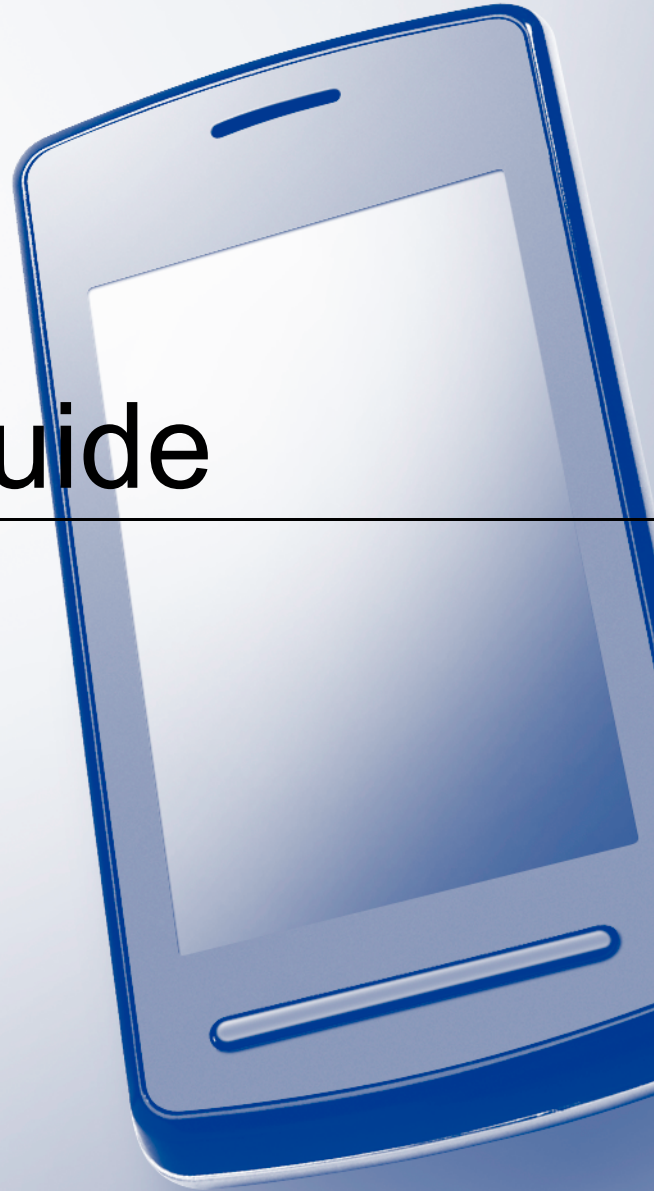


brother®

# Wi-Fi Direct™ Guide

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## Applicable models

This User's Guide applies to the following model.

HL-6180DW

## Definitions of notes

We use the following icons throughout this User's Guide:

 Note	Notes tell you how you should respond to a situation that may arise or give tips about how the operation works with other features.
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## IMPORTANT NOTE

- Please go to the Brother Solutions Center at <http://solutions.brother.com/> and click Manuals on your model page to download the other manuals.

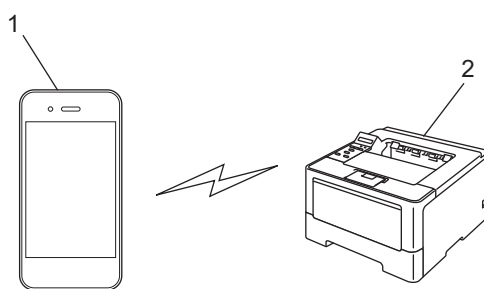
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# 1 Introduction

## Overview

Wi-Fi Direct™ is one of the wireless configuration methods developed by the Wi-Fi Alliance®. It allows you to configure a secured wireless network between your Brother machine and a mobile device, such as an Android™ device, Windows® Phone device, iPhone, iPod touch or iPad, without using an access point. Wi-Fi Direct supports wireless network configuration using the one push or PIN Method of WPS (Wi-Fi Protected Setup™). You can also configure a wireless network by manually setting a SSID and password. Your Brother machine's Wi-Fi Direct feature supports WPA2™ security with AES encryption.



### 1 Mobile device

### 2 Your Brother machine



#### Note

- If you enable the Wi-Fi Direct feature of your Brother machine, the wired and wireless interface of the machine will be disabled.
- The Wi-Fi Direct supported device can become a Group Owner (G/O). When configuring the Wi-Fi Direct network, the Group Owner (G/O) serves as an access point. See *Group Owner (G/O)* >> page 13.
- When your Brother machine is the Group Owner (G/O), your Brother machine supports one to one wireless communication using Wi-Fi Direct.

## Benefits to the customer

When you want to print from your mobile device, Wi-Fi Direct helps you configure a temporary wireless network easily, by using the one push or PIN method of WPS. For information on printing from your mobile device, you can download the Mobile Print/Scan Guide for Brother iPrint&Scan or the AirPrint Guide from the Brother Solutions Center (<http://solutions.brother.com/>).

## Hardware requirements

### Supported operating systems

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You must have a device running either Android™ 1.6 or greater, iOS 3.0 or greater or Windows® Phone.

## Downloading and installing Brother iPrint&Scan

Brother iPrint&Scan allows you to use features of your Brother machine directly from your mobile device, without using a computer. Before you start configuring a wireless network using Wi-Fi Direct, we recommend you download Brother iPrint&Scan. You can also download the manual for Brother iPrint&Scan from the Brother Solutions Center at (<http://solutions.brother.com/>) >> Mobile Print/Scan Guide for Brother iPrint&Scan.



#### Note

If your machine does not have a scanner, you cannot use the scan functions of Brother iPrint&Scan.

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### For Android™ Devices

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You can download and install Brother iPrint&Scan from the Android™ Market. To take advantage of all the features supported by Brother iPrint&Scan, make sure you are using the latest version.

To download and install or uninstall Brother iPrint&Scan, please refer to the user's guide for your mobile device.

### For iOS Devices

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You can download and install Brother iPrint&Scan from the App Store. To take advantage of all the features supported by Brother iPrint&Scan, make sure you are using the latest version.

To download and install or uninstall Brother iPrint&Scan, please refer to the user's guide for your mobile device. A link to your mobile device's user's guide, which can be viewed on the Apple web site, can be found in the Bookmarks folder of Safari by default.

### For Windows® Phone Devices

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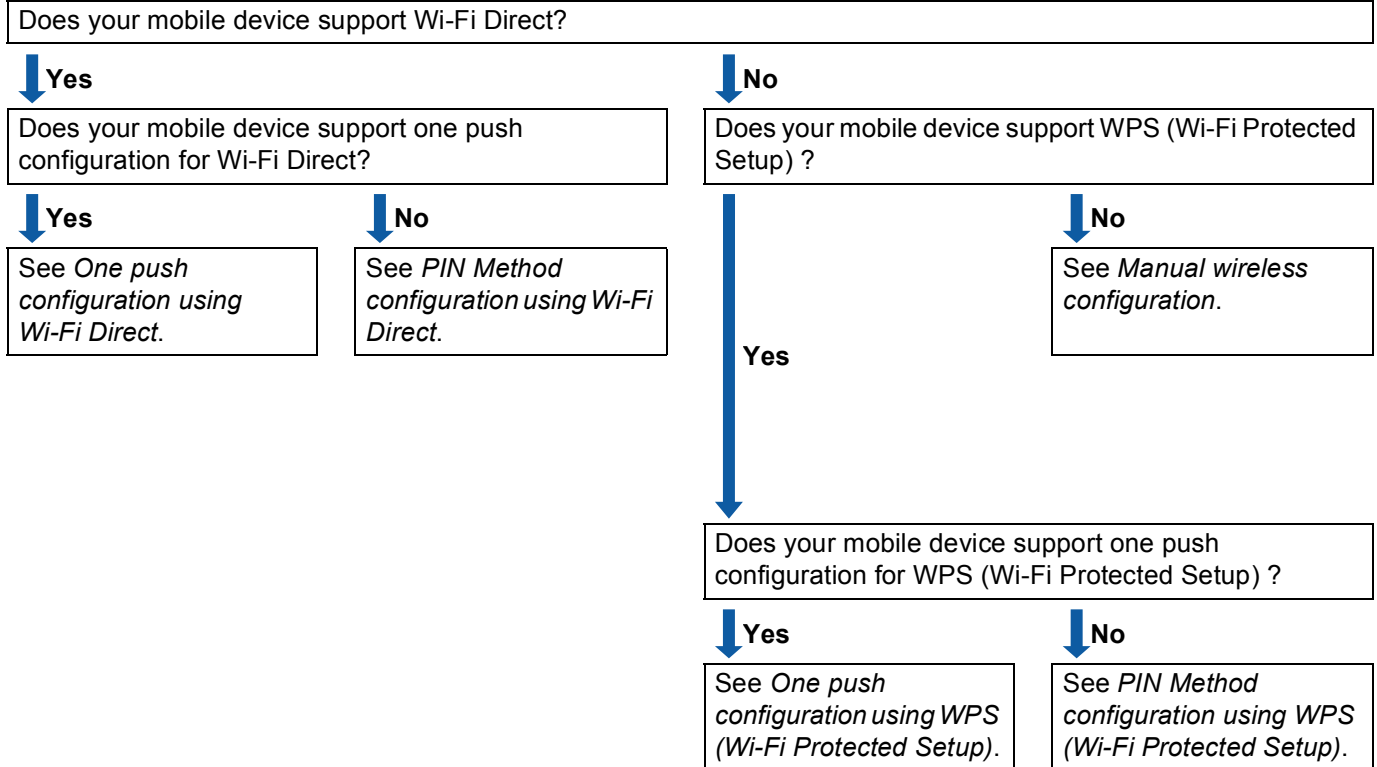
You can download and install Brother iPrint&Scan from the Windows® Phone Marketplace. To take advantage of all the features supported by Brother iPrint&Scan, make sure you are using the latest version.

To download and install or uninstall Brother iPrint&Scan, please refer to the user's guide for your mobile device.

## Step by step chart for Wi-Fi Direct network configuration

The following instructions will offer five methods for configuring your Brother machine in a wireless network environment. Choose the method you prefer for your environment.

### Check your mobile device for configuration.



- One push configuration using Wi-Fi Direct  
See *One push configuration using Wi-Fi Direct* >> page 5.
- One push configuration using WPS (Wi-Fi Protected Setup)  
See *One push configuration using WPS (Wi-Fi Protected Setup)* >> page 6.
- PIN Method configuration using Wi-Fi Direct  
See *Configuration using the PIN Method of Wi-Fi Direct* >> page 7.
- PIN Method configuration using WPS (Wi-Fi Protected Setup)  
See *Configuration using the PIN Method of WPS (Wi-Fi Protected Setup)* >> page 8

- Manual wireless configuration

See *Manual configuration for a Wi-Fi Direct network* >> page 9.



**Note**

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To use the Brother iPrint&Scan functionality in a Wi-Fi Direct network configured by *One push configuration using Wi-Fi Direct* or by *PIN Method configuration using Wi-Fi Direct*, the device you use to configure Wi-Fi Direct must be running Android 4.0 or greater.

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# Configuring your network using Wi-Fi Direct

The Wi-Fi Direct network settings are configured from the control panel of the machine.

## One push configuration using Wi-Fi Direct

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If your mobile device supports Wi-Fi Direct, you can configure a Wi-Fi Direct network by following these instructions.

- 1 Press ▲ or ▼ to choose `Network`.  
Press **OK**.
- 2 Press ▲ or ▼ to choose `Wi-Fi Direct`.  
Press **OK**.
- 3 Press ▲ or ▼ to choose `Push Button`.  
Press **OK**.
- 4 When `Wi-Fi Direct On?` is displayed, press ▲ to accept.  
To cancel, press ▼.
- 5 When `Other Network I/F will be disabled. Do you want to continue?` ▲OK ▼Cancel is displayed, press ▲ to accept.  
To cancel, press ▼.
- 6 Activate Wi-Fi Direct on your mobile device (see your mobile device's user's guide for instructions) when `Activate Wi-Fi Direct on other device and press OK. is displayed`.  
Press **OK** on your machine. This will start the Wi-Fi Direct setup.  
To cancel, press **Back**.
- 7 Do one of the following:
  - When your Brother machine is the G/O (Group Owner), your mobile device will try to connect to the machine directly.
  - When your Brother machine is not the G/O (Group Owner), the machine will display available device names to configure a Wi-Fi Direct network with. Choose the mobile device you want to connect to and press **OK**. You can re-search for available devices by pressing `Rescan`.
- 8 If your mobile device connects successfully, the machine shows `Connected`.  
You have completed the Wi-Fi Direct network setup. For information on printing from your mobile device, you can download the Mobile Print/Scan Guide for Brother iPrint&Scan or the AirPrint Guide from the Brother Solutions Center (<http://solutions.brother.com/>).  
If the connection failed, see *Troubleshooting* >> page 10.



## One push configuration using WPS (Wi-Fi Protected Setup)

If your mobile device supports WPS (PBC; Push Button Configuration), you can configure a Wi-Fi Direct network by following these instructions.

- 1 Press ▲ or ▼ to choose `Network`. Press **OK**.
- 2 Press ▲ or ▼ to choose `Wi-Fi Direct`. Press **OK**.
- 3 Press ▲ or ▼ to choose `Group Owner` and then press **OK**.
- 4 Press ▲ or ▼ to choose `On` and then press **OK**.
- 5 Press ▲ or ▼ to choose `Push Button`. Press **OK**.
- 6 When `Wi-Fi Direct On?` is displayed, press ▲ to accept. To cancel, press ▼.
- 7 When `Other Network I/F will be disabled. Do you want to continue?` ▲OK ▼Cancel is displayed, press ▲ to accept. To cancel, press ▼.
- 8 When `Activate Wi-Fi Direct on other device and press OK.` is displayed, activate your mobile device's WPS one push configuration method (see your mobile device's user's guide for instructions) and then press **OK** on your machine. This will start the Wi-Fi Direct setup. To cancel, press **Back**.
- 9 If your mobile device connects successfully, the machine shows `Connected`. You have completed the Wi-Fi Direct network setup. For information on printing from your mobile device, you can download the Mobile Print/Scan Guide for Brother iPrint&Scan or the AirPrint Guide from the Brother Solutions Center (<http://solutions.brother.com/>). If the connection failed, see *Troubleshooting* >> page 10.

## Configuration using the PIN Method of Wi-Fi Direct

If your mobile device supports the PIN Method of Wi-Fi Direct, you can configure a Wi-Fi Direct network by following these instructions.

- 1 Press ▲ or ▼ to choose `Network`. Press **OK**.
- 2 Press ▲ or ▼ to choose `Wi-Fi Direct`. Press **OK**.
- 3 Press ▲ or ▼ to choose `PIN Code`. Press **OK**.
- 4 When `Wi-Fi Direct On?` is displayed, press ▲ to accept. To cancel, press ▼.
- 5 When `Other Network I/F will be disabled. Do you want to continue?` ▲**OK** ▼**Cancel** is displayed, press ▲ to accept. To cancel, press ▼.
- 6 Activate Wi-Fi Direct on your mobile device (see your mobile device's user's guide for instructions) when `Activate Wi-Fi Direct on other device and press OK.` is displayed. Press **OK** on your machine. This will start the Wi-Fi Direct setup. To cancel, press **Back**.
- 7 Do one of the following:
  - When your Brother machine is the G/O (Group Owner), the machine will wait for a connection request from your mobile device. When `Input PIN Code` appears, input the PIN displayed on your mobile device to the machine. Press **OK**. Follow the instructions and go to step 9.
  - If the PIN is displayed on your Brother machine, input the PIN to your mobile device.
  - When your Brother machine is not the G/O (Group Owner), the machine will display available device names to configure a Wi-Fi Direct network with. Choose a mobile device you want to connect to and press **OK**. You can re-search for available devices by pressing `Rescan`. Go to step 8.
- 8 Do one of the following:
  - Press ▲ to display the PIN on your machine and input the PIN to your mobile device. Follow the instructions and then go to step 9.
  - Press ▼ to input a PIN shown by your mobile device to the machine and then press **OK**. Follow the instructions and then go to step 9.
  - If your mobile device does not display a PIN, press **Cancel** on your Brother machine. Go back to step 1 and try again.
- 9 If your mobile device connects successfully, the machine shows `Connected`. You have completed the Wi-Fi Direct network setup. For information on printing from your mobile device, you can download the Mobile Print/Scan Guide for Brother iPrint&Scan or the AirPrint Guide from the Brother Solutions Center (<http://solutions.brother.com/>). If the connection failed, see *Troubleshooting* >> page 10.

## Configuration using the PIN Method of WPS (Wi-Fi Protected Setup)

If your mobile device supports the PIN Method of WPS (Wi-Fi Protected Setup), you can configure a Wi-Fi Direct network by following these instructions.

- 1 Press ▲ or ▼ to choose `Network`.  
Press **OK**.
- 2 Press ▲ or ▼ to choose `Wi-Fi Direct`.  
Press **OK**.
- 3 Press ▲ or ▼ to choose `Group Owner` and then press **OK**.
- 4 Press ▲ or ▼ to choose `On` and then press **OK**.
- 5 Press ▲ or ▼ to choose `PIN Code`.  
Press **OK**.
- 6 When `Wi-Fi Direct On?` is displayed, press ▲ to accept.  
To cancel, press ▼.
- 7 When `Other Network I/F will be disabled. Do you want to continue?` ▲OK ▼Cancel is displayed, press ▲ to accept.  
To cancel, press ▼.
- 8 When `Activate Wi-Fi Direct on other device and press OK. is displayed`, activate your mobile device's WPS PIN configuration method (see your mobile device's user's guide for instructions) and then press **OK** on your machine. This will start the Wi-Fi Direct setup.  
To cancel, press **Back**.
- 9 The machine will wait for a connection request from your mobile device. When `Input PIN Code` appears, input the PIN displayed on your mobile device to the machine.  
Press **OK**.
- 10 If your mobile device connects successfully, the machine shows `Connected`.  
You have completed the Wi-Fi Direct network setup. For information on printing from your mobile device, you can download the Mobile Print/Scan Guide for Brother iPrint&Scan or the AirPrint Guide from the Brother Solutions Center (<http://solutions.brother.com/>).  
If the connection failed, see *Troubleshooting* >> page 10.

## Manual configuration for a Wi-Fi Direct network

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If your mobile device does not support Wi-Fi Direct or WPS, you must configure a Wi-Fi Direct network manually.

- 1 Press ▲ or ▼ to choose `Network`.  
Press **OK**.
- 2 Press ▲ or ▼ to choose `Wi-Fi Direct`.  
Press **OK**.
- 3 Press ▲ or ▼ to choose `Manual`.  
Press **OK**.
- 4 When `Wi-Fi Direct On?` is displayed, press ▲ to accept.  
To cancel, press ▼.
- 5 When `Other Network I/F will be disabled. Do you want to continue?` ▲**OK** ▼**Cancel** is displayed, press ▲ to accept.  
To cancel, press ▼.
- 6 The machine will show the SSID name and Password for 2 minutes. Go to the wireless network settings page of your mobile device and input the SSID name and password.
- 7 If your mobile device connects successfully, the machine shows `Connected`.  
You have completed the Wi-Fi Direct network setup. For information on printing from your mobile device, you can download the Mobile Print/Scan Guide for Brother iPrint&Scan or the AirPrint Guide from the Brother Solutions Center (<http://solutions.brother.com/>).  
If the connection failed, see *Troubleshooting* >> page 10.

## Overview

This chapter explains how to resolve typical network problems you may encounter when using the Brother machine. If, after reading this chapter, you are unable to resolve your problem, please visit the Brother Solutions Center at (<http://solutions.brother.com/>).

For additional information, please go to the Brother Solutions Center at (<http://solutions.brother.com/>) and click Manuals on your model page to download other manuals.

## Identifying your problem

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Make sure that the following items are configured before reading this chapter.

<b>First check the following:</b>
The power cord is connected correctly and the Brother machine is turned on.
All protective packaging has been removed from the machine.
The toner cartridges and drum unit are installed correctly.
The front and back covers are fully closed.
Paper is inserted correctly in the paper tray.

### Go to the page for your solution from the lists below

- Error messages when using the Wi-Fi Direct control panel menu.  
See *Error messages when configuring Wi-Fi Direct from the control panel menu* >> page 11
- I cannot complete the Wi-Fi Direct network setup configuration.  
See *I cannot complete the Wi-Fi Direct network setup configuration.* >> page 12
- I want to check my network devices are working correctly.  
See *I want to check my network devices are working correctly.* >> page 12

### Error messages when configuring Wi-Fi Direct from the control panel menu

Error Message	Cause	Action
Connection Fail	The Brother machine and your mobile device cannot communicate during the configuration.	<ul style="list-style-type: none"> <li>■ Move the mobile device closer to your Brother machine.</li> <li>■ Move your Brother machine and the mobile device to an obstruction-free area.</li> <li>■ If you are using the PIN Method of WPS, make sure you have input the correct PIN code.</li> </ul>
Connection Error	Other devices are trying to connect to the Wi-Fi Direct network at the same time.	Make sure there are no other devices trying to connect to the Wi-Fi Direct network and then try to configure the Wi-Fi Direct settings again.
No Device	The Brother machine cannot find your mobile device.	<ul style="list-style-type: none"> <li>■ Make sure your machine and mobile device are in the Wi-Fi Direct mode.</li> <li>■ Move the mobile device closer to your Brother machine.</li> <li>■ Move your Brother machine and the mobile device to an obstruction-free area.</li> <li>■ If you are manually configuring the Wi-Fi Direct network, make sure you have entered the correct password.</li> <li>■ If your mobile device has a configuration page for how to obtain an IP address, make sure the IP address of your mobile device has been configured via DHCP.</li> </ul>
Cannot Connect A device is already connected.	Another mobile device is already connected to the Wi-Fi Direct network when the Brother machine is the G/O (Group Owner).	After the current connection between your Brother machine and another mobile device has shut down, try and configure the Wi-Fi Direct settings again. You can confirm the connection status by printing the Network Configuration Report >> Network User's Guide: <i>Printing the Network Configuration Report</i> .

**I cannot complete the Wi-Fi Direct network setup configuration.**

Question	Solution
Are your security settings (SSID/password) correct?	<ul style="list-style-type: none"> <li>■ Reconfirm the SSID and password.</li> </ul> <p>If you are using your machine as a G/O (Group Owner) in manual configuration, the SSID and password are displayed on the machine's control panel during the configuration procedure.</p> <p>If you are using your mobile device as a G/O (Group Owner) in manual configuration, the SSID and password are displayed on the mobile device's screen during the configuration procedure.</p> <ul style="list-style-type: none"> <li>■ For information on what the SSID name is, see <i>SSID</i> &gt;&gt; page 14.</li> </ul>
Is your Brother machine placed too far from your mobile device?	Move your Brother machine within about 3.3 feet (1 meter) from the mobile device when you configure the Wi-Fi Direct network settings.
Are there any obstructions (walls or furniture, for example) between your machine and the mobile device?	Move your Brother machine to an obstruction-free area.
Is there a wireless computer, Bluetooth supported device, microwave oven or digital cordless phone near the Brother machine or the mobile device?	Move other devices away from the Brother machine or the mobile device.
I have checked and tried all of the above, but still cannot complete the Wi-Fi Direct configuration. Is there anything else I can do?	<ul style="list-style-type: none"> <li>■ Turn your Brother machine Off and back On. Then try and configure the Wi-Fi Direct settings again.</li> <li>■ If you are using your Brother machine as a client, confirm how many devices are allowed in the current Wi-Fi Direct network and then check how many devices are connected.</li> </ul>

**I want to check my network devices are working correctly.**

Question	Solution
Are your Brother machine and mobile device turned on?	Make sure you have confirmed all instructions in <i>First check the following:</i> >> page 10.
Where can I find my Brother machine's network settings, such as IP address?	Print the Network Configuration Report >> Network User's Guide: <i>Printing the Network Configuration Report.</i>

## Wi-Fi Direct network terms

### Group Owner (G/O)

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If you set Group Owner to `On`, your Brother machine serves as an access point when you configure a Wi-Fi Direct network. The G/O assigns a SSID name, password and IP address for the Wi-Fi Direct network. The default setting is `Off`.

### Device Information

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#### Device Name

You can check the device name of the machine in the Wi-Fi Direct network environment. The device name will be shown as HL-xxxx\*\* (where xxx is your model name and \*\* is the character string assigned by your Brother machine).

#### SSID

This field displays the current Wi-Fi Direct network SSID name. The display shows up to 32 characters of the SSID name.

#### IP Address

This field displays the current IP address of the machine assigned by the G/O.

### Status Information

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#### Status

This field displays the current Wi-Fi Direct network status. When your machine is a G/O, the machine shows `G/O Active(**)` (where \*\* shows the number of devices). When your machine is a client, the machine shows `Client Active`. If you see `Off`, your machine's Wi-Fi Direct interface is disabled.

#### Signal

This field displays the current Wi-Fi Direct network signal strength.

#### Channel

This field displays the current Wi-Fi Direct network channel.

#### Speed

This field displays the current Wi-Fi Direct network speed.



## I/F Enable

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If you want to use the Wi-Fi Direct network connection, set `I/F Enable` to On.

# Network terms and concepts

## Network terms

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### ■ WPA2-PSK

Enables a Wi-Fi Protected Access Pre-shared key (WPA-PSK/WPA2-PSK), which enables the Brother wireless machine to associate with access points using TKIP for WPA-PSK or AES for WPA-PSK and WPA2-PSK (WPA-Personal).

### ■ AES

AES (Advanced Encryption Standard) provides stronger data protection by using a symmetric-key encryption.

### ■ WPA2 with AES

Uses a Pre-Shared Key (PSK) that is 8 or more characters in length, up to a maximum of 63 characters.

### ■ SSID

Each wireless network has its own unique network name and it is technically referred to as the SSID. The SSID is a 32-byte or less value and is assigned to the access point. The wireless network devices you want to associate to the wireless network should match the access point. The access point and wireless network devices regularly send wireless packets (referred to as beacons) which have the SSID information. When your wireless network device receives a beacon, you can identify wireless networks that are close enough to connect to.

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These machines are approved for use in the country of purchase only. Local Brother companies or their dealers will only support machines purchased in their own countries.