

Configuration Guide

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OkiLAN 510w Configuration Guide, P/N 59368001 Rev 1.0

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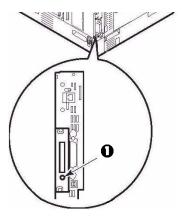
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BASIC INFORMATION

Self-Diagnostic Test

To print the self-diagnostic test for the wireless network card:

- 1. Make sure Ready to Print appears on the display.
- 2. Press the TEST button (1) on the wireless network card for at least 3 seconds.



The Network Summary report prints.

2.	letwork	,		
		l	PCI Slot2:Wi	reless IEEE802.11g
General Inform	ation		Strue	PCI Slot1: 100/10 Base Wired Ethernet PCI Slot2: Wireless IEEE802.11g
Network Function Name	MLETB14w		Firmware Version	03.A6
			OkiWebRemote	W3.36
MAC Address	00:80:92:08:0F:44		Wireless FW / ID	00.19 / 01000403 00 314C434C
Wireless Status	< Infrastructure : 1ch / 54Mbps : Authentication Status Link Quality / Signal Strength	 default OK(Open) 76% / 76% 		
Network Status	Unicast Packets Received Packets Transmitted Total Packets Received Bad Packets Received	8 49 10 0		
TCP/IP Protocol	Enable		Web Service Telhet Service FTP Service SNMP Service	Enable Enable Enable Enable
CP/IP Config	uration			
IP Address Set	MANUAL			
IP Address	192.168.0.4			
Subnet Mask	255.255.255.0			
Default Gateway	192.168.0.1			
Web Address	http://192.168.0.4			
Auto Discovery				
Windows(Network	Plug and Play)	Enable		
Macintosh(Rendez	vous)	Enable		
			INE9600PS-080F44	

Basic Information

SPECIFICATIONS

INDE	• 802.11b • 802.11g		
SECURITY:	Authentication	Encryption	
WEP	Shared Key	WEP 64 or 128 bits	
WPA-Home	WPA-PSK	ТКІР	
WPA-Enterprise	EAP-TLS	ТКІР	
PROTOCOL	TCP/IP		
COEXISTENCE WITH WIRED PRINT SERVER	 Both can work simultaneously as independent interfaces Each has separate configuration (including IP Address) and separate certificates. Packet routing is not performed between the two. 		

RESETTING TO FACTORY DEFAULTS

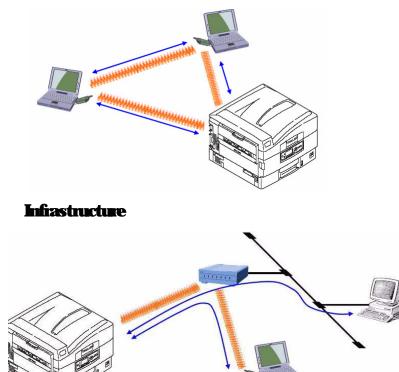
To reset the wireless card to the factory default settings:

- 1. Turn off the printer.
- Press and hold the TEST button on the wireless card while turning the printer back on. Keep pressing the button until Wait a Moment Network Initializing appears on the display.
- 3. Wait for Ready to Print to appear.

CONFIGURATION OVERVIEW

NETWORK MODES

Ad-Hoc

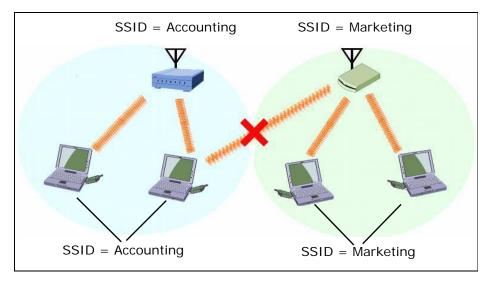


Configuration Overview

SSID (SERVICE SET IDENTIFIER)

In a wireless network, terminals can be assigned an SSID identifier which restricts their access to printers on the network to only those set up for that SSID.

For example, computers set up as Accounting can only communicate to a printer through the Marketing access point (AP) and computers set up as Marketing can only communicate to a printer through the Marketing access point:



CHANNELS_

There are 13 channels available for use in a wireless network. However, adjacent channels share a frequency and can interfere with one another.

Therefore, to obtain maximum communication speed and accuracy, channels for access points which are near each other should be selected with 5 channels space between them: e.g., channels 1, 6 and 11.

SECURITY FEATURES

Open (no security)

This can be used, but is not recommended.

WEP

Wired Equivalent Privacy, assuring wireless network security equivalent to a wired network.

Set the same WEP key (64 or 128 bits) for all printers, computers and access points on the wireless network.

WPA

WiFi Protected Access security, using TKIP encryption. This security uses a pre-shared key set for all printers, computers and access points in the wireless network. The key is periodically changed.

EAP (Using Certificates)

Extensible Authentication Protocol security. In wireless communications using EAP, connection to the wireless network is requested through an access point, which in turn transmits the certificate assigned to the computer and printer to an authentication server such as RADIUS.

- EAP-TLS is used for authentication.
- Client and/or CA certificates must be imported into the printer.
- Certificates must be obtained separately by the network administrator before setting the printer for EAP.

Client Certificates

- This is the printer's own certificate.
- The client must have a private key which corresponds to a public key contained in the certificate.
- Required file format for imported certificates = [PKCS#12].
- Suitable file extensions include *.p12 and *.pfx.

CA Certificates

• The printer is not involved in the CA certificate chain.

Configuration Overview

- EAP-TLS requires authentication of the Server Certificate issued by a Certificate Authority and sent from a RADIUS server.
- Certificate Authentication requires that the printer have a certificate issued by the Certificate Authority that issued the Server Certificate.
- Required file formats = [PEM] or [DER].
- Suitable CA Certificate extensions include *.pem, *.der and *.cer.

SUMMARY OF CONFIGURATION MODES

AD HOC MODE

In this mode, wireless computers communicate with the printer peer-to-peer, gaining access through an SSID you set.

Available security features for Ad Hoc Mode:

- Open (no security)
- WEP Shared Key Security

INFRASTRUCTURE MODE

In Infrastructure Mode both wireless and wired computers communicate to the printer through an access point such as a hub.

Available security features for this mode include

- Open (no security)
- WEP Shared Key Security
- WPA Pre-Shared Key Security
- EAP Certification Security

Telnet Mode _

This mode sets up the printer using Telnet commands.

Available security features for this mode include

- Open (No Security)
- WEP Shared Key Security
- WPA Pre-Shared Key Security
- EAP Certification Security

CONTROL PANEL MODE

You can also configure the wireless card through the printer's control panel, but this mode is very limited.

10 Summary of Configuration Modes

You can set up an SSID of your choice for accessing the printer over a wireless network, but no other security can be configured through the control panel.

11 Summary of Configuration Modes

CONFIGURATION: AD HOC MODE

NOTE

These instructions assume the following:

- You have connected the printer's built-in print server.
- You have configured both the printer's and computer's IP Address, Subnet Mask and Default Gateway.

IP ADDRESS

For the Wireless Card

The IP Address for the wireless card is set automatically. It appears on the wireless card Network Summary printout (see page 4) under TCP/IP Configuration.

To set the IP Address manually, use the printer menu:

- 1. With **Ready to Print** on the display, press **ENTER** to switch to the Menu Mode.
- **2.** Use the ∇ and Δ buttons to scroll to [Admin Setup]. Press **ENTER**.
- **3.** Use the ∇ , Δ and **ENTER** buttons to enter your 4-digit password (default is 0000). Press **ENTER**.
- Use the ∇, ∆ and ENTER buttons to scroll to [Network Setup] → [Slot2:Wireless] → [IP Address Set], then select [Manual]. Press ENTER.
- **5.** Use the ∇ , Δ and **ENTER** buttons to enter the IP Address. Press **ENTER**.
- 6. Press BACK.
- Use the ∇ and ∆ buttons to scroll to [Subnet Mask], then use the ∇ and ∆ buttons to set the Subnet Mask values. Press ENTER.

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Configuration: Ad Hoc Mode

- 8. Press BACK.
- 9. Use the ∇ and ∆ buttons to scroll to [Gateway Address], then use the ∇ and ∆ buttons to set the Gateway Address. Press ENTER.
- 10. Press ON-LINE to exit the Menu mode.

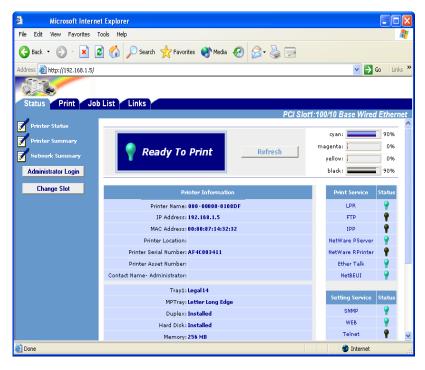
For the Wireless Computer

Set the IP Address using Microsoft Windows® Control Panel.

CONFIGURATION

Configuration Using Web Browser

- **1.** Open the browser.
- **2.** Enter the IP Address for the printer's built-in print server and press the Enter key.



3. Click [Change Slot].

13

Configuration: Ad Hoc Mode

4. Select PCI Slot2: Wireless, then click [OK].

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ldress 🕘 http://192.168.1.5:/2	/index.htm	🔽 🄁 Go 🛛 Links
AT A A A A A A A A A A A A A A A A A A		
Status Print Job	D List Links	CI Slot2:Wireless IEEE802.11
Printer Status	F	a Slotz. Wireless ILLLOVZ. II
Printer Summary		cyan: 90%
	Ready To Print Refresh	magenta: 70%
Network Summary	Kenesii	yellow: 70%
Administrator Login		black: 90%
Change Slot	Printer Information	Print Service Status
	Printer Name: 000-00000-0108DF	LPR 💡
	IP Address: 192.168.1.6	FTP 💡
	MAC Address: 00:80:92:01:08:DF	IPP 📍
	Printer Location:	
	Printer Serial Number: AF4C003411	Setting Service Status
	Printer Asset Number:	SNMP 🥊
	Contact Name- Administrator:	WEB 🥊
	Tray1: Letter Long Edge	Telnet 🥊
	MPTray: Letter Long Edge	
	Duplex: Installed	
	Hard Disk: Installed	
	Memory: 256 MB	
	Version Information	
	CU Firmware: 01.26	
	PU Firmware: 00.00.87	
	Network Firmware: 03.AF	
		Internet

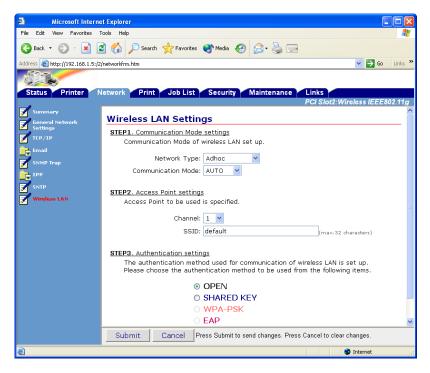
- 5. Click Administrator Login.
- 6. Enter

```
User ID = root
```

Password = last six digits of the Mac (Ethernet) Address for the wireless card (under General Information on the Network Summary printout-see page 4), minus the punctuation marks.

- 7. Click [Skip].
- 8. Select the [Network] tab.

9. Click [Wireless LAN] on the left side of the screen.



- **10.** Make your selections:
 - Network Type = Ad Hoc
 - Communication Mode = AUTO or 802.11b
 - Channel = 1 through 13 (to ensure speed and accuracy when using wireless access points which are near each other, be sure to leave 5 blank channels between assigned channels; e.g., select channels 1 / 6 / 11)
 - SSID = (name you select)
 - Authentication = Open or Shared Key (WEP)
- **11.** Click [Submit].

Configuration Using AdminManager

NOTE

If you are using AdminManager to configure the wireless card, and you have not installed the utility on your computer, you will need the CD supplied with your printer to launch the utility.

- 1. Launch AdminManager:
 - From your computer: [Start] \rightarrow [Programs] \rightarrow [OKI Setup Utility] \rightarrow [Admin Manager]
 - From CD, after AutoRun: [(Language]) \rightarrow [Next] \rightarrow [Custom Install] \rightarrow [Network Software] \rightarrow [Installation/Config] \rightarrow [Admin Mgr / Quick Setup] \rightarrow [(language)] \rightarrow [OKI Device Standard Setup] \rightarrow [Execute from CD-ROM] \rightarrow [Next].
- 2. Wait for the software to discover the printer (if automatic discovery fails, click [File] \rightarrow [Search]). The printer appears as MLETB13 or OkiLAN8200e.

🐼 AdminManager									
File Status Setup	Option Help								
Model Name	Ethernet Address	IP Address	Print Server Name						
<			>						

- **3.** Click the discovered printer, then select [Oki Device Setup] from the Setup menu.
- 4. Select [Guest User], click [OK].

- 5. On the [General] tab, click [Change SLOT], then click [Yes].
- 6. Referring to the Network Summary printout for the wireless card (under General Information), enter the last six digits of the Mac address as the password (minus any punctuation), then click [OK].
- 7. Scroll over to the far right and click the [Wireless] tab.

Device Setup [SLOT 2]	? 🗙
E-Mail(Send) E-Mail(Receive) SNTP Ma	intenance SSL/TLS Wireless
Network Type	Ad-Hoc 💌
Communication Mode	Auto
SSID	default
Authentication	Open 💌
Channel	1
Initialize	Apply Cancel

- 8. Make your selections:
 - Network Type = Ad Hoc
 - Communication Mode = AUTO or 802.11b
 - SSID = (name you select)
 - Authentication = Open or Shared Key (WEP)
 - Channel = 1 through 13 (to ensure speed and accuracy when using wireless access points which are near each other, be sure to leave 5 blank channels between assigned channels; e.g., select channels 1 / 6 / 11)
 - SSID = (name you select)
- 9. Click [Initialize].

CONFIGURATION: INFRASTRUCTURE MODE

NOTE

These instructions assume the following:

- You have connected the printer's built-in print server to a computer via an access point.
- You have configured both the printer's and computer's IP Address, Subnet Mask and Default Gateway.

IP ADDRESS

For the Wireless Card

The IP Address for the wireless card is set automatically. It appears on the wireless card Network Summary printout (see page 4) under TCP/IP Configuration.

To set the IP Address manually, use the printer menu:

- 1. With **Ready to Print** on the display, press **ENTER** to switch to the Menu Mode.
- **2.** Use the ∇ and Δ buttons to scroll to [Admin Setup]. Press **ENTER**.
- **3.** Use the ∇ , Δ and **ENTER** buttons to enter your 4-digit password (default is 0000). Press **ENTER**.
- Use the ∇, ∆ and ENTER buttons to scroll to [Network Setup] → [Slot2:Wireless] → [IP Address Set], then select [Manual]. Press ENTER.
- **5.** Use the ∇ , Δ and **ENTER** buttons to enter the IP Address. Press **ENTER**.
- 6. Press BACK.

- Use the ∇ and ∆ buttons to scroll to [Subnet Mask], then use the ∇ and ∆ buttons to set the Subnet Mask values. Press ENTER.
- 8. Press BACK.
- 9. Use the ∇ and ∆ buttons to scroll to [Gateway Address], then use the ∇ and ∆ buttons to set the Gateway Address. Press ENTER.
- 10. Press ON-LINE to exit the Menu mode.

For the Computer

Set the IP Address using Windows Control Panel.

CONFIGURATION

Configuration Using Web Browser

- 1. Open the browser:
 - Microsoft[®] Internet Explorer 5.5 or higher
 - Netscape[®] 6.2 or higher.

2. Enter the IP Address for the wireless card and press the Enter key.

Microsoft Interr	iet Explorer	
File Edit View Favorites	Tools Help	<u></u>
🕞 Back 🝷 🌍 🕤 📕	💈 🏠 🔎 Search 🤺 Favorites 🜒 Media 🚱 🎯 😓	
idress 🙆 http://192.168.1.5/		🔽 🄁 Go 🛛 Links
NT 20		
Status Print Jo	b List Links	
1	PCISI	ot1:100/10 Base Wired Etherne
Printer Status		cyan: 90%
Printer Summary		magenta: 0%
Network Summary	Ready To Print Refresh	yellow: 0%
Administrator Login		black: 90%
Change Slot	Printer Information	Print Service Status
	Printer Name: 000-00000-0108DF	LPR 💡
	IP Address: 192.168.1.5	FTP 🥊
	MAC Address: 00:80:87:14:32:32	IPP 🥊
	Printer Location:	NetWare PServer 💡
	Printer Serial Number: AF4C003411	NetWare RPrinter 💡
	Printer Asset Number:	Ether Talk
	Contact Name- Administrator:	NetBEUI 🦞
	Tray1: Legal 14	
	MPTray: Letter Long Edge	Setting Service Status
	Duplex: Installed	SNMP
	Hard Disk: Installed	WEB 🦞
	Memory: 256 MB	Telnet 🌱
Done		Internet

3. Click [Change Slot].

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4. Select PCI Slot2: Wireless, then click [OK].

Microsoft Intern			
ile Edit View Favorites	Fools Help		
3 Back 🔹 🕥 🕤 🔀	👌 🏠 🔎 Search 🤺 Favorites 📢 Media 🥝	🗟 • 🖕 🖂	
ldress 🔕 http://192.168.1.5:/2	/index.htm		🔽 🄁 Go 🛛 Links
AT A A A A A A A A A A A A A A A A A A			
Status Print Jol	List Links		X Slot2:Wireless IEEE802.11
Printer Status		PC	A SIGLZ. WITCHESS IEEE002.11
			cyan: 90%
Printer Summary	🥊 Ready To Print	Refresh	magenta: 70%
Network Summary	Tready To Print	Kerresii	yellow: 70%
Administrator Login			black: 90%
Change Slot	Printer Information		Print Service Status
	Printer Name: 000-00000-0108DF		LPR 💡
	IP Address: 192.168.1.6		FTP 📍
	MAC Address: 00:80:92:01:08:DF		IPP 📍
	Printer Location:		
	Printer Serial Number: AF40003411		Setting Service Status
	Printer Asset Number:		SNMP 🥊
	Contact Name- Administrator:		WEB 🥊
	Tray1: Letter Long Edge		Telnet 🥊
	MPTray: Letter Long Edge		
	Duplex: Installed		
	Hard Disk: Installed		
	Memory: 256 MB		
	Version Information		
	CU Firmware: 01.26		
	PU Firmware: 00.00.87		
	Network Firmware: 03.AF		
			Internet

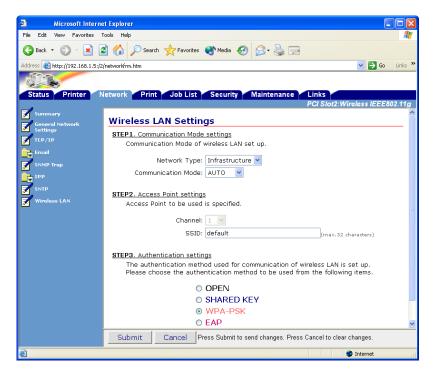
- 5. Click Administrator Login.
- 6. Enter

```
User ID = root
```

Password = last six digits of the Mac (Ethernet) Address for the wireless card (under General Information on the Network Summary printout–see page 4), minus the punctuation marks.

- 7. Click [Skip].
- 8. Select the [Network] tab.

9. Click [Wireless LAN] on the left side of the screen.



- **10.** Make your selections:
 - Network Type = Infrastructure
 - Communication Mode = AUTO or 802.11b
 - SSID = (name you select)
 - Authentication:
 - Open (no security)

– Shared Key (WEP)

Microsoft Internet Explorer	
SHARED KEY Settings	>
WEP Key settings	
Key Size: 64 💌 bits	
Key Index: 1 💌	
WEP Key1: Setting	=
WEP Key2: Setting	
WEP Key3: Setting	
WEP Key4: Setting	
OK Cancel	>

- WPA (Pre-Shared Security)

🕘 Microsoft Internet Explorer	3
WPA-PSK Setting	
Encryption: TKIP 💌	
Key Index: 1 💌	
Pre-Shared Key1: Setting	
Pre-Shared Key2: Setting	
Pre-Shared Key3: Setting	
Pre-Shared Key4: Setting	
OK Cancel	

 EAP (for more information on setting up EAP security, see "Setting Up EAP Using Web Browser" below).

Microsoft Internet Explorer	
EAP Setting	
EAP Type: EAP-TLS 💌	
EAP User: (max.64 characters)	
Client Certificate Setting	
O Use SSL/TLS Certificate for EAP authentication	
 Not use SSL/TLS Certificate for EAP authentication 	
Import of Client Certificate: Import	
CA Certification Setting	
O Authenticate Server	
⊙ Not authenticate Server	
Encryption: TKIP 💌	
OK Cancel	
l	~

11. Click [Submit].

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NOTES

Certificates must be obtained separately by the network administrator before setting the printer for EAP.

These instructions assume you have performed steps 1 through 10 under "Configuration Using Web Browser", starting on page 19.

For more information on EAP, see page 8.

Microsoft Internet Explorer	
EAP Setting	_
EAP Type: EAP-TLS 💌 EAP User:(max.64 characters)	
Client Certificate Setting O Use SSL/TLS Certificate for EAP authentication	
 Not use SSL/TLS Certificate for EAP authentication 	
Import of Client Certificate: Import	
CA Certification Setting O Authenticate Server O Not authenticate Server	
Encryption: TKIP 💌	
OK Cancel	
	~

► To Use the Client Certificate

Select the Client Certificate setting.
 Note: Normally the SSL/TLS Certificate should NOT be selected. It is often not authenticated by the RADIUS Server because it does not contain Client Authentication in the Extend Key Usage attributes. If you select SSL/TLS, the [Import] button disappears.

<u>Client Certificate Setting</u>

- O Use SSL/TLS Certificate for EAP authentication
- O Not use SSL/TLS Certificate for EAP authentication

Import of Client Certificate: Import

2. Click [Import.

🧧 M	licrosoft Internet Explorer	×
Import	of Client Certificate	~
<u>STEP1.</u> P	<u>lease choose Certificate to import.</u>	
(The file fo	ormat which can be imported:PKCS#12)	
	Browse	
<u>STEP2.</u> Ple selected ce	ease input a password required in order to import the rtificate.	
Password	(max.63	
characters)	·X	
ОК	Cancel	
		~

- **3.** Perform Steps 1 and 2, then click [OK]. *The certification file is imported. When complete, a result window appears.*
- 4. Click [Close].

5. Click [OK].

Aicrosoft Internet	et Explorer
File Edit View Favorites 1	iools Help 🥼
🚱 Back 🝷 🕥 🕤 🖹	🛿 🏠 🔎 Search 👷 Favorites 🜒 Media 🤣 😥 - 🌺 🖂
Address 🕘 http://192.168.1.5:/2	/networkfrm.htm 🛛 💽 🚱 Links 👌
AR	
Status Printer N	letwork Print Job List Security Maintenance Links
	PCI Slot2:Wireless IEEE802.11g
Summary	Wireless LAN Settings
General Network Settings	STEP1. Communication Mode settings
📝 ТСР/ІР	Communication Mode of wireless LAN set up.
Email	Network Type: Infrastructure 🗸
SNMP Trap	Communication Mode: AUTO
Грр Трр	communication Mode: AUTO
SNTP	STEP2. Access Point settings
Wireless LAN	Access Point to be used is specified.
	Channel: 1
	SSID: default (max.32 characters)
	STEP3. Authentication settings
	The authentication method used for communication of wireless LAN is set up. Please choose the authentication method to be used from the following items.
	м [.]
	O OPEN
	 SHARED KEY WPA-PSK
	• EAP
	Submit Cancel Press Submit to send changes. Press Cancel to clear changes.
ê	Sector Se

NOTE

To view the certificate, open the EAP Setting window by clicking EAP, then click the newly added [View] button.

6. If you wish to add Server Authentication, see the next section. Otherwise, click [Submit].

► To Add Server Authentication

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 Select [Authenticate Server] under [CA Certificate Setting]. The [Import] button appears.

CA Certification Setting		
 Authenticate Server 		
🔘 Not authenticate Server		
Import of CA Certificate:	Import	

2. Click [Import].

Microsoft Internet Explorer	
Import of CA Certificate	~
Please choose Certificate to import. (The file format which can be imported:PEM/DER)	
Browse	
OK Cancel	
	~

- **3.** Fill in (or browse to) the name of the certificate file to be imported, then click [OK]. *The certification file is imported. When complete, a result window appears.*
- 4. Click [Close].

5. Click [OK].

Microsoft Internet	t Explorer	
File Edit View Favorites 1	iools Help 🦧	
🔇 Back 🝷 🕥 🐇 🕻	🛿 🏠 🔎 Search 🤺 Favorites 🜒 Media 🕢 🍰 🚽	
Address 🙋 http://192.168.1.5:/2	/networkfrm.htm 🕑 🔁 Go Links 🎽	
J.C.		
Status Printer N	letwork Print Job List Security Maintenance Links	
	PCI Slot2:Wireless IEEE802.11g	
Summary	Wireless LAN Settings	
Settings	STEP1. Communication Mode settings	
📝 ТСР/ІР	Communication Mode of wireless LAN set up.	
💼 Email		
SNMP Trap	Network Type: Infrastructure 💌	
🔁 трр	Communication Mode: AUTO 💌	
Wireless LAN	STEP2. Access Point settings	
<u>~</u>	Access Point to be used is specified.	
	Channel: 1 🕑	
	SSID: default (max.32 characters)	
	STEP3. Authentication settings	
	The authentication method used for communication of wireless LAN is set up.	
	Please choose the authentication method to be used from the following items.	
	O OPEN	
	SHARED KEY	
	O WPA-PSK	
	• EAP	
	Submit Cancel Press Submit to send changes. Press Cancel to clear changes.	
é	🔮 Internet	

NOTE

To view the certificate, open the EAP Setting window by clicking [EAP], then click the newly added [View] button.

6. Click [Submit].

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Configuration Using AdminManager

NOTE

If you are using AdminManager to configure the wireless card, and you have not installed the utility on your computer, you will need the CD supplied with your printer to launch the utility.

- 1. Launch AdminManager:
 - From your computer: [Start] → [Programs] → [OKI Setup Utility] → [Admin Manager]
 - From CD, after AutoRun: [(Language]) → [Next] → [Custom Install] → [Network Software] → [Installation/Config] → [Admin Mgr / Quick Setup] → [(language)] → [OKI Device Standard Setup] → [Execute from CD-ROM] → [Next].
- Wait for the software to discover the printer (if automatic discovery fails, click [File] → [Search]). The printer appears as MLETB13 or OkiLAN8200e.

🐼 AdminManager			
File Status Setup	Option Help		
 B B			
Model Name	Ethernet Address	IP Address	Print Server Name
ter t			
<			>

- **3.** Click the discovered printer, then select [Oki Device Setup] from the Setup menu.
- 4. Select [Guest User], click [OK].

- **5.** On the [General] tab, click [Change SLOT], then click [Yes].
- **6.** Referring to the Network Summary printout for the wireless card (under General Information), enter the last six digits of the Mac address as the password, then click [OK].
- 7. Scroll over to the far right and select the [Wireless] tab.

Device Setup [SLOT 2]	? 🔀
E-Mail(Send) E-Mail(Receive) SNTP Ma	intenance SSL/TLS Wireless
Network Type	Infrastructure 💌
Communication Mode	Auto
SSID	default
Authentication	Open 💌
Initialize	Apply Cancel

- 8. Make your selections:
 - Network Type = Infrastructure
 - Communication Mode = AUTO or 802.11b
 - SSID = (name you select)
 - Authentication:
 - Open (no security)

- Shared Key (WEP)

Device Setup [SLOT 2]	? 🗙
E-Mail(Send) E-Mail(Receive) SNTP Ma	intenance SSL/TLS Wireless
Network Type	Infrastructure 🗨
Communication Mode	Auto
SSID	default
Authentication	Shared Key
Key Size 64 💌	Key Index
WEP Key Key1 Key2	Key3Key4
Initialize	Apply Cancel

- WPA (Pre-Shared Security)

Device Setup [SLOT 2]	? 🛛
E-Mail(Send) E-Mail(Receive) SNTP Mai	intenance SSL/TLS Wireless
Network Type	Infrastructure
Communication Mode	Auto
SSID	default
Authentication	WPA-PSK
Encryption	TKIP
⊢ Pre-Shared Key	Key Index 1
Key1 Key2	Key3 Key4
Initialize	Apply Cancel

32 Configuration: Infrastructure Mode

 EAP (for more information on setting up EAP security, see "Setting Up EAP Using Web Browser" below).

Device Setup [SLOT 2]	? 🛛
E-Mail(Send) E-Mail(Receive) SNTP Ma	intenance SSL/TLS Wireless
Network Type	Infrastructure
Communication Mode	Auto
SSID	default
Authentication	EAP
Encryption	TKIP
	EAP
Initialize	Apply Cancel

9. Click [Initialize].

33 Configuration: Infrastructure Mode

Setting Up EAP Using AdminManager

Device Setup [SLOT 2]	? 🛛
E-Mail(Send) E-Mail(Receive) SNTP Mai	intenance SSL/TLS Wireless
Network Type	Infrastructure
Communication Mode	Auto
SSID	default
Authentication	EAP
Encryption	TKIP
	EAP
Initialize	Apply Cancel

NOTES

Certificates must be obtained separately by the network administrator before setting the printer for EAP.

These instructions assume you have performed steps 1 through 8 under "Configuration Using AdminManager", starting on page 30.

For more information on EAP, see page 8.

▶ To Use a Client Certificate

1. Select EAP under [Authentication], then click [EAP].

EAP Setup	? 🛛
ЕАР Туре	EAP-TLS
EAP User	
EAP Password	
└── Use SSL/TLS Certificate	
🗖 Authenticate Server	
	Certificate
ОК	Cancel

2. Click [Certificate].

Certificate			? 🛛
Client Certificate			
Password	Import	Delete	View
CA Certificate			
	Import	Delete	 View
			Close

- **3.** Type in the name of the certificate file to be imported, or click [...] to browse to it.
- **4.** Type in the password provided by the issuer of the certificate.
- 5. Click [Import].
- **6.** Click [OK] to confirm importing the file. *The certification file is imported. When complete, a result window appears.*

7. Click [OK].

► To Add Server Authentication

 Under [CA Certificate], type in the name of the certificate file to be imported, or click [...] to browse to it.

Certificate			? 🛛
Client Certificate - File			
Password	Import	Delete	View
CA Certificate			
	Import	Delete	 View
			Close

- 2. Click [Import].
- **3.** Click [OK] to confirm the import. *The certification file is imported. When complete, a result window appears.*
- 4. Click [OK], then click [Close].

EAP Setup	? 🛛
ЕАР Туре	EAP-TLS
EAP User	
EAP Password	
🖵 Use SSL/TLS Certificate	
🗖 Authenticate Server	
	Certificate
ОК	Cancel

36 Configuration: Infrastructure Mode

- Enter the user name to be distributed along with the certificate by the network administrator under [EAP User] and select [Authenticate Server]. then click [OK].
- 6. Click [Apply] to save the settings to the wireless card.

NOTE

To view the certificates, click [EAP] on the [Wireless] tab, then click the newly added [View] button for the certificate you wish to see.

37 Configuration: Infrastructure Mode

CONFIGURATION: TELNET

Before starting, have the NEtwork Summary you printed for the wireless card handy: You will need the IP Address and Mac (Ethernet) Address from it to configure the card.

The following assumes:

- Windows 2000 Professional
- IP Address = 111.222.333.444
- Ethernet Address = 00:11:22:33:44:55

Configuring Using Telnet

- 1. Go to the Windows command prompt.
- 2. Verify the connection to the wireless card using the ping command followed by the IP Address for the wireless card:

c:\Windows ping 111.222.333.444

3. Log onto the wireless card from Telnet:

NOTE

```
User name = root
Password = last 6 digits of Mac Address (minus
punctuation marks)
```

```
c:\telnet 111.222.333.444
Trying 111.222.333.444 ...
Connected to 111.222.333.444
Escape character is `^]'
EthernetBoard OkiLAN510w Ver 03.89 TELNET server.
login: root
`root' use needs password to login.
password:
```

User 'root logged in.

Configuration: Telnet

1: Status / Information 2: Printer Config 3: Network Config 4: Security Config 5: Maintenance 99: Exit Setup Please select(1-99)? 4. Type 3 and hit Enter. No. M E N U (level.2) Slot2: Wireless IEEE802.11g 1: Common 2: TCP/IP 6: SNMP Trap 7: E-Mail Send 8: E-Mail Receive 9: SNTP 10: Wireless Settings 99: Back to prior menu Please select(1-99)? 5. Type 10 and hit Enter. No. M E N U (level.3) Slot2: Wireless IEEE802.11g 1: Network Type : Ad-Hoc 2: Communication Mode : Auto 3: Channel : 11 : "default" 4: SSID 5: Authentication

- 6: WEP
- 7: EAP
- 8: WPA-PSK

```
99: Back to prior menu
```

```
Please select(1-99)?
```

: Open

Configuration: Telnet

6. To set WEP, type 6 and hit Enter:

```
No. M E N U (level.4) Slot2: Wireless IEEE802.11g
    1: Key Size
                                    : 64
    2: Key Index
                                    : 1
    3: WEP Kev 1
                                    •
    4: WEP Key 2
                                    •
    5: WEP Key 3
                                    :
    6: WEP Key 4
                                    :
  99: Back to prior menu
  Please select(1-99)?
7. To set EAP, type 7 and hit Enter:
  No. M E N U (level.4) Slot2: Wireless IEEE802.11q
    1: EAP Type
                                    : EAP-TLS
    2: EAP User
                                    :
    3: Encryption
                                   : TKIP
    4: Use SSL Certificate
                                   : No
    5: Authenticate Server
                               : No
  99: Back to prior menu
  Please select(1-99)?
8. To set WPA-PSK, type 8 and hit Enter:
  No. M E N U (level.4) Slot2: Wireless IEEE802.11g
    1: Encryption
                                    : TKIP
    2: Key Index
                                   : 1
    3: Pre-Shared Key 1
                                    :
    4: Pre-Shared Key 2
                                    :
    5: Pre-Shared Key 3
                                    :
    6: Pre-Shared Kev 4
  99: Back to prior menu
  Please select(1-99)?
```

9. When done making your settings, go back to the Exit Setup menu, then type 1 to save the settings and reset the wireless card.

Configuration: Telnet

CONFIGURATION: PRINTER CONTROL PANEL

To make changes in the wireless card settings using the control panel: with **Ready to Print** on the display, press **ENTER** to switch to the Menu Mode.

Use the ∇ , Δ and **ENTER** buttons to drill down to the Slot2 menu and make settings as follows:

 $[\text{Admin Setup}] \rightarrow [\text{Password}] \rightarrow [\text{Slot2: Wireless}] \rightarrow$

- [Network Type] = Ad-Hoc or Infrastructure
- [Communication Mode] = Auto or 802.11b
- [Channel] = 1 to 13
- [SSID] = your choice
- [Authentication] = Open
- [IP Address]
- [Subnet Mask]
- [Default Gateway]

41 Configuration: Printer Control Panel

TROUBLESHOOTING

Here is some basic troubleshooting information. For more detailed information, check out http://my.okidata.com.

PROBLEM	SOLUTION(S)
Communication is unstable.	Communication speed may be decreased or the wireless connection may be broken due to obstacles or radio source of 2.4 GHz such as a microwave oven or cordless phone.
	 Check radio sources in the surrounding area.
	 Change the location or direction of the access point and printer.
	Too many wireless devices are using the same or neighboring channel. This can decrease communication speed or break the wireless connection.
	 Reduce the number of wireless devices using the same channel.
	 Check for access points installed on the floor above or below and/or for unauthorized access points.

PROBLEM	SOLUTION(S)
Connection problems for wireless devices.	Problems with the access point devices or wireless computers.
	 Consult the FAQ information of the vendors for the access points and wireless computers.
	 Check that you have the latest firmware for access point devices.
	 Check that you have the latest drivers for the wireless computer.
	Access point device may be set to "High-Speed Mode."
	 Disable the High-Speed Mode settings of access point devices
	MAC Address Filtering is enabled in the access point device.
	Register the wireless card's MAC address in the MAC Address FIItering list of the access point device.
	Multiple access point devices have the same SSID.
	 Check the SSID of access point devices in the surrounding area.
	Check the SSID of access point devices on the floors above and below.
	Check for unauthorized access point devices.

PROBLEM	SOLUTION(S)
EAP authentication fails.	 Check the network configuration of the wireless card. Make sure that IP Address, Subnet Mask and Default Gateway are all set correctly. Ad-Hoc mode: IP Address cannot be obtained by DHCP.
	Check the network protocol: • The wireless card supports only TCP/IP protocol. • Ethernet and IPX/SPX are not supported.
	 Check the configuration of the wireless card: SSID, WEP Key and WPA Pre-Shared Key are all case sensitive. In the Shared Key mode, check the Key Index and Key SIze.
	The supported scheme is EAP-TLS. Make sure that the RADIUS Server access point supports EAP-TLS.
EAP CA Certificate	Supported key sizes and encryption schemes: • Key Scheme = RSA or DSA • Key Size = 512, 1024, 2048 or 4096 bit. • Hash Scheme = md5 or sha1.
	"Client Auth" must be included in the "Extend Key Usage" attribute of the Client Certificate.
	The "EAP User" setting in the wireless card must match the Client Certificate setting.
	The CA Certificate must be provided by the Certificate Authority that directly issued the Server Certificate.

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