Symbol Access Points

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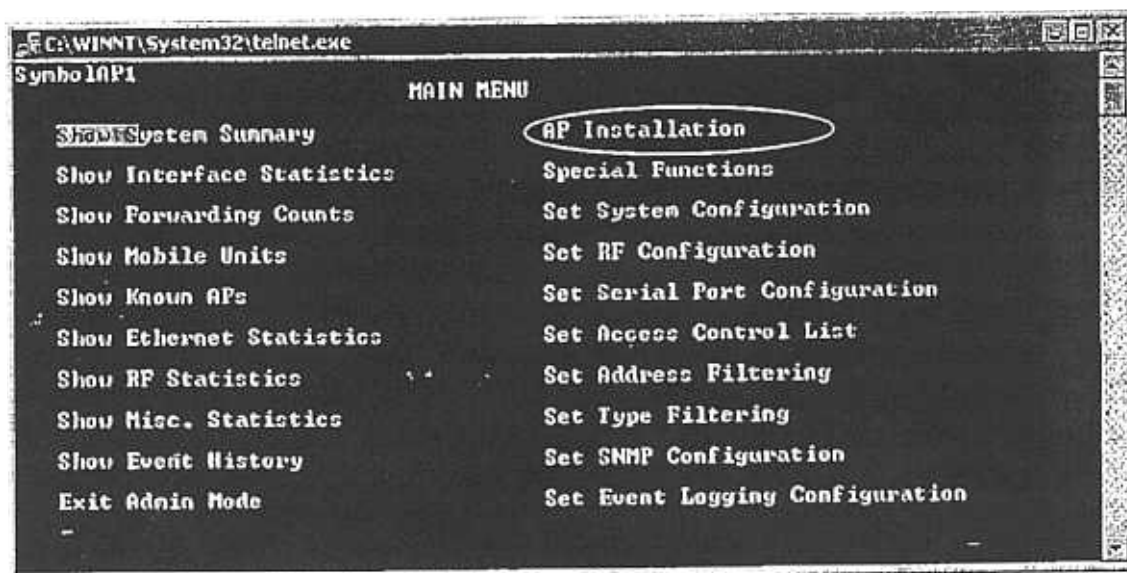## Connecting serially to AP4131 Access Point:

You will need to initially assign an IP address for each access point.
This procedure is for the AP4131 (802.11b access point).

- Connect a null modem cable (61383-00-00) from the computer's serial
  port to the access point's serial port.
  On the computer, use a communication software package. This can be
  something like Hyper Terminal.
    o Select Com1, Set the communications parameters as follows:
       baud=**19,200**, data bits=**8**, stop bits=**1**, parity=**none**, flow
       control=**none**.
- Once you successfully attach to the access point, the Main Menu will be
  displayed. If you first do not get the Main Menu screen press the <ESC>
  key.

```
C:\WINNT\System32\telnet.exe
Symbol AP1
                              MAIN MENU
  Show System Summary              ( AP Installation )
  Show Interface Statistics          Special Functions
  Show Forwarding Counts             Set System Configuration
  Show Mobile Units                  Set RF Configuration
  Show Known APs                     Set Serial Port Configuration
  Show Ethernet Statistics           Set Access Control List
  Show RF Statistics                 Set Address Filtering
  Show Misc. Statistics              Set Type Filtering
  Show Event History                 Set SNMP Configuration
  Exit Admin Mode                    Set Event Logging Configuration
```

- Using the Tab key Select [Enter Admin Mode]
   You will be asked for a password. The default password is "*Symbol*".

Cable
25-63247 01

Access Point Installation Screen:

From the Main Menu highlight and select [AP Installation]
The following screen will appear:

```
┌─────────────────────────────────────────────────────────────────────────┐
│ e Symbol - HyperTerminal                                      _|□| x|     │
│ File Edit View Call Transfer Help                                         │
│ D|☞| ☺|⧨| ⧉|⧩| ☞|                                                          │
│ ┌───────────────────────────────────────────────────────────────────┐ ▲ │
│ │ Symbol Access Point                                               │   │
│ │                          Access Point Installation               │   │
│ │                                                                   │   │
│ │   [Country Config-[CR]  (Not Configured)                          │   │
│ │                                                                   │   │
│ │   Unit Name            Symbol Access Point                        │   │
│ │                                                                   │   │
│ │   IP Address            10.12.0.227                               │   │
│ │                                       .Additional Gateways        │   │
│ │   .Gateway IP Address  0.0.0.0                                    │   │
│ │                                        0.0.0.0        0.0.0.0      │   │
│ │   .Subnet Mask          255.255.255.0  0.0.0.0        0.0.0.0      │   │
│ │                                        0.0.0.0        0.0.0.0      │   │
│ │   .DNS IP Address       0.0.0.0        0.0.0.0                     │   │
│ │                                                                   │   │
│ │   .Net_ID (ESS)         822                                       │   │
│ │                                                                   │   │
│ │   .Antenna Selection  Full Diversity  .Additional DNS             │   │
│ │                                                                   │   │
│ │   .DHCP/BOOTP          Disabled        0.0.0.0       0.0.0.0       │   │
│ │                                                                   │   │
│ │   OK-[CR]       Save-[F1]      Save All APs-[F2]     Cancel-[ESC]  │   │
│ │         (Most parameters take effect only after being saved and AP is reset) │
│ └───────────────────────────────────────────────────────────────────┘ ▼ │
│ Connected 0:07:25   ANSIW    19200 8-N-1   ...   [CAP2 [NUM  [Capture [P...]│
└─────────────────────────────────────────────────────────────────────────┘
```

The below items underlined are the minimum that will need to be configured

> Unit Name
> <u>IP Address</u>
> Gateway IP Address
> <u>Subnet Mask</u>
> <u>Net ID (ESS)</u>
> <u>DHCP</u>

Unit Name: This is optional. This simply assigns a physical name to the access point.

- <u>IP Address</u>: This is required. Each access point will need a unique IP address.
- Gateway IP Address: This will be needed only if a Gateway \ Router is being used. After you have entered an IP address you could configure the access point via web browser if you wish. To do this save the configuration (press <F1>) and reboot the access point. To continue configuration using a serial connection continue with the step below.

- Subnet Mask: This value will need to be the same as the network the access point is attaching to. This value will be the same for each access point.
- Net ID: This value should be given a different value from default value. This value will be the same for each access point.
- DHCP: This should remain disabled.
- When data has been entered press <F1> to save and return to the Main Menu.

Set System Configuration

From the Main Menu highlight and select [Set System Configuration]
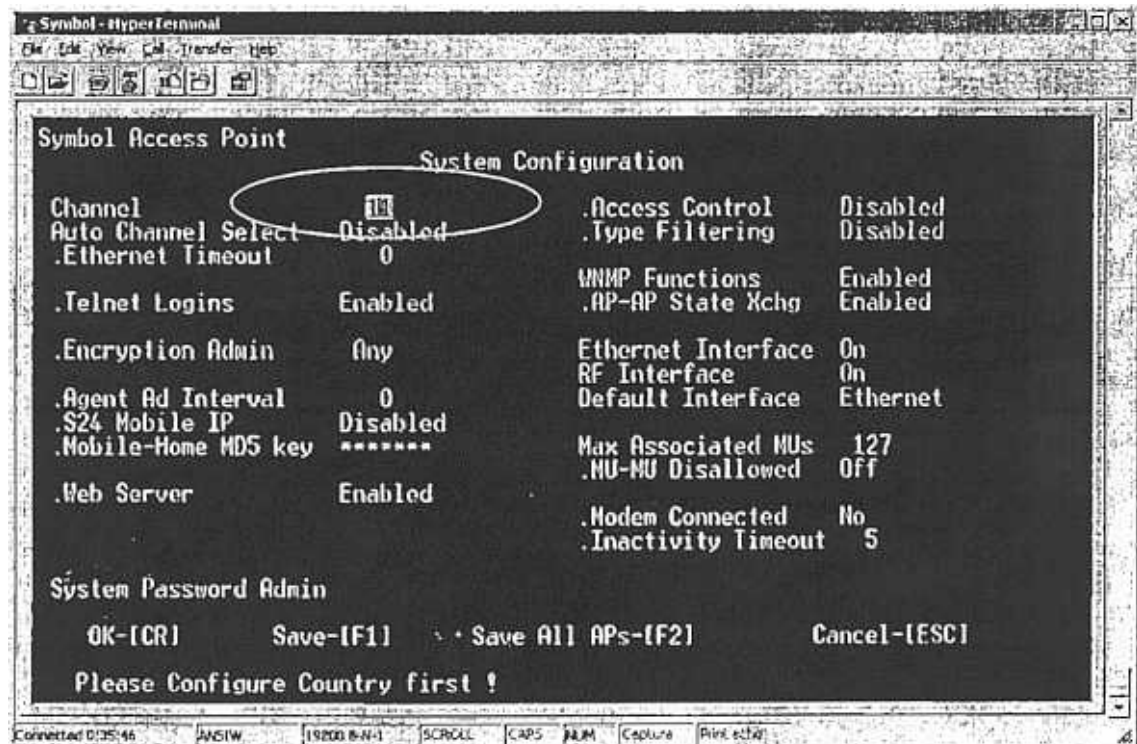
The items below are the minimum that will need to be configured.

Select Channel and enter either 1,6, or 11.
When data has been entered press <F1> to save and return to the Main Menu.

Set Special Functions

From the Main Menu highlight and select [Special Functions]

WEP

1   Use the <TAB> key to highlight and select [*Configure WEP Encryption*]
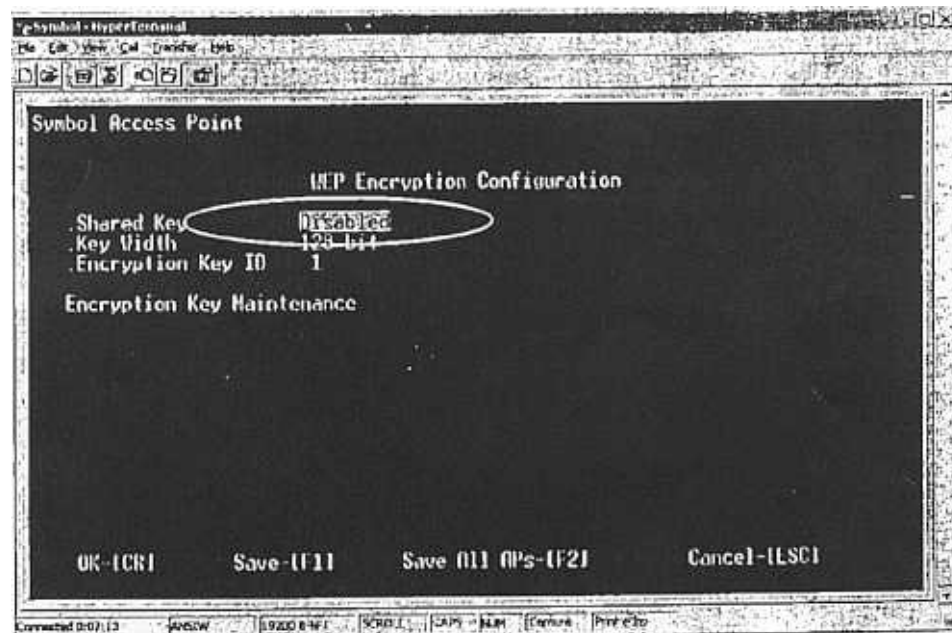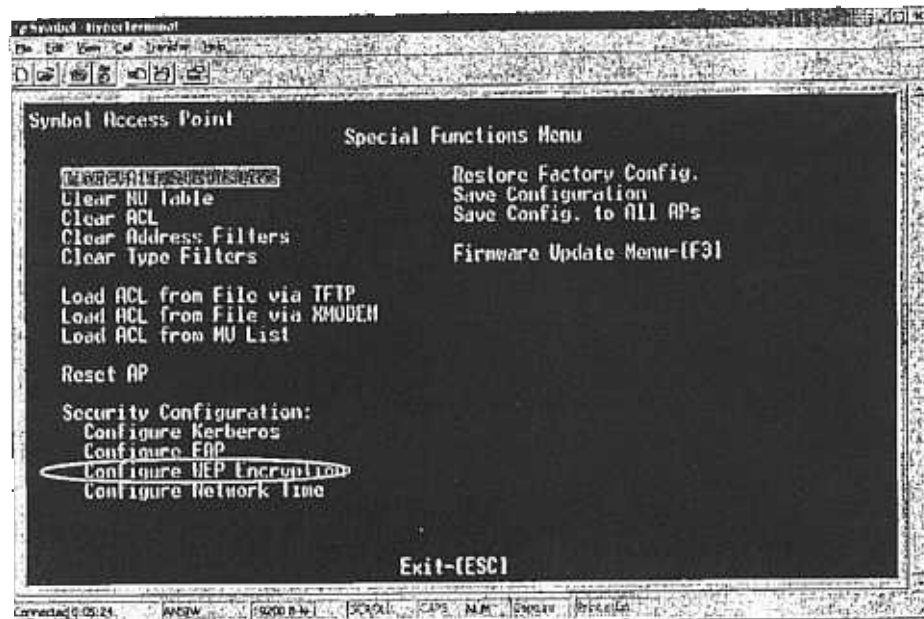
2. If WEP is not being used insure that the *Shared Key* value is *Disabled*.
    Press <ESC> to return to the Main Menu.
3. If WEP will be used use the <Space> key to select *Enabled* for the
    Shared Key.
4. Use the <TAB> key to select [*Key Width*] then use the <Space> key to
    select either *40-bit* or *128-bit* Encryption. You will need to press the
    <Enter> for your selection to take effect. This will take you back to the
    Special Functions Menu. You will need to go back into the WEP
    configuration section.
5. Use the <TAB> key to select [*Encryption Key ID*] then enter the
    appropriate Key ID of 1, 2, 3, or 4.
6. Use the <TAB> key to select [*Encryption Key Maintenance*] and press
    <Enter>.
7. Use the <TAB> key to select the appropriate passkey and enter the
    appropriate WEP values. You will enter a 10 digit hexidecimal value
    for 40-bit WEP and a 26 digit hexadecimal value for 128-bit WEP.
8. When data has been entered <TAB> down to *Save [F1]* and press
    <Enter>.

40-bit
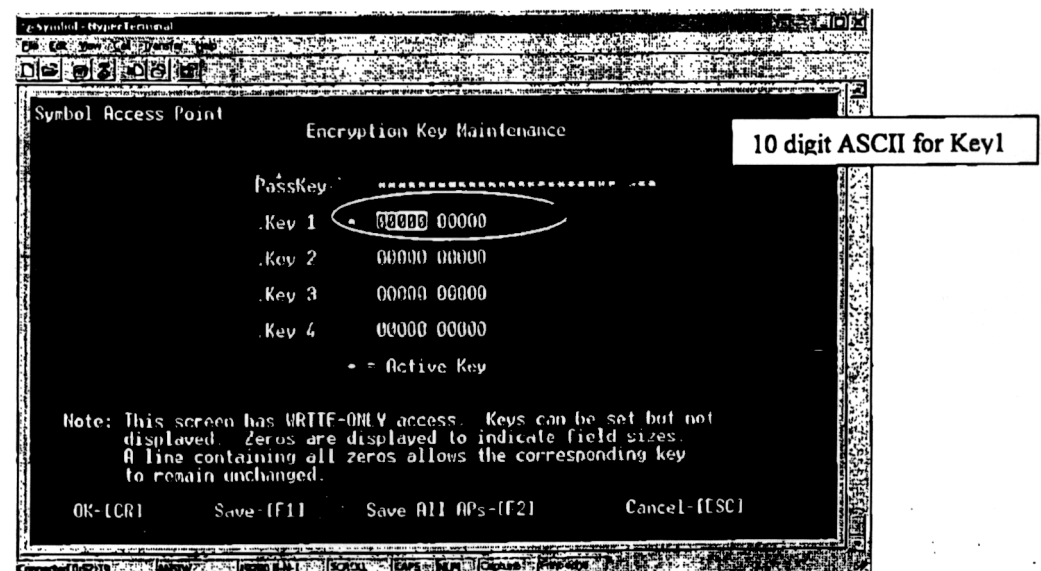
128-bit
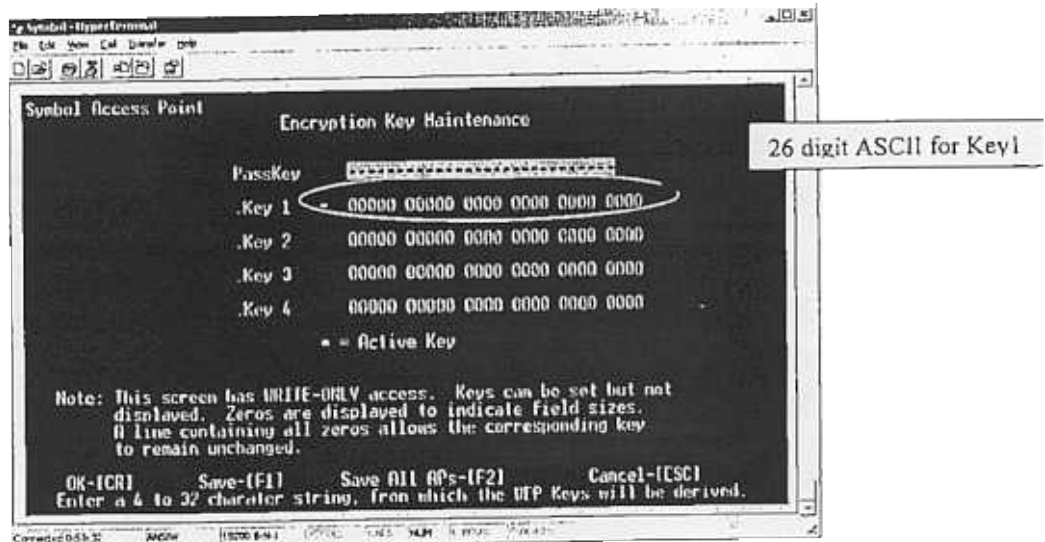
Save Configuration
1. Return to the Main Menu (pressing <ESC> key).
2. Select *Special Functions.*
3. *Select Save Configuration.*
4. Select *Yes.*

Reboot
Return to the Main Menu (pressing <ESC> key)
2. Select *Special Functions.*
3. *Select Reset AP.*
4. Select *Yes.*

Ping
1   You can test wireless connectivity by performing a Ping to the access point.
2. On the PC click on <Start> then click on <Run>.
3   Type Ping xxx.xxx.xxx.xxx (where the xs are the IP address of the access point). A short display will indicate whether ping was successful.
4. Remember the PC will need a static IP address similar to the access point.

Telnet
1. After an IP address has been assigned you can gain access to the access point via a telnet session.
2   On the PC click on <Start> then click on <Run>.
3. Type Telnet xxx.xxx.xxx.xxx (where the xs are the IP address of the access point).
4. You will have the same access as you had during a serial connection. The display screens will look the same also.

3 Enter the User Name and Password of *Symbol* to gain access to configuration screens. The following screen will display.
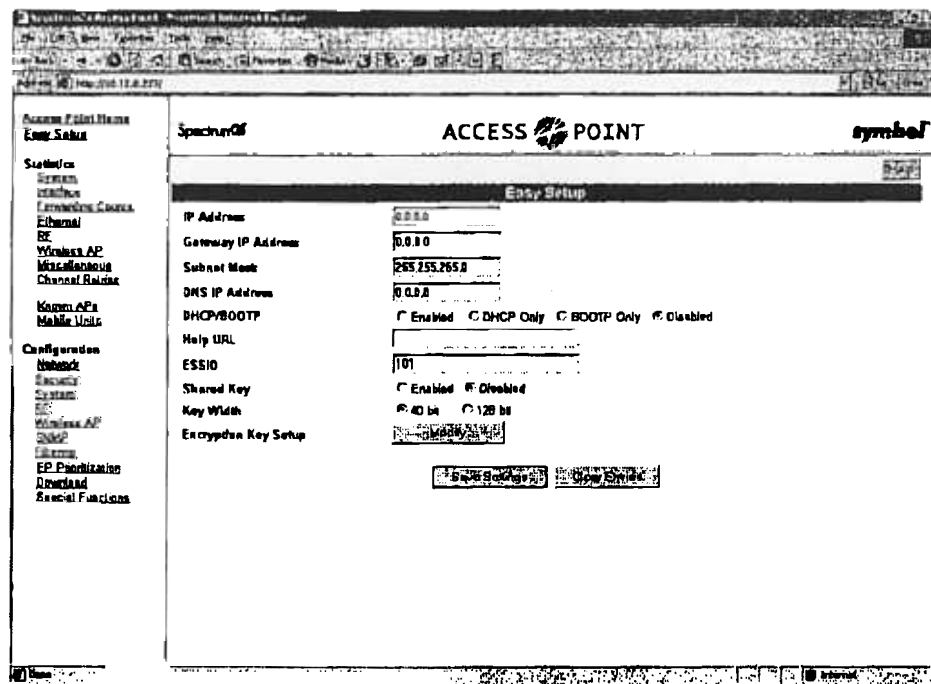
4. IP address: Enter the desired IP address.
5. Gateway IP address: If using a router or gateway enter the IP address, if not leave it at 0.0.0.0
6. Subnet Mask: Enter the appropriate Subnet Mask.
7. DHCP: Disable DHCP if manually entering IP Addresses. If using DHCP skip to step 8.
8. ESSID: Enter the desired ESSID value. This value can be anything. Suggest strongly change it from the default value.
9. Shared Key: This is the WEP setting to *Enable* or *Disable*.
10. Key Width: If using WEP select whether 40 bit or 128 bit will be used. If WEP is not used ignore this.
11. Remember to save your entries by clicking *Save Settings*.
12. Encryption Key Setup: If using WEP click on *Modify* to enter the WEP values. Please remember to click on *Save Settings* before leaving this screen. The following screen will appear. If WEP is not being used skip this.

WEP Settings

Screen for 40 bit WEP

Screen for 128 bit WEP

1. Selected the desired WEP key (1, 2, 3, or 4).

2   Enter the desired value in the fields adjacent to the selected WEP key. If 40 bit WEP is being used a 10 digit hexadecimal value will be entered. If 128 bit WEP is being used a 26 digit hexadecimal value will be entered.

3   Remember to click on *Save Settings*.

Reboot

Click on *Special Functions* under *Configuration* in the left border.

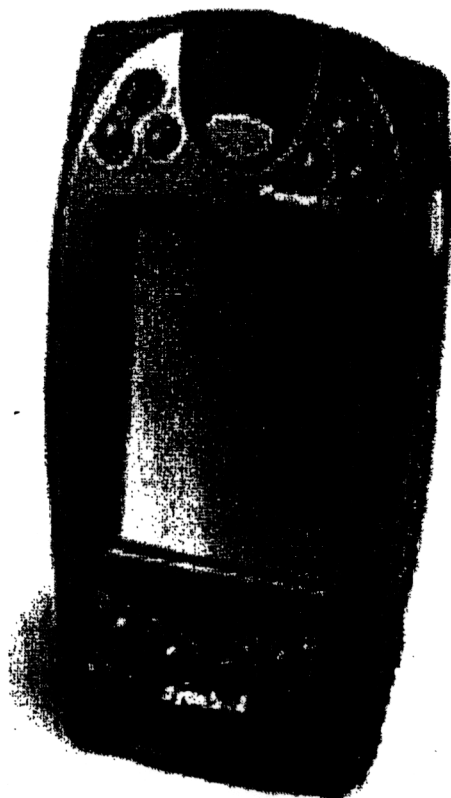2   Select *Reset AP* and click *Perform Functions*.

Ping

You can test wireless connectivity by performing a Ping to the access point.

2   On the PC click on <Start> then click on <Run>.

3   Type Ping xxx.xxx.xxx.xxx (where the xs are the IP address of the access point). A short display will indicate whether ping was successful.

4   Remember the PC will need a static IP address similar to the access point.

Configuration of Symbol 2846 Pocket PC Wireless Terminals

Table of Contents:

Network Adapter

1. Select *Settings* from the *Start* menu.
2. Select *Network Adapters* from the *Connections* tab.
3. Select *Spectrum 24 802.11b* then click on *Properties*.

IP Address:

```
┌──────────────────────────────────────┐
│ 🪟 Settings         ⊕ ◀€ 10:41  ⓞⓚ │
│ 802.11b Wireless LAN                  │
│                                        │
│   ⦿ Use server-assigned IP address    │
│                                        │
│   ○ Use specific IP address           │
│                                        │
│        IP address: [   .   .   .    ] │
│      Subnet mask:  [   .   .   .    ] │
│   Default gateway: [   .   .   .    ] │
│                                        │
│  IP Address  Name Servers             │
│ 123 1 2 3 4 5 6 7 8 9 0 - = ◀         │
│ Tab q w e r t y u i o p [ ]           │
│ CAP a s d f g h j k l ; '             │
│ Shift z x c v b n m , . / ↵           │
│ Ctl áü ` \          ↓ ↑ ← →           │
│                          ▦ 🔲         │
└──────────────────────────────────────┘
```

¬1. If IP address is to be obtained via DHCP no additional setup is needed but to insure "Use server-assigned IP address" is selected.
2. If IP address is to be entered manually enter a unique IP address for each wireless device with the Subnet mask. If a gateway is to be used enter the IP address. If not using a gateway leave this field blank.
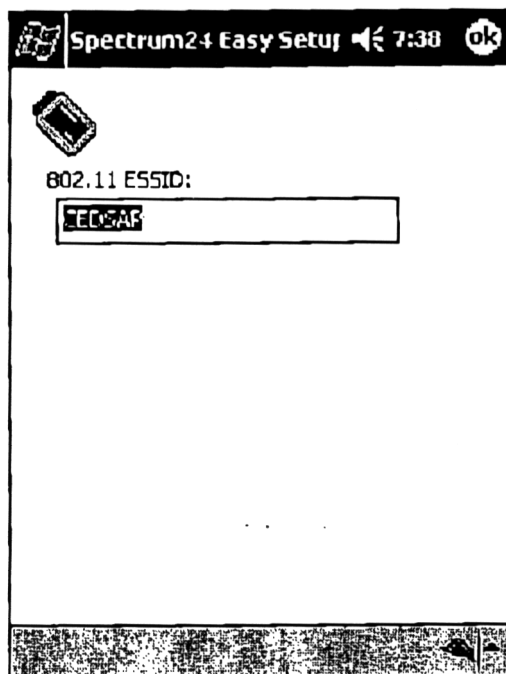3. Click *OK* to continue. Continue with OK until the Settings screen appears again.

Wireless Network Settings:

The Symbol Status screens can also be used to configure the Symbol 2846

wireless device. Click on the Symbol Status icon ▮ in the lower right hand corner of the 700 displays.

2. Scroll using the Right\Left arrows to select the appropriate category.

ESSID:

Enter the desired ESSID value. This should be the same as the access point.

WEP:

To set WEP values use the right arrow to select **Encryption**

1. If no WEP will be used insure Open System (no encryption) is selected and press OK.
2. If WEP will be used select either **40-bit or 128**-bit shared key from the pull down window.
3. Select the desired Shared Encryption key (ie 1,2,3,4). This will be the same as the access point.
4. Enter the WEP value in the appropriate field and click **OK**. For 40-bit enter a 10 digit hexadecimal value in the 2 fields indicated below for 40-bit WEP. For 128-bit enter a 26 digit hexadecimal value in all 6 fields.
5. When complete click **Apply** then **OK**.
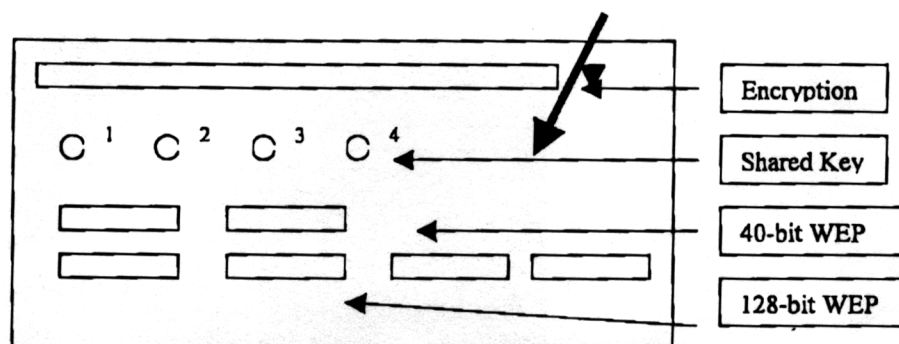
Confirming Association:

You can confirm association with access point in several ways

Click on the Symbol Status icon   in the lower right hand corner of the 2846 displays.
2   Using the right arrow select **Signal**.
3   If associated the display will indicate signal strength and which AP it is associated with.

Ping:

1   Click on the Symbol Status icon   in the lower right hand corner of the 2846 displays.
2. Using the right arrow select **Ping**.
3   Enter the IP address of the device you wish to ping and click **Start Test**.