



Mailstation & DM Series™

Communications Device, LAN Constant Connection, PC Meter Connect, and Wi-Fi Connection Networking Guide



To properly enable your network to work with your Pitney Bowes equipment and take advantage of the Digital Connectivity options offered you may need to involve your Network/IT Administrator or Vendor to assist

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Introduction

What are the benefits of using a Digital Connection?







- **Faster and more reliable connection** for Pitney Bowes services such as Potage by Phone®, System Updates, Features on Demand, Postal Inspection, Rate Updates, and applicable Postal Services.
- **More convenient.** Digital connectivity is real-time, enabling you to have up-to-date pricing any time you want to send mail.
- **Saves money and time.** Eliminate the need for a dedicated phone line for your Mailing System; Analog connectivity is older technology and thus more costly to maintain.

Is it Secure?

The PC Mailing System Connect desktop application, Constant Connection LAN Adapter, and the DM Series™ Wi-Fi Connection Device are certified by ICSA labs, an independent division of Verizon Business, offering vendor-neutral testing and certification of security and information technology products. For more information or review our certifications please visit <https://www.icsalabs.com/vendor/pitney-bowes>.







What DM Series™ Products Work with Digital Connectivity?

| Product | K700/ K7M0 | DM100i/ DM200L | DM125/ DM225 | DM300c/ DM400c | DM475 | DM500-DM1100 |
|--|--|--|---|--|--|---|
|  |  |  |  |  |  | |
| Available Digital Connection Options | <ul style="list-style-type: none"> • LAN • Wi-Fi • PC Meter Connect | <ul style="list-style-type: none"> • PC Meter Connect | <ul style="list-style-type: none"> • LAN* • PC Meter Connect • Wi-Fi | <ul style="list-style-type: none"> • LAN • PC Meter Connect • Wi-Fi | <ul style="list-style-type: none"> • LAN • PC Meter Connect • Wi-Fi | <ul style="list-style-type: none"> • LAN* • Wi-Fi |
| Options Included w/ Mailing System | LAN & Wi-Fi | PC Meter Connect | PC Meter Connect LAN (Jan 2015) | PC Meter Connect LAN | Integrated LAN via RJ45 connection on Mailing System | N/A <i>*LAN available via PB Supply Line</i> |

*LAN = Integrated (DM475) or Constant Connection LAN Adapter

*Wi-Fi – DM Series™ Wi-Fi Connection Device

What do I need to get connected?

| Method | | Requirements | |
|---|---|--|---|
| Direct Network Connection |  | PB will provide | You will need |
| | | <ul style="list-style-type: none"> • LAN Cable • USB to LAN Adapter | <ul style="list-style-type: none"> • Network access point • Access to Internet via network and through any firewalls that may exist |
| Connection via Router (Wired Network Connection) |  | PB will provide | You will need |
| | | <ul style="list-style-type: none"> • LAN Cable • USB to LAN Adapter | <ul style="list-style-type: none"> • Router • Network access point • Access to Internet via network and through any firewalls that may exist |
| Wi-Fi Connection Device <i>*Available Q4 2014</i> |  | PB will provide | You will need |
| | | <ul style="list-style-type: none"> • LAN Cable • USB to LAN Adapter | <ul style="list-style-type: none"> • Wi-Fi Router via PB Supply Line or Sales • PC or Laptop to configure the device • Network access point • Access to Internet via network and through any firewalls that may exist |
| PC Meter Connect |  | PB will provide | You will need |
| | | <ul style="list-style-type: none"> • USB Cable • PC Meter Connect SW via simple download | <ul style="list-style-type: none"> • Networked PC w/ an active connection • Access to Internet via network and through any firewalls that may exist |

DM Series™ Connectivity Options Overview

1) PC Mailing System Connect (PCMC) Desktop Application

PCMC is a desktop application you can install onto your PC to allow your Mailing System to connect to the Pitney Bowes Data Center via the PC's Internet Connection, rather than over a standard telephone/analog line. Postage refills, system updates, ect; will be completed efficiently and much quicker via the Internet Connection. The PCMC software is provided as a no cost connectivity option for your Mailing System. More information is available via the following link: www.pb.com/support/PCMC, as well as in your



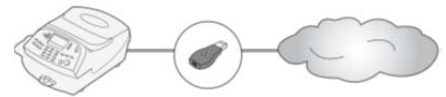
product's Operator Manual.

The PCMC Connection option is available for the mailstation 2 and all DM Series™ Mailing Systems. The Mailing System is connected to the PC via a USB cable that is provided with your Mailing System's installation kit.



2) LAN (Constant Connection) *Not required for DM475

The Constant Connection option is available via a LAN Adapter Kit. It converts your Mailing System's USB cable to a LAN (Digital Connection),



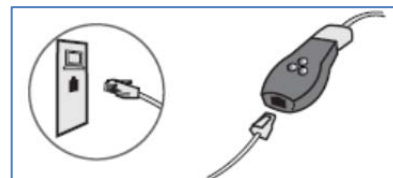
rather than over a standard telephone/analog line. It provides the benefit of a quicker and more efficient connection to the Pitney Bowes Data Center. More information is available via the following link: <http://pb.com/highspeedconnection>, as well as in your product's Operator Manual.



- The LAN Adapter (Constant Connection Kit) option is available for all DM Series™ Mailing Systems.
- The (Constant Connection Kit) is available via the PB Supply Line: **Item Number: 771-8**



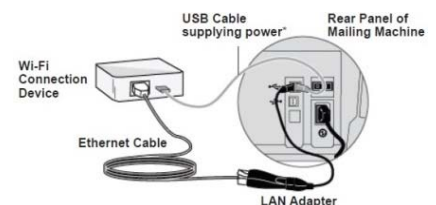
Connecting LAN Adapter to Mailing System via the USB Cable



Connecting LAN Adapter to RJ45 Wall Jack using Ethernet Cable

3) DM Series™ Wi-Fi Connection Device

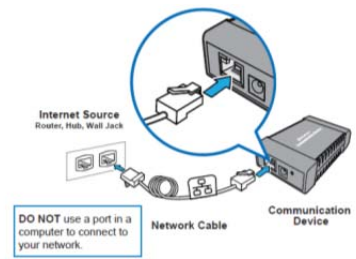
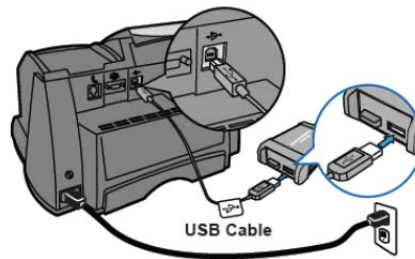
The Wi-Fi Connection Device is another option provided by Pitney Bowes to get you Mailing System connected digitally. It allows the Mailing System to connect to your Wi-Fi Network if preferred, or if the Mailing System is not located near a hardwired RJ45 wall jack. This connection methodology provides the benefit of a wireless, quicker, and more efficient connection to the Pitney Bowes data center. More information can be found at <http://pb.com/highspeedconnection> or <http://www.pitneybowes.com/us/wifi-installation>



- The DM Series™ Wi-Fi Connection Device requires the LAN Adapter Kit to work with applicable Mailing Systems (Except on the DM475)

K700/K7M0 Connectivity Options Overview

The K700/K7M0 Mailing Systems come with a Communications Device that allows you to establish a digital connection to the Pitney Bowes Data Center via LAN or Wi-Fi. Also, there is no longer a requirement for traditional/analog phone line. More information can be found at <http://www.pb.com/support/LAN> or www.pb.com/support/upgrade/K7, as well as in the Operator Manual.



Client Pre-Installation Checklist

To insure your Mailing System installation is completed smoothly, please take a few minutes to confirm that all necessary steps have been taken for your network readiness

Network Configuration

You may require the assistance of your Network/IT Administrator or Vendor to complete the information below.

This checklist ensures that your network settings are properly set for your Mailing System's digital connection, and also provides you with a reference point for any future configuration needs.

1) How is the IP address being allocated to your Mailing System?

- Dynamic (DHCP) Static

For Static IP Addresses, you will need the following information

IP Address _____

Subnet Mask _____

Default Gateway _____

Ports to this IP Address are open for

TCP 80 (HTTP) – Communicates XML messages to the PB Data Center
443 (HTTPS) – Used for SSL (Secured Socket Layer) and if applicable TLS (Transport Layer Security)

20 (FTP Data)

21 (FTP Outbound Commands) – Transmitting new software and graphics to meter

UDP 53 (DNS Lookup)

Ports > 1023 - For successful FTP Connection and transfer of files

2) Does your network allow both Chunked and Non-Chunked HTTP Transfer Encoding? (Chunked MUST be used)

- Yes No
-

3) Is the connection using a Proxy Server?

- Yes No
-

For a Proxy Server you will need the following information:

HTTP proxy URL (Address)

HTTP proxy port

HTTP proxy username

HTTP proxy password

HTTPS proxy URL (address)

HTTPD proxy port

HTTPS proxy username

HTTPS proxy password

4) How are you connecting to your network?

- PC Meter Connect
- Network Connection Point (LAN Adapter Constant Connection) or (Integrated LAN *DM475 only)
- Network Connection via DM Series™ Wi-Fi Connectivity Device

Network Firewall Access Specifications

- 1) The following file extensions must be allowed through your network and firewall:

| File Type | File Extension |
|-------------------|----------------|
| DEC | .dcz |
| EMD | .zmd |
| Graphics | .gar |
| Rate Manager | .rmz |
| CCD | .bin |
| Snippet File | .GAU |
| Data Capture File | .Kj1 |
| Rate File | .Rte |

- 2) The following top level domains must also be accessible through your network and firewall:

| Any URL containing the following: | |
|--------------------------------------|-----------------------|
| pb.com | dlsd1p1T.pb.com |
| distservp1.pb.com | dlsd1p1z.pb.com |
| cometservp1.pb.com | dlsd1p1.pb.com |
| acctservp1.pb.com | dlsd1p1b.pb.com |
| pbd1sp1.pb.com | pbd1st1.pb.com |
| pbd1sp1t.pb.com | dlsd1p1.pb.com |
| s3.amazonnaws.com (PC Meter Connect) | pbsmartpostage.pb.com |
| pbgdsp1p1a.pb.com | |

NOTE: URLs accessed by your Pitney Bowes system may contain the above strings anywhere within the URL. Firewalls must therefore be set to allow traffic to any URL containing the above domains. Your firewall may need to be configured using “wildcards”, for example *pb.com*

- 3) If IP Addresses must be used, Pitney Bowes recommends the firewall be set to allow unrestricted access to the full blocks of Pitney Bowes IP Address Ranges listed below:

- 152.144.128.0 - 152.144.128.255
- 172.28.106.0 - 172.28.107.255
- 172.31.224.0 - 172.31.224.255
- 199.231.32.0 - 199.231.47.255
- 209.85.128.0 - 209.85.255.255

- 4) Active and Passive FTP

- **Firewall on Active FTP** –Ports that should be opened on Server and Client side:
 - Server: Port 20 for data & Port 20 for Commands
 - Client: Ports >1023
- **Firewall on Passive FTP** – Ports that should be opened on Server and Client side:
 - Server: Port 21 for Commands & Ports >1023
 - Client: Ports >1023

- 5) Alternatives for restricted FTP Protocols

Some meters support using HTTPS as an alternative to FTP. If you are using PC Meter Connect, access the “Internet Settings” menu from the application and select HTTPS mode. If your meter does not support HTTPS, the option will be greyed out.

- 6) Ports and Protocols required

| Type | Protocol | Port | Function |
|-------|----------|------|---|
| DNS | UDP | 53 | Postage by Phone & Web Services |
| HTTP | TCP | 80 | Postage by Phone & Web Services |
| HTTPS | TCP | 443 | Postage by Phone Software & Rate Updates Graphics Uploads Firewall must be set to ACTIVE mode and to allow ephemeral ports |

PC Meter Connect Specifications

1. PC Meter Connect minimum PC system requirements

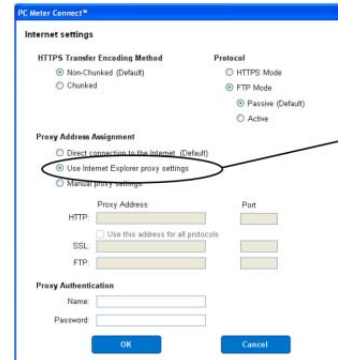
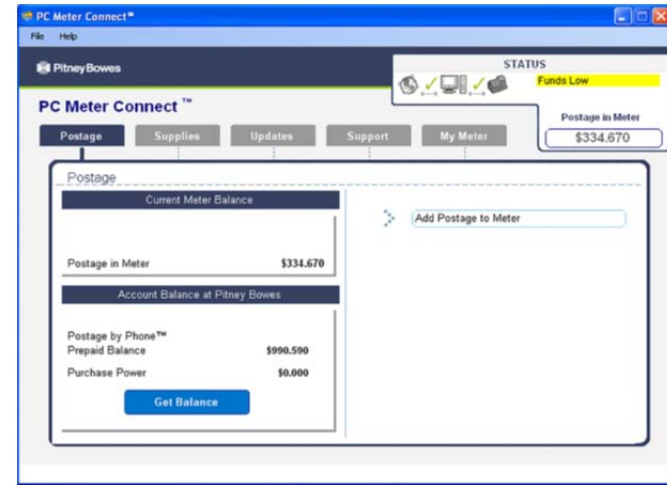
- Windows 2000, Windows XP (32-Bits and 64 Bits), Windows Vista (32-Bits and 64 Bits), and Windows 7 (32-Bits and 64 Bits)
- 1.2 GHz processor, 512 Mb RAM
- USB port
- Administrative privilege to install software
- Microsoft .NET framework 2.0 (required for PC Meter Connect) will be automatically installed if it is not ready on the PC. This is a one-time installation.
- Internet Connection
- Non-Windows Operating Systems, e.g. Mac and Linux, are not supported

2. PC Meter Connect Network Requirements

- The System (Meter and PC Meter Connect desktop application) requires an Internet connection, accessed through a Wired or Wireless LAN.
- The System supports 10/100 Ethernet transfer rates; Full Duplex.
- The System will initiate all communication.
- The System will initiate all communication via HTTP, HTTPS, and FTP.
- The System will communicate to external Web Services via HTTP over Port 80.
- The System will communicate to PB secure server(s) via HTTPS over port 443.
- The System will communicate to PB data server via FTP, reference port details below.
- The System will use Port 53 for DNS lookup.

3. Firewall Access Requirements

It is recommended your meter be connected through a firewall. If unrestricted outbound access is not allowed in a particular organization, then Network access to Pitney Bowes' servers is accomplished by allowing access to the domains listed in the Network Firewall Access Specifications (Page 6). To avoid potential future firewall issues, it is **highly recommended** domains are used instead of IP addresses, because IP addresses have a tendency to change.



Use Internet Explorer proxy settings



Use "Manual proxy settings" (and "Proxy Authentication", if used)

Constant Connection LAN Adapter Specifications

1) LAN Adapter Network Requirements

- The System requires an Internet connection, accessed through a Wired LAN.
- The System supports 10/100 Ethernet transfer rates; Full Duplex.
- The System will initiate all communication.
- The System will initiate all communication via HTTP and Active Mode FTP.
- The System will communicate to external Web Services via HTTP using port 80.
- The System will communicate to PB data server via Active Mode FTP using outbound port 21.
- The System will use Port 53 for DNS lookup.

2) FTP Type Required

- The system will use FTP “Active” mode for all FTP communication.
- On server port 20 for data and port 21 for commands must be opened.
- On the client, ports > 1023 must be opened for successful FTP connection and transfer of files.

3) Firewall Access Requirements

It is recommended your meter be connected through a firewall. If unrestricted outbound access is not allowed in a particular organization, then Network access to Pitney Bowes’ servers is accomplished by allowing access to the domains listed in the Network Firewall Access Specifications (Page 6). To avoid potential future firewall issues, it is **highly recommended** domains are used instead of IP addresses, because IP addresses have a tendency to change.

4) Communication type when meter connects to the PB Data Center

- The system uses (HTTP) on Port 80 and FTP on Port 21 for communications to Pitney Bowes Data Center Servers.
- Port 80 is used to communicate XML formatted messages requesting services.

5) HTTP Communication Type

The System only supports “chunked” HTTP Transfer Encoding communication when connecting to Postage by Phone. Your network **must** allow this type of communication. The firewall/proxy and all components along the communication path need to allow empty client side chunking messages through on port 80. Our systems use HTTP 1.1 Chunked Transfer Encoding when we communicate with Postage by Phone. HTTP 1.1 **Chunked Transfer Encoding allows HTTP messages to be broken up into several parts. Some network protection devices see this as an attack and block it. Chunked Transfer Encoding is a method in which only a portion (or chunk) of data is sent by the server in an HTTP/1.1 session.** It is often used when a server knows that it will take a long time to complete a client's request, and so it sends only small chunks of data as data is dynamically created.

Some newer versions of Meter Software will encrypt the “chunked” communication to avoid any perceived security threat that a firewall or security cloud may detect.

6) Static & Dynamic Addressing

Your System supports both dynamic and static addressing. The IP address is defaulted to automatic addressing from a DHCP Server. You can view and/or change the LAN IP settings using the meter menus described on Page 11.

Enabling Constant Connection LAN

| DM125, DM225, DM300c, DM400c | DM500 through DM1100 |
|---|--|
| Step 1: Press the Menu key, go to Data Center Options > Network Settings | Step 1: Press the Menu key |
| Step 2: Verify that Get IP is set to Auto | Step 2: Select Setup |
| Step 3: Press the Down Arrow key and verify that the MAC Addr field is populated. That indicates the Constant Connection Device's NIC Card is working | Step 3: Select Phone/Network Setup |
| Step 4: Press the Enter key | Step 4: Select Modem Type , set Modem Type to LAN |
| Step 5: Press the Home key | Step 5: Press the Down Arrow key and verify that the MAC Addr field is populated. This indicates that the Constant Connection Device's NIC Card is working |
| Step 6: The LAN should be setup to run now | Step 6: Press the Enter key |
| Step 7: Attempt a Balance Inquiry to confirm the connection is working | Step 7: Press the Home key |
| | Step 8: Attempt a Balance Inquiry to confirm the connection is working |

View/Change Constant Connection LAN IP Settings

View/Change Mailing System settings if your network uses Dynamic IP Addresses

| DM125 and DM225 | DM300c, DM400c, DM475 | DM500 through DM1100 |
|--|--|---|
| Step 1: Press the Options key | Step 1: Press the Menu key | Step 1: Press the Menu key |
| Step 2: Press the Page Down key twice | Step 2: Press the Page Down key twice | Step 2: Select Setup |
| Step 3: Select Connect-Data Center | Step 3: Select Data Center Options | Step 3: Select Phone/Network Setup |
| Step 4: Select LAN Settings | Step 4: Page Down and select network Settings | Step 4: Select More Options |
| Step 5: Verify Get IP is set to Auto | Step 5: Verify Get IP is set to Auto | Step 5: Select Network Settings |
| Step 6: Press the Home key to return to the Mail Run Screen | Step 6: Press the Home key to return to the Mail Run Screen | Step 6: Select Mailing System Network Settings |
| | | Step 7: Select Get IP Address |
| | | Step 8: Verify Get IP Address Automatically is selected |
| | | Step 9: Select Exit Setup to Return to the Mail Run Screen |

View/Change Mailing System settings if your network uses Static IP Addresses

| DM125 and DM225 | DM300c, DM400c, DM475 | DM500 through DM1100 |
|--|---|--|
| Step 1: Press the Options key | Step 1: Press the Menu key | Step 1: Press the Menu key |
| Step 2: Press the Page Down key twice | Step 2: Press the Page Down key twice | Step 2: Select Data Center Options |
| Step 3: Select Connect Data Center | Step 3: Select Data Center Options | Step 3: Select Network Settings |
| Step 4: Select LAN Settings | Step 4: Page Down and select Network Settings | Step 4: Select Get IP |
| Step 5: Select Get IP | Step 5: Select Get IP | Step 5: Select Specify Address Manually |
| Step 6: Select Manually | Step 6: Select Specify Address Manually | Step 6: Select IP Addr , Press the Clear key, and enter the value provided by your Network Administrator. Press Enter to accept. |
| Step 7: Select IP | Step 7: Select IP Addr | Step 7: Select Subnet , press the Clear key, and enter the value provided by your Network Administrator. Press the Enter key to accept. |
| Step 8: Enter the IP value determined by your Network Administrator. Select Accept IP Addr to continue | Step 8: Enter the IP value determined by your Network Administrator. | Step 8: Select Gateway , press the Clear key, and enter the value provided by your Network Administrator. Press the Enter key to accept |
| Step 9: Enter the Sub value determined by your Network Administrator. Select Accept Sub Addr to continue | Step 9: Select Subnet | Press the Enter key to save your changes |
| Step 10: Enter the Gwy value determined by your Network Administrator. Select Accept Gwy Addr to continue | Step 10: Enter the Sub value determined by your Network Administrator. Select Accept to continue | Press the Home key to return to the Mail Run Screen. |
| Step 11: Press the Home key to return to the Mail Run Screen | Step 11: Select Gateway | |
| | Step 12: Enter the Gateway value determined by your Network Administrator. Select Accept to continue | |
| | Step 13: Press the Home key to return to the Mail Run Screen | |

Network Proxy Configurations (HTTP/HTTPS Connections)

| DM125 (PR00) | DM300c, DM400c, DM475 | DM500 through DM1100 |
|---|-----------------------|----------------------|
| Step 1: Press the Options key | | |
| Step 2: Press the Page Down key twice | | |
| Step 4: Select LAN Settings | | |
| Step 5: Press the Page Down key once | | |
| Step 6: Select Proxy | | |
| Step 7: Select Enabled : <YES/NO> if applicable | | |
| Step 8: Select HTTP or HTTPS Settings (whichever applicable) | | |
| Step 9: Select and Enter Address (Addr), Port, User (whichever applicable) | | |
| Step 10: Press the Page Down key once | | |
| Step 11: Select PWD (if applicable) | | |
| Step 12: Select Done | | |
| Step 13: Page Down | | |
| Step 14: Select Exclusions if applicable | | |
| Step 15: Set Distributor to <YES/NO> if applicable | | |
| Step 16: Set PBP to <YES/NO> if applicable | | |
| Step 17: Set Updates to <YES/NO> if applicable | | |
| Step 18: Set Accounting to <YES/NO> if applicable | | |
| Step 19: Select Done | | |
| Step 20: Press the Home key to return to the Mail Run Screen | | |

DM Series™ Wi-Fi Connection Device Specifications

1) Wi-Fi Connection Device General Specifications

- Wireless Standards: IEEE 802.11n, IEEE 802.11g, IEEE 802.11b
- Protocols: TCP/IP, PPPoE, DHCP, ICMP, NAT, SNTP
- Interface/Ports: 1 10/100Mbps WAN/LAN Port, Micro USB Port, Reset Button
- Cabling:
 - 10BASE-T: UTP category 3, 4, 5 cable (Max 100m) EIA/TIA-568 100Ω STP (Max. 100m)
 - 100BASE-TX: UTP Category 5, 5e cable 9Max. 100m) EIA/TIA-568 100Ω STP (Max> 100m)
- Safety & Emissions: FCC, CE
- Dimensions: 57mm x 57mm x 18mm (W x D x H)

2) Wireless Specifications

- Frequency: 2.4 – 2.4835GHz
- Interface: 1 10/100Mbps WAN/LAN Port, Micro USB Port, Reset Button
- Signal/Radio Data:
 - 11n: Up to 150Mbps (Dynamic)
 - 11g: 54/48/36/24/18/12/9/6M (Dynamic)
 - 11b: 11/5.5/2/1M (Dynamic)
- Frequency Expansion: DSSS (Direct Sequence Spread System)
- Modulation: DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, BPSK, QPSK
- Wireless Securities: 64/128/152 – bit WEP, WPA, WPA2, WPA-PSK, WPA2-PSK
- Receive Sensitivity
 - 135M:-70dBm@10%PER
 - 65M:-73dBm@10%PER
 - 54M:-76dBm@10%PER
- Wireless Modes: Client Mode

3) Enabling the Mailing Machine Connection

- Initially the Wi-Fi Connection device must be connected to a PC via the provided USB cable and network cable
- The PC is used to configure the device and make an initial connection to your chosen Wi-Fi network
- Once the device is connected to your PC open the web browser and enter <http://pitneyboweslogin.net>.
- The **Username is admin**, and the **Password is admin**
- Select **Next** from the **Quick Setup** menu
- Select **Client Mode** and select **Next**
- Enter the appropriate settings for your wireless network.

- Once the device has been configured for your network, it can be unplugged from the PC and connected to your Mailing System. Your mailing system can then make use of the Wi-Fi connection
- You should have a working knowledge of your wireless network in order to complete the setup successfully. If you have difficulty following the steps provided in the Setup Guide that is included with the Wi-Fi device package, consult with your Network Administrator.

4) Required information to setup the Wi-Fi Device in Client Mode

The Network SSID:

The Access Point MAC Address:

The password for the Access Point you are connecting to:

The security configuration of the access point you want to access.

The WEP Key index (Applicable if key type is WEP (ASCII) or WEP (HEX)).