'Serial Number: 15010134', 'IP Address: 000.0.0.00', 'Subnet Mask: 255.255.0.0', and 'Default Gateway: 10.5.1.1'. Below this is a section for 'Installed/Enabled Options' with a list of checkboxes: 'USB' (checked), 'USB Keyboard/Scanner', 'Verifier', 'RFID', and 'Cutter'.

Click the Tech Support tab to see Avery Dennison contact information.

# Configuring the Printer

You can configure the printer using your Web browser.

1. From the side Menu Bar, click **Printer Configuration**.
2. Select one of the following tabs: **Printer Configuration** or **System Setup**.

## Changing the Printer Configuration

Only configure the settings required for your network/printer.

**MonarchNet2™**  
Network Interface

**AVERY DENNISON**

**Printer Configuration** Printer Name: PXRDE076D  
IP Address: 000.0.0.00

Home  
Network Configuration  
**Printer Configuration**  
Virtual Panel Display  
Custom Command  
Custom Data  
Admin Settings  
Log Off

**Printer Configuration** **System Setup**

**Supply Setup**

Ribbon/Energy: Ribbon  
Supply Type: Die Cut  
Feed Mode: Continuous  
Cut Adjust: 0  
Supply Position: 0  
Batch Separators: No  
Skip Index: No  
Backfeed: Off  
Dispense Position: 65  
Backfeed Distance: 65

**Image Adjustments**

Contrast: 0  
Print Position: 0  
Margin Position: 0

Save Changes

**Note:** Only the available options for your printer are displayed.

1. On the **Printer Configuration** tab, set the **Ribbon**: None, Ribbon, or High Energy.
2. Set the **Supply Type**: Edge Aperture, Edge Die Cut, Edge Black Mark, Tag Edge, Center Aperture, Center Die Cut, Center Black Mark, or Continuous.
3. Set the **Feed Mode**: Continuous, On Demand, or Liner take-up (optional).
4. Enter a value for the **Cut Adjust** (Position). The range is –300 to 300. This adjusts where the tag is cut.
5. Enter a value for the **Supply Position**. The range is –300 to 300. This adjusts the printer to print at the vertical 0,0 point. Only adjust on initial printer setup.
6. Set the **Batch Separators**: No, Yes, or Long.
7. Set the **Skip Index** mode: No or Yes. Skip index allows you to print an image over multiple labels.
8. Set the **Backfeed**: Off or On. Backfeed advances each printed label to the specified dispense position and then backs up the next label to be printed underneath the printhead.
9. Enter a value for the **Dispense Position** (range is 50 to 200). This adjusts the stopping point of the label *after* it is printed.
10. Enter a value for the **Backfeed Distance** (range is 20 to 200). This is the amount to move the label backwards *before* printing.

11. Enter a value for the **Contrast** (range is –699 to 699). This adjusts the darkness of printing on the supply.
12. Enter a value for the **Print Position** (range is –450 to 450). This adjusts where data prints vertically on the supply.
13. Enter a value for the **Margin Position** (range is –99 to 99). This adjusts where data prints horizontally on the supply.
14. Click **Save Changes** when finished.

## Changing the System Setup

Only configure the settings required for your printer.

1. On the **System Setup** tab, set the **Flash Storage**: Enabled or Disabled. Flash storage allows packets with “R” or “N” selectors to be stored in Flash Memory, instead of volatile RAM. Packets stored in flash memory are saved when the printer is turned off.
2. Set the **Speed Adjustment**: Default, 2.5, 4.0, 6.0, 8.0 10.0, or 12.0 ips (inches per second). If you select “Default,” serial bar codes print at 2.5 ips; parallel bar codes print at 6.0 ips. The maximum print speed with the ADTP2 is 8.0 ips.
3. Set the **Power Up Mode**: Online or Offline.
4. Select the **Language**.
5. Set the **Monetary Sign**: None, USA, UK, Japan, Germany, France, Spain, Italy, Sweden, Finland, Austria, India, Russia, Korea, Thailand, China, Euro-Dollar.
6. Set the **Secondary Sign**: No or Yes.
7. Set the number of **Decimal Places**: 0, 1, 2, or 3.
8. Select **Slashed Zero** to print zeros with a slash (Ø): No or Yes.
9. Click **Save Changes** when finished.

# Configuring the Network Settings

Configure the printer to operate on your network.

1. From the side Menu Bar, click **Network Configuration**.
2. Select one of the following tabs: Protocols, Wireless, Alerts, or MQTT.

## Changing TCP/IP Settings

Only configure the settings required for your network/printer.

1. On the **Protocols** tab, set the **Boot Method**: DHCP or Static.
  2. Change the **IP Address** if necessary.
  3. Set or change the **Subnet Mask**.
  4. Set or change the **Gateway**.
  5. Enter the **Host Name**.
  6. Enter the **Domain Name**.
  7. Select **Enable Automatic DNS Setting** to automatically configure the domain name settings.
  8. Enter the **DNS Server's IP** address.
  9. Select **Enable Network Time** to enable the network time protocol, which allows the printer to query a time server on the network and synchronize the clock in the printer.
  10. Enter the **Time Server's IP** address. The printer waits 20 seconds for the server to respond. The status is displayed within parentheses.
  11. Enter the **Time Zone Adjustment** in hours and minutes, from Greenwich Mean Time (GMT). This offset varies by location and time zone. For example, Eastern/Standard time is five hours behind GMT. Use  $-5:00$  for the offset. For an offset of 3.5 hours, use 3:30.
- Note:** Changes for Daylight Savings Time are not made automatically. If your time zone participates in Daylight Savings Time, change the time zone offset accordingly.
12. Set the **TCP Port**. Port 9100 is the default.
  13. Set the **TCP Timeout** (in minutes). The default is 0, which is no timeout.
  14. Set the **Keepalive Timer** (in minutes). The default is 1 minute.
  15. Click **Save Changes** to save changes or click **Save/Reboot** to save the changes and re-initialize the network with the new settings. Any changes made on this screen or other screens do not take effect until you click **Save/Reboot**. This process takes a few minutes.

The screenshot displays the 'Network Configuration' web interface. On the left is a sidebar menu with options: Home, Network Configuration (selected), Printer Configuration, Virtual Panel Display, Custom Command, Custom Data, Admin Settings, and Log Off. The main content area features four tabs: Protocols, Wireless, Alerts, and MQTT. The 'Protocols' tab is active, showing the following settings:

- Boot Settings:** Boot Method: DHCP (dropdown), IP Address: 192.168.7.1, Subnet Mask: 255.255.255.0, Gateway: 192.168.7.1. MAC: D8-80-39-D6-0B-04.
- Domain Name Server Settings:** Host Name: FXP20004, Domain Name: ,  Enable Automatic DNS Setting, DNS Server: 0.0.0.0.
- Network Time Server Settings:**  Enable Network Time, Time Server: , Adjust [+/-hh:mm]: 0:00.
- TCP Settings:** TCP Port: 9100, TCP Timeout: 0 min, Keepalive Timer: 1 min.

At the bottom of the settings area are two buttons: 'Save Changes' and 'Save/Reboot'. In the top right corner, there are labels for 'Printer Name:' and 'IP Address:'.

## Changing Wireless Settings

Only configure the settings required for your network/printer.

1. Click the **Wireless** tab to configure the wireless network (802.11a/b/g/n) settings.
2. Set the **SSID**. The SSID is a unique identifier that must match for all nodes on a subnetwork to communicate with each other.

**Note:** Regulatory domain is preset to United States. Contact Technical Support to change it.

3. Set the **Roam Hysteresis**. The range is 1 – 15. Whenever the printer's signal strength gets below this value, the printer connects to another access point in range with better signal strength. This prevents excessive roaming between access points if the printer is located near two access points.

4. Set the **Security** option. The security option determines the algorithm used to encrypt messages.
5. Set the **EAP Method**: TLS, TTLS LEAP, PEAP, or EAP-FAST. The authentication type specifies how users are identified and verified on a network. These options vary depending on what was selected as the Encryption Mode.
6. Set the **Authentication Protocol**: PAP, or MSCHAP\_V2.
7. Enter the **User ID** (if required).
8. Enter the **Password** (if required). Click the **Show Password** checkbox to show the password.
9. Click **Upload Wireless Certificate Files** if you need to add wireless certificates. See "[Configuring Certificates](#)" for more information.

The screenshot shows the 'Network Configuration' page with the 'Wireless' tab selected. The left sidebar contains navigation options: Home, Network Configuration (selected), Printer Configuration, Virtual Panel Display, Custom Command, Custom Data, Admin Settings, and Log Off. The main content area is titled 'Wireless Settings' and includes the following fields and options:

- SSID: [Text input field]
- Reg. Domain: United States (0x8348)
- Mode: Infrastructure
- Roam Hysteresis: [Dropdown menu with value 6]
- Security: [Dropdown menu with value WPA2-Enterprise]
- EAP Method: [Dropdown menu with value TLS]
- Authentication Protocol: [Dropdown menu with value PAP]
- User ID: [Text input field]
- Password: [Text input field with masked characters]
- Upload Wireless Certificate Files: [Link]
- Private Key Password: [Text input field]
- Wireless Certificate Files Installed:
  - Root CA Certificate Not Installed
  - Client Certificate Not Installed
  - Client Private Key Not Installed
- Save Changes [Button] Save/Reboot [Button]

The screenshot shows the 'Upload Wireless Certificate Files from Local Drive (PEM Format)' dialog. It contains three file selection fields:

- Root CA Certificate: [Choose File] No file chosen
- Client Certificate: [Choose File] No file chosen
- Client Private Key: [Choose File] No file chosen

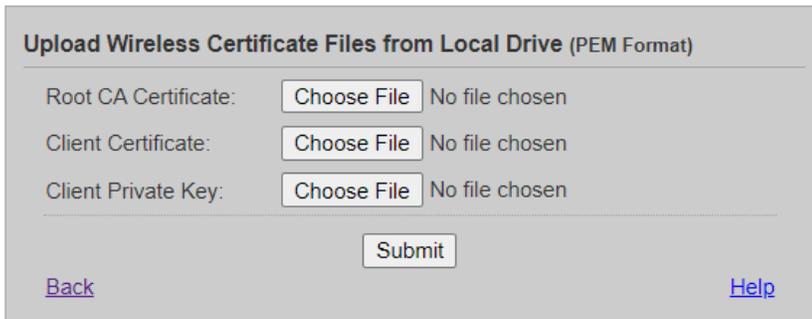
At the bottom, there is a 'Submit' button, a 'Back' link, and a 'Help' link.

10. Enter the **Private Key Password** (if required) your client private key is encrypted.
11. Click **Save/Reboot** to apply the changes. Even though you submitted your changes on the previous screen, they do not take effect until you click **Save/Reboot**. This process takes a few minutes.

## Configuring Certificates

For TLS authentication, you may need to upload the Authentication Server Certificate. The certificate must be in **PEM format**.

1. Click **Browse** to upload the appropriate **Root Certificate, Client Certificate, and Private Key**.



The screenshot shows a web interface titled "Upload Wireless Certificate Files from Local Drive (PEM Format)". It contains three rows of input fields, each with a "Choose File" button and a "No file chosen" status. The rows are: "Root CA Certificate:", "Client Certificate:", and "Client Private Key:". Below these fields is a "Submit" button. At the bottom left is a blue link labeled "Back" and at the bottom right is a blue link labeled "Help".

2. Click **Submit**.
3. Click **Back** to return to the previous screen.
4. Click **Save/Reboot** for changes to take effect. Even though you submitted your changes on the previous screen, they do not take effect until you click **Save/Reboot**. This process takes a few minutes.

**Note:** Any uploaded Wireless certificates/keys can be erased from the printer through the following menu option: Main Menu -> Setup -> Network -> Default Network -> Factory Default.

# Alerts

1. Click the **Alerts** tab to setup the mail server and select users to receive messages about printer status.
2. Enter the **SMTP IP Address**.
3. Enter the **SMTP Port**.
4. Enter the **Domain Name**.
5. Specify up to three users who will receive alert messages.
6. Select the alerts for each user. ALL is a toggle switch to select or deselect all the boxes for each user. The "Printer Offline" alert only appears if the operator presses **Escape** on the printer, not **Enter**.
7. Click **Save Changes** to save your alert settings.
8. Click the **Protocols** tab.
9. Click **Save/Reboot** (on the **Protocols** tab) before any changes take effect. Even though you submitted your changes on the previous screen, they do not take effect until you click **Save/Reboot**. This process may take a few minutes.

The screenshot shows the 'Network Configuration' interface with the 'Alerts' tab selected. It includes a sidebar with navigation options like Home, Network Configuration, Printer Configuration, etc. The main area is divided into 'Setup Mail Server (SMTP)' and 'Setup Alerts'. The SMTP section has fields for SMTP Server (0.0.0.0), SMTP Port (25), and Domain Name. The Setup Alerts section has a checkbox for 'Send all users test message' and three input fields for 'Alert User 1', 'Alert User 2', and 'Alert User 3'. Below these are checkboxes for various error types (Printer Offline, Printhead Interlock Error, etc.) for each of the three users, with 'ALL' buttons for each column. A 'Save Changes' button is at the bottom.

## Receiving An Alert

You receive an email when the printer goes offline, has a ribbon error, or for any other selected error. The email looks similar to:

Sender	Subject	Date
ADTP1@averydennison.com	Alert #4: ERROR #754 Check Ribbon.	08/02/2016 10:01
ADTP1@averydennison.com	Alert #1: Going Off-line	08/02/2016 09:33

The text of the email follows:

```
MonarchNet2 Printer Alert!!!  
Prn IP:192.0.0.0  
Prn Name:PX8A97CA  
Going Off-Line
```

Please DO NOT REPLY to this message.

Perform the appropriate action to correct the problem. Make sure the printer is ready to receive data. The display shows either the wireless or wired symbol after the problem is corrected.

# Changing MQTT Settings

MQTT (MQ Telemetry Transport) is a machine-to-machine network protocol. Use this tab to setup your printer using MQTT. **Only complete the fields that apply to your specific broker/network setup.**

1. Select your **Client** using the drop-down menu.
2. Enter your **Broker Address**.
3. Enter the **Broker Port**.
4. Enter the **Broker Username (if required)**.
5. Enter the **Broker Password (if required)**.
6. Enter the **SOTI Tenant ID (if required)**.
7. Click the checkbox to enable/disable **TLS Encryption**.
8. Click the link to upload **MQTT Certificate Files**.
9. Enter the **Broker Certificate's Common Name (optional)**.
10. Enter the **Private Key Password** only if your client private key is encrypted.
11. Click **Save/Reboot** for changes to take effect. This process takes a few minutes.

Printer Name:   
 IP Address: 1

Home  
Network Configuration  
Printer Configuration  
Virtual Panel Display  
Custom Command  
Custom Data  
Admin Settings  
Log Off

Protocols Wireless Alerts MQTT

**MQTT Settings**

Client: SOTI Connect

Broker Address: 137.116.55.41  
Broker Port: 8883  
Broker Username:  
Broker Password:  
SOTI Tenant ID:  
 Enable TLS Encryption

[Upload MQTT Certificate Files](#)

Broker Certificate's Common Name:  
Private Key Password:

**MQTT Certificate Files Installed:**

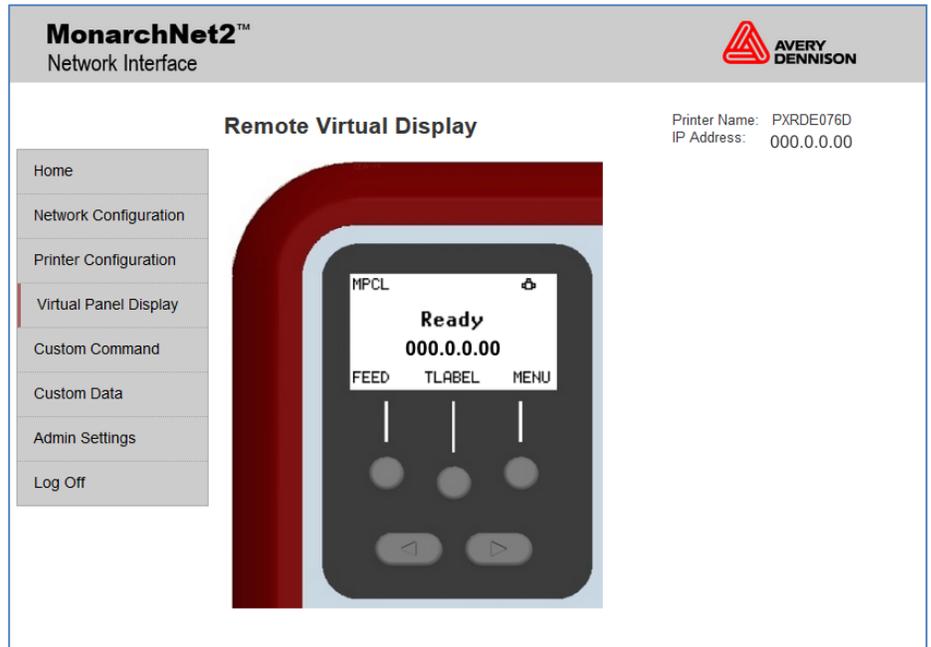
- Root CA Certificate  
Thumbprint: StubCertThumbprint  
Subject: StubCertSubject  
Subject Alt. Name: StubCertAltSubject  
Issued By: StubCertIssuer  
Issued: StubCertValidFrom  
Expires: StubCertValidTo
- Client Certificate  
Thumbprint: StubCertThumbprint  
Subject: StubCertSubject  
Subject Alt. Name: StubCertAltSubject  
Issued By: StubCertIssuer  
Issued: StubCertValidFrom  
Expires: StubCertValidTo
- Client Private Key  
Size: 1704 bytes  
MD5 Hash: 3d94b30fb5ff94159c778263432e20d9

Save Changes Save/Reboot

## Reading the Virtual Panel

The virtual panel operates just like the printer's control panel. You can use the virtual panel to clear errors, feed labels, and more.

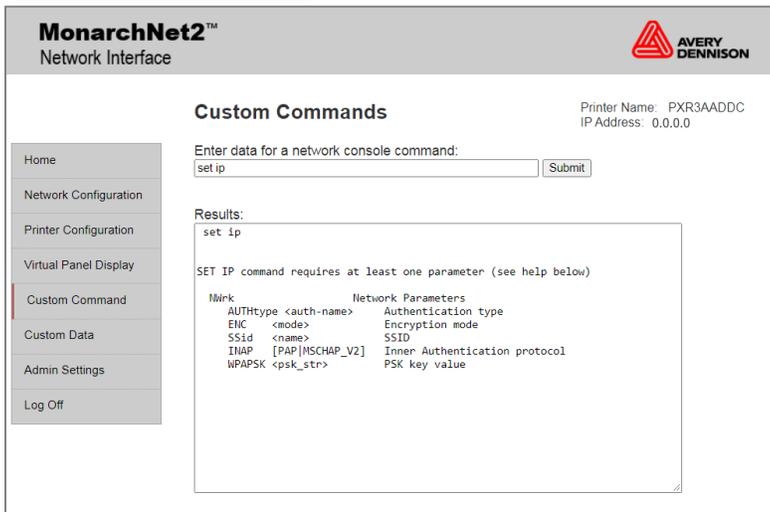
1. From the side Menu Bar, click **Virtual Panel Display**.
2. The current status of the printer appears on the virtual panel's display.
3. If there is an error, click **Escape/Clear** to clear the error. If you want to feed a label, click **Feed**.



## Using Custom Commands

The Custom Commands menu allows you to enter MPCL format and batch data to print a label or enter Telnet console commands.

1. From the side Menu Bar, click **Custom Command**.
2. Enter any MCPL format and batch data or enter a Telnet console command. See Chapter 3, "[Console Commands](#)," for more information.



3. **Click Submit.** The MPCL format is sent or results from a Telnet console command appear.

## Using Custom Data

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The Custom Data menu allows you to enter MPCL format and batch data to print a label.

1. From the side Menu Bar, click **Custom Data**.
2. Enter any MCPL format and batch data.
3. Click **Submit**. The MPCL format is sent and the label prints.

## Admin Settings

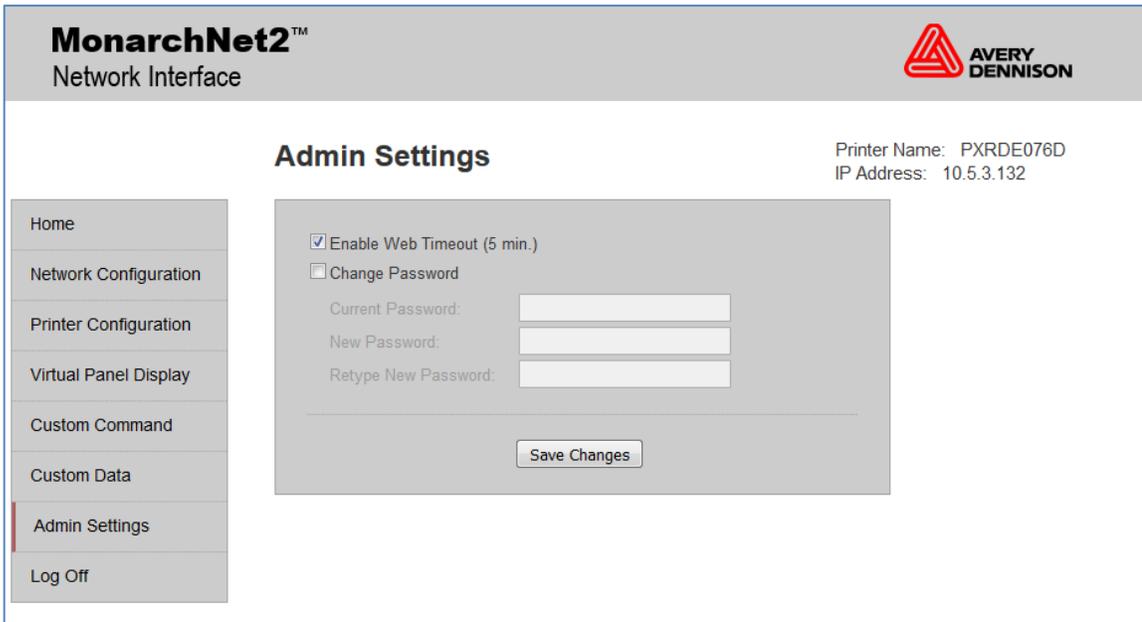
---

The Admin Settings menu allows you to enable Web Timeout and/or change the Admin Password.

### Enable Web Timeout

Enable the Web Timeout setting to automatically logout after 5 minutes of inactivity.

1. Click the Enable Web Timeout (5 min.) checkbox.



The screenshot shows the MonarchNet2 Network Interface Admin Settings page. The page header includes the MonarchNet2 logo and the Avery Dennison logo. The printer name is PXRDE076D and the IP address is 10.5.3.132. The Admin Settings section contains two checkboxes: 'Enable Web Timeout (5 min.)' which is checked, and 'Change Password' which is unchecked. Below the checkboxes are three password input fields labeled 'Current Password', 'New Password', and 'Retype New Password'. A 'Save Changes' button is located at the bottom of the settings area. A navigation menu on the left side of the page includes options for Home, Network Configuration, Printer Configuration, Virtual Panel Display, Custom Command, Custom Data, Admin Settings (which is highlighted), and Log Off.

2. Click **Save Changes**.

## Changing the Password

You can change the access password for MonarchNet2. This should only be done by your System Administrator. The default password is **access**. **The password is case-sensitive** and saved in the printer's flash memory.

**Note:** Make a note of the password if you change it. Changing the password also restricts access to Telnet sessions.

1. From the side Menu Bar, click **Admin Settings**.
2. Enable **Change Password**.
3. Enter the **Current Password**.

**MonarchNet2™**  
Network Interface

**Admin Settings**

Printer Name: PXRDE076D  
IP Address: 000.0.0.00

Home  
Network Configuration  
Printer Configuration  
Virtual Panel Display  
Custom Command  
Custom Data  
Admin Settings  
Log Off

Enable Web Timeout (5 min.)  
 Change Password

Current Password: .....

New Password: .....

Retype New Password: .....

Save Changes

4. Enter the **New Password**.
5. Retype the **New Password** to confirm it.
6. Press **Save Changes** when finished.

### **Reset Default Password**

Using version 3.0 or greater firmware, you can reset the MonarchNet2 and Telnet password to the default, **access**. From the printer's menu, select Setup, Network, Reset Def Pwd. The password is reset and the printer restarts.

# CONSOLE COMMANDS

## 3

Use this chapter to configure the Wireless module using Telnet. You must have a basic understanding of the Telnet application. For initial setup, do not use Telnet, use auto-discover mode. Once you have the IP address, you can use Telnet or a Web browser.

RSH (remote shell) support is available. Remote shell support is a common UNIX® application that provides remote command execution capability for networked devices. For more information, refer to your UNIX documentation.

- ◆ You can use Telnet if you do not have access to the MonarchNet2 software.
- ◆ This chapter also includes information about the Network Packet (Console Passthru).

**Note:** The default port is Port 23.

## Conventions

---

This section uses the following conventions:

- KEYwords** Type the capitalized letters of each keyword instead of the whole keyword. Some keywords require more capitalized letters than others. For example,  
**SEt**  
**RAdio**
- [options]** Mutually-exclusive options are included within square brackets and separated by a forward slash. Select only ONE of the options. For example,  
**[DISable/STRICT/FLEXible]**
- <values>** Values are included within brackets. Values that contain spaces (multiple words) must be enclosed within quotation marks (""). For example,  
**SEt EN PW <value>**  
**SEt EN PW "Store 876"**
- n** Numeric digits are indicated by the letter (n). For example,  
**SEt IP TImeout 5**

## Accessing Telnet Console Mode

---

1. Start a Telnet session.
2. Type telnet [your printer's IP address] (for example, **192.0.0.0** )then press **Enter**.
3. You see "Welcome to MonarchNet2 Enter Password:"  
Type **access** as the password then press **Enter** (**access** is the default password.).

The password is case-sensitive. You may not be prompted for a username.

**Note:** The Telnet session times out after 10 minutes of inactivity.

4. To view the current wireless (or network) settings, type **sh en** (show wireless settings) then press **Enter**:

```
WiFi Mode: Infrastructure
WiFi SSID: TaberNet
WiFi Encryption: WPA2
WiFi Authentication Type: PSK
WiFi Regulatory Domain: United States (0x8348)
Connected to SSID TaberNet
AP MAC Address: 7e:8a:20:82:a7:4d
Signal Quality: Excellent (-33 dBm)
```

5. To show the current IP settings, type **sh ip** (show TCP/IP settings) then press **Enter**.

```
Boot method: Static
IP address: 192.168.1.75
Subnet mask: 255.255.255.0
IP Gateway: 192.168.1.1
LPD banner: disabled Timeout: 5 min
LPD retries: disabled Keepalive: 1 min
Service Port TCP port
PXR3AADDC_X1 X1 9100
```

6. To change the SSID, type **set en ssidtestsystem** then press **Enter**.
7. To set the IP address, type **set ipad 192.0.0.192** then press **Enter**.
8. To set the subnet mask, type **set ipsub 255.255.0.0** then press **Enter**.
9. Type **INIT** and press **Enter** to save the settings and initialize the unit.
10. Type **EXIT** to exit Telnet.

See the following sections for a list of the most frequently used commands.

## Help Commands

---

For help at any time, type "Help" and a list of available commands appears. The Help command builds on itself, because for each command you type, more details appear for each option.

**Note:** There are help menus for all supported commands. To access a help menu for a specific command, type **Help<command>**.

### **Syntax:** Help set

```
DEFAULT    Set parameters to factory defaults
EN         Network Parameters
LOAD      Firmware update parameters
PAssword<password>  Set console password
PORt<name> .      Parameter for port <name>
SERVEr Server and LAT parameters
SERVIce<name>    Service Parameters
Syslog     Syslog Parameters
DNS       DNS Parameters
STRing n "... "  BOT/EOT string
IP        LPD/TCP Parameters
POWERON   <delay-sec>  Power on delay
```

Displays a list of the available help commands for "Set."

### **Syntax:** Help set ip

```
IP        LPD/TCP Parameters
  ADdress aa.bb.cc.dd  IP node address
  KEealive n           Keepalive interval (min)
  MEthod   <type>     Set method of getting IP address
  ROuter   aa.bb.cc.dd  Default router address
  SUBnet   aa.bb.cc.dd  Subnet mask
  TImeout  n           Inactivity timeout
```

Displays a list of the available help commands for "Set IP."

## General Commands

---

From the list of commands, the brackets - [] indicate to pick one of the options listed, the items inside curly braces - {} are optional and do not need to be specified.

### **Set/CLear/DElete/PUrge**

Used in conjunction with additional parameters.

### **EXIT**

Exits console mode.

### **HElp**

Displays the list of available commands.

### **SET**

Sets a specified parameter.

### **SHow**

Displays current settings.

### **INIT**

Saves settings and initializes unit.

### **SET DEFAULT**

Sets wireless module to factory defaults.

### **SET PAssword**

Sets console password. The user is prompted for old password, new password, and to verify new password. The default password is **access**.

**Note:** The password is case-sensitive.

### **SET SERVERName<name>**

Sets server node name.

### **SHow FREE**

Shows amount of available memory.

### **SHow PRN FEEdlabel**

Feeds a label.

### **SET PRN FIRMWARE**

Sets the printer in boot loader mode to reload the firmware.

### **SHow PRN KEYPad**

Shows the current status of the keypad lock.

### **SET PRN KEYPad [LOck/UNlock]**

Locks or unlocks the printer's keypad.

### **SET PRN RESET**

Rests the printer (Telnet and remote shell only).

### **SHow PRN STATus**

Shows the printer's current status (decoded ENQ status bytes).

### **SHow PRN TESTlabel**

Prints a test label.

**SHow PRN UPASSwordstatus**

Shows the current status of the offline menu user password (on or off).

**SET PRN UPASSwordstatus [YEs/NO]**

Turns the offline menu user password on or off.

**SHowSERVER**

Shows the server parameters.

**SHowVersion**

Shows the server firmware version.

**UPTIME**

Shows how long the printer has been on in format **hh:mm:ss up N day(s), hh:mm:ss**.

**Setup Commands**

---

**SET PRN BACKfeedcontrol [ACtion/ DISPenseposition/ DISTance] value**

Sets the specified backfeedcontrol parameter to the specified value.

**SHow PRN BACKfeedcontrol {ACtion/ DISPenseposition/ DISTance}**

Shows the specified backfeedcontrol parameter's current setting. If no parameter is specified, it shows the current settings of all parameters in the backfeed control category.

**SET PRN BATchoptions[CLearfields/ Numberofparts/ CUTOption/ CUTMultiple/ PRIntmultiple/ QUantity] PRompt [YEs/ NO]**

Turns on or off the specified batch entry prompt. These parameters also have corresponding values, such as "cut last ticket" for CUTOption.

**SET PRN BATchoptions [CLearfields/ Numberofparts/ CUTOption/ CUTMultiple/ PRIntmultiple/ QUantity] value**

Sets the specified batchoptions parameter to the specified value.

**SET PRN BATchoptions [CUTLTicketprompt/ CUTAfterbatchprompt/ NOCutbeforeprompt/ CUTLStripprompt] [YEs/ NO]**

Sets the specified batchoptions parameter's current setting. If no parameter is specified, it shows the current setting of all parameters in the batchoptions category.

**SHow PRN BATchoptions {CLearfields/ Numberofparts/ CUTOption/ CUTMultiple/ CUTLTicketprompt/ CUTAfterbatchprompt/ NOCutbeforeprompt/ CUTLStripprompt/ PRIntmultiple/ QUantity}**

Shows the specified batchoptions parameter's current setting. If no parameter is specified, it shows the current settings of all parameters in the batchoptions category.

**SET PRN COMMunication [BAudrate/ WOrdlength/ STopbits/ PArity/ FLOWcontrol/ PPort/ PMode] value**

Sets the specified communication parameter to the specified value.

**SHow PRN COMMunication {BAudrate/ WOrdlength/ STopbits/ PArity/ FLOWcontrol/ PPort/ PMode}**

Shows the specified communication parameter's current setting. If no parameter is specified, it shows the current settings for all parameters in the communication category.

**SET PRN CONtrolcharacters [STarthead/ PParamseparator/ QUotedstrings/ FIEldseparator/ ENDheaderDATAescape/ IMMEDIATEcmd/ ENQRequest/ ENQTerminator/ JOBterminator] value**

Sets the specified control character to the specified value. Setting the immediate command character enables immediate commands; setting the ENQ status request character enables ENQ status polling.

**Show PRN CONtrolcharacters {STArtheader/ PAMseparator/ QUotedstrings/ FIeldseparator/ ENDheader/ DAtaescape/ IMmediatecmd/ ENQRequest/ ENQTerminator/ JOBterminator}**

Show the specified control character's current setting. If no parameter is specified, it shows the current settings of all parameters in the control characters category.

**CLear PRN CONtrolcharacters [DAtaescape/ IMmediatecmd/ ENQRequest/ ENQTerminator/ JOBterminator]**

Clears the specified control character. Clearing the immediate command character disables immediate commands. Clearing the ENQ status request character disables ENQ status polling.

**SHoW PRN INFo {MOdel/ SERial/ FIRmversion/ BOotversion/ COntrastpot/ PIcversion/ KNifeversion/ RFidversion/ NEtworkversion/ TOtals}**

Shows the specified info parameter. If no parameter is specified, it shows all parameters in the info category.

**SET PRN MEMoryconfig [DOWnloadablefonts/ FORmat/ IMAge/ REceive/ TRAnsmiT/ VEctorfonts] *value***

Sets the specified buffer's size the specified value.

**SHoW PRN MEMoryconfig [DOWnloadablefonts/ FORmat/ IMAge/ REceive/ TRAnsmiT/ VEctorfonts]**

Shows the specified buffer's current size. If no buffer is specified, it shows the current sizes of all buffers.

**SET PRN MONetary [MONetarysign/ SEcondarysign/ DECimaldigits] *value***

Sets the specified monetary parameter to the specified value.

**SHoW PRN MONetary {MONetarysign/ SEcondarysign/ DECimaldigits}**

Shows the specified monetary parameter's current setting. If no parameter is specified, it shows the current settings of all parameters in the monetary category.

**SET PRN PRIntcontrol [COntrast/ PRIntoposition/ MARGinposition/ SPeed/ PHEADwidth] *value***

Sets the specified printcontrol parameter to the specified value.

**SHoW PRN PRIntcontrol {COntrast/ PRIntoposition/ MARGinposition/ SPeed/ PHEADwidth}**

Shows the specified printcontrol parameter's current setting. If no parameter is specified, it shows the current settings of all parameter's in the print control category.

**SET PRN QUEuecontrolREpeat**

Repeats last printed batch.

**CLear PRN QUEuecontrol [ALlcancel/ CUrrentcancel/ ABorterror/ Reseterror]**

Performs the specified action.

**SHoW PRN STORageFLash**

Shows the amount of unused flash memory.

**SHoW PRN STORageFORmats {*format # or ALI*}**

Shows headers for individual or all formats. Note that '0' is shorthand for 'ALI'.

**SHoW PRN STORageFONts**

Shows headers for all fonts.

**CLear PRN STORage [RAM/ FLash] FORmats [*format # or ALI*]**

Clears the specified format or all formats from volatile RAM or flash memory. Note that '0' is shorthand for 'ALI'.

**CLear PRN STORage [RAM/ FLash] FONts [*font # or ALI*]**

Clears the specified font or all fonts from volatile RAM or flash memory. Note that '0' is shorthand for 'ALI'.

**CLear PRN STORage [RAM/ FLash] GRaphics [*graphic # or ALI*]**

Clears the specified graphic or all graphics from volatile RAM or flash memory. Note that '0' is shorthand for 'ALI'.

**CLear PRN STORage [RAM/ FLash] CDigits [*CD scheme #*]**

Clears the specified check digit scheme from volatile RAM or flash memory.

**SET PRN SUPply [TYpe/ RiBbon/ FEedmode/ SUPplyposition/ CUtposition/ SKipindex/ KNifecontrol/ ERroraction] *value***

Sets the specified supply parameter to the specified value.

**SHoW PRN SUPply [TYpe/ RiBbon/ FEedmode/ SUPplyposition/ CUtposition/ SKipindex/ KNifecontrol/ ERroraction]**

Shows the specified supply parameter's current setting. If no parameter is specified, it shows the current settings of all parameter's in the supply category.

**SHoW PRN SUPplySYncsupply**

Resynchronizes the supply.

**SET PRN SYStem [POverupmode/ LAnguage/ BAtchseparators/SLashedzero/SYmbolset] *value***

Sets the specified system parameter to the specified value.

**SHoW PRN SYStem {POverupmode/ LAnguage/ BAtchseparators/SLashedzero/SYmbolset}**

Shows the specified system parameter's current setting. If no parameter is specified, it shows the current settings of all parameters in the system category.

**SET PRN SCRipts [LORad/ ENable/ DISable/ DELETE]**

Loads, enables, disables, or deletes a script. Note that LORad, ENable, DISable, and DELETE take no arguments.

**SET PRN SCRipts [ENQpollbeforescript/ IMMcmdbeforescript] *value***

Sets the specified scripts parameter to the specified value.

**SHoW PRN SCRipts {STatus/ INfo/ ENQpollbeforescript/ IMMcmdbeforescript}**

Shows the specified scripts parameter's current setting. If no parameter is specified, it shows the currents settings of all parameters in the scripts category.

**SET PRN VERifier [STate/ SCanbeam/ CAbledetect] *value***

Sets the specified verifier parameter to the specified value.

**SHoW PRN VERifier {STate/ SCanbeam/ CAbledetect/ SUmmary}**

Shows the specified verifier parameter's current setting. If no parameter is specified, it shows the current settings of all parameters in the verifier category.

**CLear PRN VERifierSUmmary**

Clears the verifier summary data (number of good and bad verifier labels).

## **RFID Commands**

---

**SHoW PRN RFId {MORoduletype/ VERsion/ WRiteattempts/ PRotocol/ RPower/ WPower/ REgion/ FREquency/ SUmmary}**

Shows the specified RFID parameter's current setting. If no parameter is specified, it shows the current settings of all parameters in the RFID category.

**CLear PRN RFIdSUmmary**

Clears RFID summary data (number of good and bad RFID tags).

## 802.11b/g Wireless Commands

---

In the following commands, EN and NW (network settings) are interchangeable.

### **CLear EN SSid**

Clears the SSID, so the server connects to any access point.

### **SET EN AUTHtype [None/TLS/TTLS/PEAP/PSK/EAP-FAST]**

Sets the authentication type. See Chapter 3, "Using the Web Browser" for more information.

### **SET EN ENC [DISable/WPA/WPA2]**

Sets the encryption mode. See Chapter 3, "Using the Web Browser" for more information.

### **SET EN INAP [PAP/MSCHAP\_V2]**

Sets the EAP inner authentication protocol.

### **SET EN ROAm**

Sets the Roam Threshold.

### **SET EN SSID "<ssid>"**

Sets 802.11b/g/n wireless SSID. Use quotes if there is a space in SSID. This is case sensitive.

## TCP/IP Commands

---

### **SET IP Address**

Sets IP address of wireless module.

### **SET IP KEepalive n**

Sets keep alive interval (n) in minutes.

### **SET IP MEmethod [DHCP/STATIC]**

Sets method of getting IP address.

### **SET IP SUBnet aa.bb.cc.dd**

Sets default subnet mask.

### **SET IP TImeout n**

Sets timeout (n) in minutes.

## Using the Network Packet

---

Use the Network Packet to send console commands directly to the network card via the printer's serial port. If the network card does not appear to be communicating with the printer, you can use the Network Packet to change the SSID, IP address, etc. of the network card.

**Note:** You can use Network Packet even if MonarchNet2 is disabled or not installed. Printer console commands are available but network console commands are not.

**Syntax** {*N*,*number*,*action*,*device*,"*name*" |  
C,"*con\_cmds*" | }

*N1. N* Network Console Packet.

*N2. number* Number from 0-999 to identify the network console packet.

*N3. action* Enter **A** to add to packet to the printer.

*N4. device* Enter **T** to pass the packet through the printer and stores the packet in the network card.

*N5. "name"* Packet name, 0-8 characters, enclose within quotation marks.

*C1. C* Command field.

*C2. "con\_cmds"* Console commands. Must be enclosed within quotation marks. Each command must be on a separate line. The maximum number of characters per command is 100. See the list of commands earlier in this chapter for more information.

**Note:** The maximum number of commands per packet is twenty-five (25).

**Example** {*N*,*1*,*A*,*T*,"*mystore*" |  
C, "*set ip me static*" |  
C, "*init*" |  
C, "*exit*" | }

Sends the Network Packet **1 "my store"** directly to the network card (**T**) and **sets** the **IP**method to **static** for determining IP addresses. Init and Exit commands must be used to save changes and initialize the network card.



# TROUBLESHOOTING

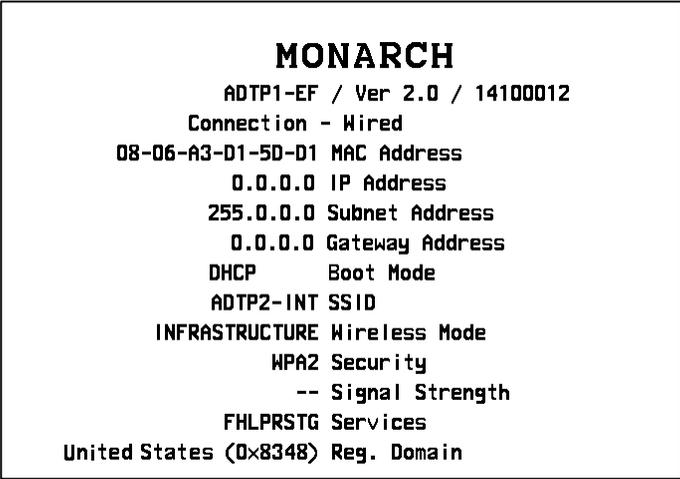


If you have difficulty communicating with the wireless module, verify that the printer operating properly, is online, and supplies are loaded correctly. is

## Printing a MonarchNet2 Test Label

Press **TLABEL** and select *Mnet2 Label*.

See Chapter 2 or 3 if you need to change any of the IP or wireless settings.



Use this table to solve some common printer/network problems.

Problem	Action
Printer does not appear to save IP, subnet, or gateway address.	The value for each segment must be less than 255 in these addresses.
Printer does not communicate with access point.	If you have reset network or wireless settings, allow time for the printer to reset and connect to an access point. This may take a minute or more, depending on network traffic.
The printer does not communicate with your network.	The network settings must match the printer's settings for: <ul style="list-style-type: none"><li>◆ IP address, gateway, and subnet mask</li><li>◆ SSID</li><li>◆ Security</li></ul>
Cannot see the printer on the network.	The devices must be on the same logical network and the subnet masks should be the same.

Use this table to solve some common MonarchNet2 Web browser problems.

Problem	Action
Verifier does not appear as an installed/enabled option through your Web browser.	The optional verifier must be enabled and properly connected. For more information, see your verifier's <i>Operating Instructions</i> .
MonarchNet2 does not appear to be working.	Turn off the printer and turn it back on. Print a MN2 test label to confirm the IP address, etc. Enter the correct IP address in your Web browser.
"Authorization Failure" message from MonarchNet2 on your computer/Web browser.	Enter the correct password when logging into MonarchNet2 (or accessing Telnet). The default password is <b>access</b> . Using version 3.0 or greater firmware, you can reset the MonarchNet2 and Telnet password to the default. From the <i>printer's</i> menu, select Setup, Network, Reset Def Pwd. The password is reset and the printer restarts.

## General Troubleshooting Information

Use the following information if your wireless printer is not operating properly.

1. Verify that the printer is turned on.  
If the printer is used on a Monarch® Mobile Work Station (MWS), the MWS unit's power AND the printer must be turned on.
2. If you are switching between wired and wireless mode on different subnets, turn off the printer and then turn it back on to reinitialize the wireless module.
3. Verify the wireless module is functioning.  
There is a wireless icon indicator on the printer's display.
4. Print an MN2 test label.

Use four-inch supply. If you are using supply that is shorter than four inches long, temporarily change your supply type to "continuous" to print the entire test label. After printing the test label, change your supply type to your previous setting.

Once you see "Ready" on the display, print a test label. If this does not print or the printer does not display "Ready," the printer is locked up. Turn off the printer, wait 15 seconds and then turn it back on.

5. On the test label, verify your IP and WiFi settings. The "wired/wireless:" value should be "WIRED" for Ethernet cable and "WIRELESS" for RF.

Check the "WiFi SSID" and the "signal strength." Is the SSID correct? Is the signal strength greater than zero? If the signal strength is 0, there is no connection with the access point; 30 (or less) indicates you may be experiencing interference or close to being out of the access point's range, and below 50, printing performance could be affected. If the signal strength is low, increase the number of retries. To improve the signal strength, try moving the printer closer to the access point and away from other radio devices such as Bluetooth® wireless devices, microwave ovens, or 2.4-GHz cordless phones.

6. Telnet to the printer.

**Note:** After the wireless module has been reset, you may need to re-enable Telnet.

Once you have verified connectivity, Telnet to the printer. (i.e. `telnet aa.bb.cc.dd`)

You see "Welcome to MonarchNet2 Enter Password:"

Type `access` as the password and press **Enter**. (`access` is the default password.)

The password is case-sensitive. You may not be prompted for a user name. Once here, you have verified operation to the wireless module.

7. Ping the printer.

Pinging the printer tells you if it is "seen" on the network. If you cannot ping the printer, turn the printer off and then on. Then ping every device in the path to the printer – access points, routers, etc. Any device you cannot ping needs attention.

**Ping ip address** (i.e. `ping 192.0.0.0`)

8. Verify connection to the data port by starting a Telnet session to the printer using Port 9100 (i.e. `telnet aa.bb.cc.dd 9100`).

Press **Ctrl-E** on your keyboard. This sends an ENQ request.

The printer responds with three characters. Depending upon the Telnet being used, you may not see the first character, as it is a hex 05 value. The other two characters are ASCII characters. You will see

`A@`

which means the printer is online and waiting. Alternatively, you can type

`{J,2}`

**Note:** The **J** must be capital.

The printer responds with `{J,0,0,"", ""}`.

No response means that the printer may have an open session to some other connection.

Either terminate the other connection or turn off the printer and turn it back on.

## Troubleshooting Wireless Configuration Problems

---

1. Your computer's wireless adapter and/or access point should be configured to match your printer's wireless settings.
2. The printer should be within range (90 meters or 300 feet) of your computer and away from metal objects and other devices with radio signals.



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