

OT-WL01

Technical Reference Guide

Product Overview

This chapter explains the features of the product.

Installation

This chapter explains the connection and installation of the wireless LAN unit.

Cautions

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Radio wave radiation

The influence on the environment of radio wave radiation

- ❑ The Radio Frequency module that can be installed in this product radiates the same high frequency energy as some other high frequency devices but the level of the energy radiated from it is suppressed so that it is much lower than the electromagnetic energy radiated from radio equipment like cell phones.
- ❑ Under some situations and in certain environments, the use of this product is sometimes limited by the owner of the building or a representative with responsibility for the group. For example, it may be restricted in the following case:
 - Use in an environment where it may cause interference with other devices and services.
- ❑ If you do not understand the radio device usage policy in a specific group or environment, such as an airport, ask permission before using this product.

The influence on the human body of radio wave radiation

The output power radiated from the Radio Frequency module that can be installed in this product is much lower than the radiation limit specified in the safety standard. However, it is best to avoid allowing this product to contact your body during usual operation. While using, be especially careful not to touch the wireless LAN unit.

Note about interference

- ❑ The Radio Frequency module that can be installed in this product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
- ❑ If this product does cause harmful interference to radio or television reception, which can be determined by turning this product off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between this product and receiver.
 - Connect this product into an outlet on a circuit different from that to which the receiver is connected.
 - Consult your dealer or an experienced radio/TV technician for help.
- ❑ Never disassemble or modify this product or the installed Radio Frequency module.
- ❑ Seiko Epson Corporation shall not be liable for interference to radio/TV resulting from changes or modifications to this product or the installed Radio Frequency module not expressly approved by Seiko Epson Corporation.

- ❑ Other radio equipment sometimes uses the same frequency band that this product uses. To prevent radio wave interference with other radio equipment, pay attention to the following matters when you use this product:
 - The Radio Frequency module that can be installed in this product uses the Industrial Scientific and Medical band (2.4 GHz), DSSS/OFDM modulation, and the interference distance is 40 m.
 - Other equipment that uses the same frequency band used by the Radio Frequency module that can be installed in this product includes equipment for industry, science and medical treatment, microwave ovens, HomeRF, and radio and other broadcasting equipment (both ones that require a license and ones that do not require a license).
- 1. Confirm that radio and other broadcasting equipment are not used nearby before using this product.
- 2. When trouble occurs, for example, if the Radio Frequency module causes problems such as radio wave interference, consult your dealer.
- ❑ Because not all the combinations of the printer and wireless LAN devices have been checked for operation, the operation of the printer in combination with all the wireless LAN devices is not guaranteed. Especially in the ad-hoc mode, the printer may not operate normally, depending on the combination of the device to connect with. Be sure to carry out through evaluation of the operation before use.
 - Examine the radio wave situation in the surrounding area before use.
 - Avoid using the same channel that is used in the neighboring shops where wireless LAN is used.

Notes on using this product

When using this product in environments where kitchen microwaves and other devices that may interfere radio waves are installed, observe the following points.

- Keep the printer away from the devices, such as kitchen microwaves, that may cause radio wave interference.
- Use channels that are away from the frequency bands that may cause radio wave influence.
- Place shields between the printer and the devices that may cause radio wave interference.
- In auto channel setting for the access point, do not select a channel in which the devices may cause radio wave interference.

Wireless Telegraphy Act Regulations

The following acts are prohibited by the Wireless Telegraphy Act.

- Modifying and disassembling (including the antenna)
- Removing the label of conformance

Note about Security

Notes on Security when Using Wireless LAN

(Important information on customer rights (maintaining privacy))

The advantage of using a wireless LAN over a LAN cable is that, because information is exchanged using radio signals, you can easily connect to the network if you are within range of the radio signals. A disadvantage of this is that within a certain range, the electromagnetic signals can pass through barriers such as walls, so that if security countermeasures are not implemented in some way, problems such as the following may occur.

Communicated data can be intercepted

A third party may be able to receive wireless transmissions without authorization, and they could obtain personal information from these transmissions such as IDs, passwords, or credit card numbers, or they could intercept the contents of personal e-mail messages.

Unauthorized access to the network

A third party could access an individual or intra-company network without permission and carry out any of the following activities.

- Retrieve personal data or other secret information (information leakage)
- Pose as another user and send inappropriate data (impersonation)
- Overwrite the contents of intercepted data and resend it (falsification)
- Introduce a computer virus which could cause data loss or system crashes (damage)

Initially, the possibility that such problems could occur through settings concerning the security of the wireless LAN product and by using the product are decreased, because the wireless LAN card and the access point have security measures to deal with these problems. We recommend that you use this product after making security settings using your own judgment and assuming full responsibility, and with your full understanding of problems that may occur if you do not make any security settings.

Notes on Setting SSID (Service Set Identifier)

For protection of security, note the following precautions when setting the SSID.

- Change the SSID from the default setting.
- Do not set texts by which the owner can be identified as the SSID.

Notes on Setting Cryptographic Key



For protection of security, note the following precautions when setting the cryptographic key.

- Avoid using words on a dictionary as practicably as possible.
- Combine meaningless alphanumeric characters and symbols.
- Use texts consisted of at least 13 characters or more or of 20 characters or more if possible.


For Safety

Key to Symbols

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product.

 WARNING	You must follow warnings carefully to avoid serious bodily injury.
 CAUTION	Provides information that must be observed to prevent damage to the equipment or loss of data. <ul style="list-style-type: none">• Possibility of sustaining physical injuries.• Possibility of causing physical damage.• Possibility of causing information loss.
CAUTION	Provides information that must be observed to avoid damage to your equipment or a malfunction.
NOTE	Provides important information and useful tips.

Warnings

 WARNING	<ul style="list-style-type: none">• May exert electromagnetic interference on, and cause malfunction of, cardiac pacemakers. Before using this product, check that there is no one in the vicinity using a cardiac pacemaker.• May exert electromagnetic interference on, and cause malfunction of, sensitive medical equipment. Before using this product, check that there is no sensitive medical equipment in the vicinity.• Use of this product on aircraft may be restricted in some countries. Before using this product, check that use of this product is not restricted on the aircraft.• Never attempt to repair this product yourself. Improper repair work can be dangerous.• Never disassemble or modify this product. Tampering with this product may result in injury or fire.
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Cautions



- **This product is only for indoor use.**
- **This product should only be used for Epson TM Printers.**
If it is installed on another device, it may result in computer failure, damage, or malfunctions.
- **To comply with RF exposure compliance requirements, a distance of at least 20 cm must be maintained at all times between the antenna of this product and people in the vicinity.**
- **Do not store in locations with high temperatures or high humidity.**
It may in particular be damaged or deformed if left in a vehicle with the windows shut, or placed in locations with unusually high temperatures for extended periods such as in direct sunlight.
- **Do not store in locations with high temperatures or high humidity.**
It may in particular be damaged or deformed if left in a vehicle with the windows shut, or placed in locations with unusually high temperatures for extended periods such as in direct sunlight.
- **Do not get this product wet.**
This may cause malfunctions to occur.
- **Do not use near microwave ovens.**
Wireless communication may be interrupted by electromagnetic interference generated by microwave ovens.
- **Do not drop it, subject it to shocks, or place heavy objects on it.**

Restriction of Use

When this product is used for applications requiring high reliability/safety, such as transportation devices related to aviation, rail, marine, automotive, etc.; disaster prevention devices; various safety devices, etc.; or functional/precision devices, etc., you should use this product only after giving consideration to including fail-safes and redundancies into your design to maintain safety and total system reliability. Because this product was not intended for use in applications requiring extremely high reliability/safety, such as aerospace equipment, main communication equipment, nuclear power control equipment, or medical equipment related to direct medical care, etc., please make your own judgment on this product's suitability after a full evaluation.

Product Servicing

This product cannot be serviced at the component level. In case of a fault, replace the OT-WL01 itself.

About this Manual

Aim of the Manual

This manual is aimed to provide the necessary information on installation and network connection for this product.

Manual Content

The manual is made up of the following sections:

Chapter 1 [Product Overview](#)

Chapter 2 [Installation](#)

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Product Overview

This chapter explains the product overview.

Features

The OT-WL01 is installed in the TM-series printers to provide Wireless Ethernet communications.

Wireless LAN

- Compliance with IEEE 802.11b, 802.11g, and 802.11n wireless communication standards
- Extension cable (1 m) for installation according to the radio wave conditions at the customer's installation site
- Rubber cover to prevent disconnection of the wireless LAN unit from the extension cable

1

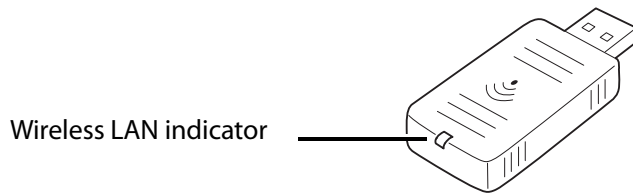
Product Configurations



Accessories




- Wireless LAN unit
- USB extension cable
- Affixing tape (1 pair, 2 pieces)
- Rubber cover
- User's manual

Parts Name and Function

Wireless LAN Indicator



 : Flashing  : Off

Status	Wireless LAN Indicator	
The wireless LAN unit is not connected to the printer. Or the printer power is OFF.		
This wireless LAN unit is connected to the printer and is in operation.		Green
This wireless LAN unit is connected to the printer and is in operation. This unit is communicating on a network.		Green (Flashing slowly)

Specifications

Power-supply Voltage	DC 4.5 - 5.5 V
Current Consumption	Maximum 300 mA
Frequency Range	2.4 GHz band (1 to 13 Ch) Channels 1 to 11 are only available for 731 model.
Potential Interference Range	40 m
Appearance	Wireless LAN unit: Approx. 24 x 51 x 10 mm (W x D x W) USB extension cable: 1 m (length)

Environmental Specifications

Item		Specifications
Temperature	Operating Conditions	0 to 45°C {41 to 113°F}
	Storage Conditions	-5 to 50°C {23 to 122°F}
Humidity	Operating Conditions	10 to 90% RH
	Storage Conditions	10 to 90% RH

Limitations for wireless communication

- The transmission of the radio waves cannot be stopped. The only way to stop the transmission of radio waves is to turn the TM printer off.
- Countries where this product can be used are limited. Since notes are provided for each country, check the manual supplied with the product.
- When setting the encryption type, there are the following restrictions:
 - WPA/WPA2-PSK is not available in the Ad-Hoc mode.
- When using the OT-WL01 in the Ad-Hoc mode, printing a status sheet is subject to the following restrictions
 - Even if there is no host computer to connect to, "Connect" appears as the Link Status.
 - Between power-on and the time when the printer to connect is found, "0dBm" appears as the Signal Level. If the host computer connected to the TM printer discontinues communication, the value that had been obtained immediately before discontinuation of communication is held appears.



Installation

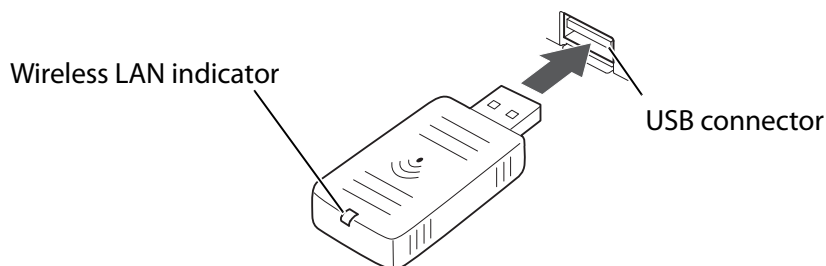
This chapter explains the connection and installation of the wireless LAN unit.

Connecting the Wireless LAN Unit

To connect the wireless LAN unit to the printer, you can connect it directly or use the USB extension cable. If connecting the wireless LAN unit directly causes interference with other cables or bad communication situation, use the included USB extension cable.

Connecting the Unit Directly with the Printer

Insert the wireless LAN unit to an USB connector of the printer. The position of the USB connector varies by printer. For details, see the user's manual for each printer.

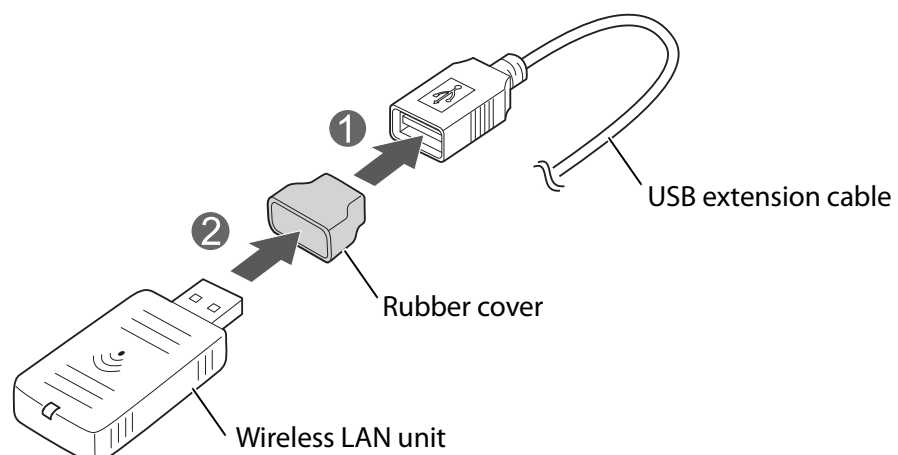


Using the USB Extension Cable

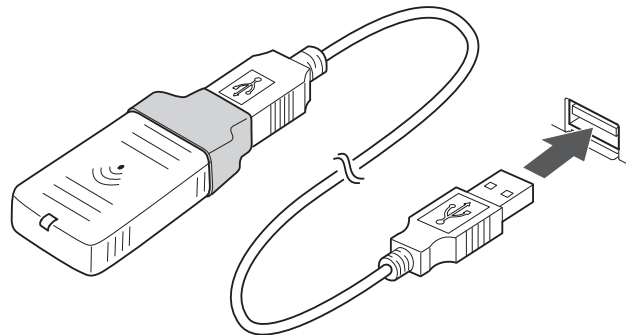
- 1 Attach the included rubber cover to the connector of the USB extension cable into which the wireless LAN unit will be inserted, to prevent the unit from coming off.**
- 2 Insert the wireless LAN unit into the connector of the cable.**

CAUTION

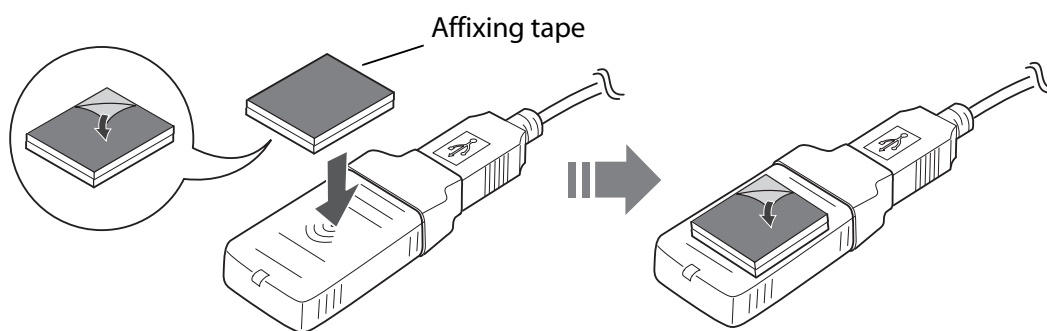
Adjust the position of the rubber cover so that a description of the label on the back side of the wireless LAN unit is not covered.



3 Connect the USB extension cable to the USB connector of the printer.



If you want to fix the wireless LAN unit, cut the included affixing tape to fit and put on the unit, and fix the unit in a place of good communication environment.



Connecting to the Network

The method for connecting the wireless LAN unit to the network differs if you use a TM printer that supports the SimpleAP mode or a TM printer that does not support the SimpleAP mode.

- Connecting a TM printer that supports the SimpleAP mode to the network
 - Setting up from a Smart Device
 - Setting up from a Windows Computer
- Connecting a TM printer that does not support the SimpleAP mode to the network

NOTE

- When you set up the access point at the same time, set the access point in advance and check that this product operates correctly.
- Examine the radio wave situation in the surrounding area before use.
- Avoid using the same channel that is used in the neighboring shops where wireless LAN is used.
- When using this product in environments where kitchen microwaves and other devices that may interfere radio waves are installed, observe the following points.
 - Keep this product away from the devices, such as kitchen microwaves, that may cause radio wave interference.
 - Use channels that are away from the frequency bands that may cause radio wave influence.
 - Place shields between the printer and the devices that may cause radio wave interference.
 - Use a bandwidth that does not generate interference.
 - In auto channel setting for the access point, do not select a channel in which the devices may cause radio wave interference.

Connecting a TM printer that supports the SimpleAP mode to the network

In SimpleAP mode, the printer functions as a simple access point. Therefore, you can connect to it in the same way as connecting to an access point.

NOTE

Once wireless LAN network settings are performed, the printer will not start up in SimpleAP mode. If you want to start it up in SimpleAP mode, initialize either the printer or the interface unit which is installed in the printer. For the initialization method, see the user's manual for the printer or the interface unit.

Setting up from a Smart Device

Necessary Items

Prepare the following items.

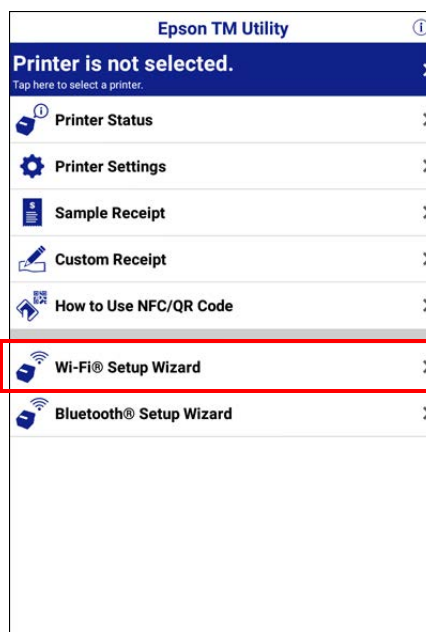
- Printer which supports this wireless LAN unit
- Device for setting: iOS or Android device
- Utility for setting: Epson TM Utility for iOS or Epson TM Utility for Android

Running Epson TM Utility

1 Run the Epson TM Utility



2 Set from "Wi-Fi Setup Wizard" in the menu.



Setup and Operation Work flow

Select the network you want to connect to.

Enter the passkey.

Perform a test print.

Setting up from a Windows Computer

Necessary Items

Prepare the following items.

- TM printer: Wireless LAN unit is installed
- Computer for setting: Computer equipped with Windows 8/7/Vista/XP/2000, and a wireless LAN function
- Utility for setting: EpsonNet Config

Follow the steps below to connect the printer.

1 Turn on the printer.

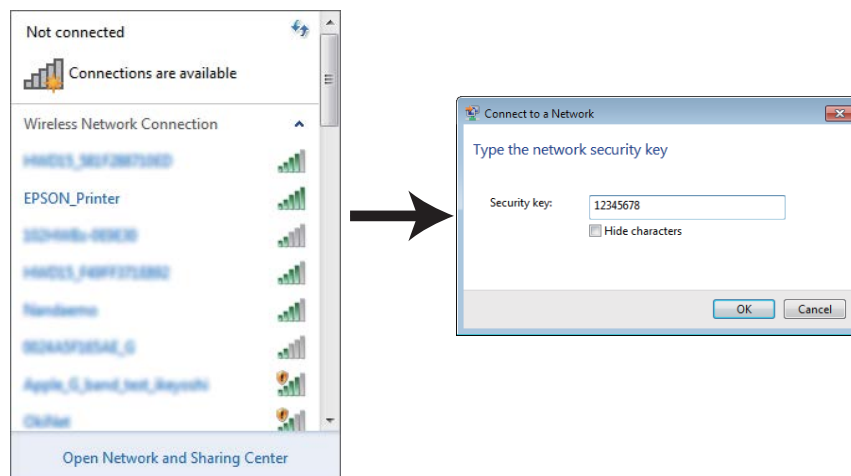
2 Activate Windows Wireless Network Connection and select [EPSON_Printer] as the connection device on the screen that appears.

If the window to enter a pass phrase appears, enter "12345678".

Default settings on printer are the following values.

Network mode	SimpleAP mode
SSID	EPSON_Printer
Pass phrase	12345678
IP Address	192.168.192.168

An example of Connection Screen



NOTE

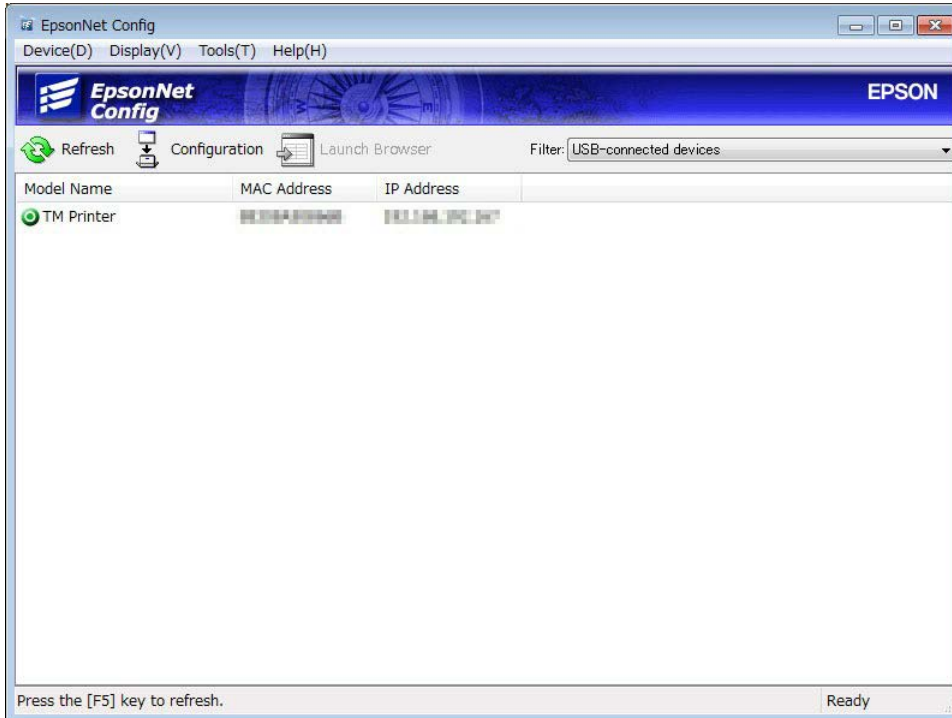
- For the setting method for the computer for setting, see the manual for your computer.
- If you are setting multiple TM printers, only turn on the power for the printer you are setting. You cannot set multiple printers at the same time.

When connecting to the printer is complete, setup the Wireless LAN by using the EpsonNet Config. For downloading and installation of the EpsonNet Config, see "[Software](#)" on page 23

3 Start up the EpsonNet Config of the setting computer.

4 The “EpsonNet Config” window is displayed. Select the printer for setting and click the [Configuration] button.

If the printer is not displayed, click the [Refresh] button. If it is still not displayed, reconfirm steps 2 and 3 in "Setting up from a Windows Computer" on page 18 -page 19.



NOTE It can take 20 seconds or longer for the printer to be displayed.

5 Configure the [Network] settings and the [TCP/IP] settings.

For detailed information about EpsonNet Config, see the EpsonNet Config manual (operation guide) or the EpsonNet Config online help. Be sure to confirm the necessary setting information with your network administrator.

Setting is completed and the settings for the printer or the interface unit mounted on the printer are changed. The connection with the setting computer is cut according to the setting item and it is not displayed in the “EpsonNet Config” window.

6 When setting the Wireless LAN is complete, restart the printer.

Connecting a TM printer that does not support the SimpleAP mode to the network

To connect the printer that does not have the Simple AP mode, follow the steps below.

For printers with the SimpleAP mode, if the network settings are already configured, you can change those settings as described below.

Printing a Status Sheet

Print a Status Sheet to confirm the setting of the printer or interface board which is installed in the printer.

For printing instructions, see the user's manual for the printer you are using or the Technical Reference Guide for the printer's interface unit.

An example of a Status Sheet

```

*** Wi-Fi & Ethernet Interface ***

Wi-Fi Status
MAC Address      : XX-XX-XX-XX-XX-XX
SSID : EPSON_Printer
Network Mode     : Infrastructure
Comm Standard    : 802.11b/g/n
Encryption Type  : WPA2-PSK
Link Status      : Disconnect
Channel          : Unknown
Transmission     : Unknown
Access Point     : Unknown
Signal Level     : Unknown

Ethernet Status
MAC Address      : XX-XX-XX-XX-XX-XX
Physical Layer   : Auto-negotiation
Link Status      : Disconnect

Network
Soft Version     : XX.XX

TCP/IP Status
Acquiring       : Auto
IP Address       : (NONE)
Subnet Mask     : (NONE)
Default Gateway  : (NONE)

Other Status
TimeServer      : Invalid
Stored Date/Time : 2014/01/01 00:00:00
Wi-Fi Device ID  : XXXX:XXXX
  
```

Necessary items for
the network setting

Connection from the Setting Computer

Connect the setting computer to the access point by the wired LAN. The setting of the access point is set for the Status Sheet. The setting items are as follows.

NOTE

As for the setting method of the setting computer, refer to the manual of the computer used.

- SSID (Ex: EpsonNet)
- IP Address (Ex: 192.168.192.2)
(Don't set the same address as the IP Address of the printer to the setting computer and the access point. Example: If the IP Address is 192.168.192.168, the IP Address of the setting computer should be set to another number, such as 192.168.192.2. The same address (192.168.192.168) cannot be used.)
- Channel (Ex: 11 ch)
- Security setting (Ex: WPA2-PSK)
- Passphrase (Ex: EpsonNet)

CAUTION

When you set up more than one TM printers equipped with wireless LAN interface, turn on only one printer. If more than one printer is turned on at the same time, the TM printer cannot be set up.

At this stage, the TM printer can communicate with the setting computer.

Setting the Printer

To set the printer or the interface which is installed in the printer, follow the steps from 3 to 5 in "[Setting up from a Windows Computer](#)" on page 18-page 20.

Software

The following software is provided for application development.

Utilities

Software	Description	Operating environment
Epson TM Utility	A utility that can be downloaded from App Store or Google Play. Use to check and change setting values on the printer from iOS and Android devices. This utility also comes with the following sample printing functions: <ul style="list-style-type: none"> • Sample receipt printing • Customized receipt printing • Printer status display • Quick pairing by NFC/QR code • Easy print by NFC/QR code 	iOS, Android
EpsonNet Config	A network setting tool for Epson network products.	Windows, Mac

Download

You can obtain software and manuals from one of the following URLs.

For customers in North America, go to the following web site and follow the on-screen instructions.

<http://www.epsonexpert.com/>

For customers in other countries, go to the following web site:

<http://download.epson-biz.com/?service=pos>