
Setting Up a Network Connection

User Guide

FUJIFILM
Value from Innovation

SonoSite

Manufacturer

FUJIFILM SonoSite, Inc.
21919 30th Drive SE
Bothell, WA 98021 USA
T: 1-888-482-9449 or 1-425-951-1200
F: 1-425-951-1201

EC Authorized Representative

FUJIFILM SonoSite B.V.
Joop Geesinkweg 140
1114 AB Amsterdam,
The Netherlands

Australia Sponsor

FUJIFILM SonoSite Australasia Pty Ltd
114 Old Pittwater Road
BROOKVALE, NSW, 2100
Australia

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Introduction

To connect to a network (using either a wireless adapter or a LAN connection) from the SonoSite Edge, SonoSite Edge II, SonoSite S Series, SonoSite SII, SonoSite M-Turbo, or SonoSite NanoMaxx ultrasound system, FUJIFILM SonoSite recommends using the network setup described in this document.

Use the setup instructions from the router manufacturer for general information only.

Note

For detailed information about connecting the SonoSite X-Porte ultrasound system to a network and configuring it to a DICOM server, refer to the *SonoSite X-Porte User Guide*.

Process overview

Step	Refer to this document
1a For a wireless connection, install a wireless dongle or adapter. or	1a “Connecting to a network” on page 4. or
1b For a LAN connection, connect an Ethernet cable.	1b The “Preparing the system” section of your ultrasound system user guide.
2a To configure the system to work with DICOM, follow the installation and configuration steps in... or	2a <i>Sending and Receiving DICOM Data on SonoSite, Inc. Systems</i> or
2b To configure the system to work with PDAS (through DICOM), follow the installation and configuration steps in... or	2b the <i>Patient Data Archival Software (PDAS) User Guide</i> or
2c To configure the system to work with SiteLink, follow the installation and configuration steps in...	2c The <i>SiteLink Image Manager User Guide</i>

For more information about any FUJIFILM SonoSite ultrasound system, see the appropriate ultrasound system user guide.

Document conventions

The document follows these conventions:

- ▶ A **WARNING** describes precautions necessary to prevent injury or loss of life.
- ▶ A **Caution** describes precautions necessary to protect the products.
- ▶ A **Note** provides supplemental information.
- ▶ Numbered and lettered steps must be performed in a specific order.
- ▶ Bulleted lists present information in list format but do not imply a sequence.
- ▶ Single-step procedures begin with ❖.

For a description of labeling symbols that appear on the product, see "Labeling Symbols" in the ultrasound system user guide.

Getting help

In addition to this document, contact FUJIFILM SonoSite Technical Support:

Phone (U.S. or Canada)	877-657-8118
Phone (outside U.S. or Canada)	425-951-1330, or call your local representative
Fax	425-951-6700
Email	ffss-service@fujifilm.com
Web	www.sonosite.com
Europe Service Center	Main: +31 20 751 2020 English support: +44 14 6234 1151 French support: +33 1 8288 0702 German support: +49 69 8088 4030 Italian support: +39 02 9475 3655 Spanish support: +34 91 123 8451
Asia Service Center	+65 6380-5581

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System and hardware requirements

- ▶ Ultrasound system: SonoSite Edge, SonoSite Edge II, SonoSite S Series, SonoSite SII, SonoSite M-Turbo, or SonoSite NanoMaxx.
- ▶ 802.11 wireless USB dongle or Wireless and Security Module (required for FIPS 140-2 certification)

WARNING

- ▶ To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Cautions

- ▶ Operating the wireless adapter without a regulatory label or the correct country stamp is illegal. See the documentation from the manufacturer of the adapter.
- ▶ To avoid damage to the wireless USB dongle when using the MDSm or MDS Lite II, remove or insert the USB dongle only when the system is in the stand.
- ▶ For environmental operating and storage specifications, see the operating instructions from the router manufacturer.
- ▶ The Wireless and Security Module is restricted to *indoor* use when operated in the 5.15 to 5.25 GHz frequency range.
- ▶ Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Connecting to a network

Wireless connection

Wireless USB Dongle

The Wireless USB Dongle can be used with the SonoSite Edge, SonoSite Edge II, SonoSite S Series, SonoSite SII, SonoSite M-Turbo, and SonoSite NanoMaxx ultrasound systems.

To connect the Wireless USB Dongle, refer to the *Wireless Dongle Mounting Kit Installation Instructions* that come in the Wireless USB Dongle kit.

Wireless and Security Adapter

The Wireless and Security Adapter can be used with the SonoSite Edge II, SonoSite SII, and SonoSite X-Porte ultrasound systems.

A 5 GHz wireless transmission and Federal Information Processing Standards (FIPS) 140-2 certification are available by license in some countries. FIPS certification is only available if the Wireless and Security Module is installed on your system.

- ❖ To connect the Wireless and Security Adapter, refer to the *Wireless and Security Adapter Installation Instructions* that come in the Wireless and Security Module kit.

LAN connection

To connect to a local area network (LAN), refer to the “Preparing the system” section of your ultrasound system user guide.

Configuring your ultrasound system with DICOM/PDAS or SiteLink

To archive your ultrasound system, you can connect it to an existing network using DICOM/PDAS or SiteLink.

- ▶ For detailed instructions on configuring DICOM or PDAS, refer to *Sending and Receiving DICOM Data on SonoSite, Inc. Systems* or the *PDAS User Guide*.
- ▶ For detailed instructions on configuring SiteLink, refer to the *SiteLink Image Manager User Guide*.

Importing and deleting wireless certificates

Although you can connect without wireless certificates, they help to ensure network security.

You can obtain certificates from your network administrator. After importing a certificate, you select it while configuring the location.

To import or delete wireless certificates

The system supports Base64 and DER encoded format and the following file types: CER, PFX, and PVK.

- 1 On the Connectivity setup page on the ultrasound system, select **Wireless Certificates**.

A list of certificates on the system appears.

- 2 Do one of the following:

- ▶ Import certificates: Insert the USB storage device that contains the certificates. Verify that the certificates on the system plus those on the USB storage device do not exceed 20 certificates. Delete certificates if necessary. Then select **Import** on-screen.
- ▶ Delete certificates: Select the certificates to delete, and select **Delete**.

3 Select **Back** on-screen.

4 Select **Done** on-screen.

5 Restart the system.

Wireless specifications

Wireless USB Dongle (Panda)

The Wireless USB Dongle uses the Industrial, Scientific, and Medical (ISM) frequency bands from 2.412 to 2.4835 GHz, depending on your country's regulation. The dongle implements the following methods of transmission:

- ▶ IEEE 802.11 b/g: Peak rate 54 Mbps, Peak throughput: 27 Mbps
- ▶ IEEE 802.11n:
 - ▶ 1 T1 R. Peak rate: 150 Mbps, Peak throughput: 90 Mbps
 - ▶ 1 T2R. Peak rate: 300 Mbps, Peak throughput: Rx 160 Mbps
 - ▶ 2T2R. Peak rate: 300 Mbps, Peak throughohput: Rx 260 Mbps



Wireless and Security Module (Laird)



The Wireless and Security Module uses the Industrial, Scientific, and Medical (ISM) frequency bands from 1.400 to 2.4835 GHz, and from 5.100 to 5.800 GHz. The module implements four different methods of transmission:

- ▶ IEEE 802.11a with Orthogonal Frequency Division Multiplexing (OFDM) at 11 dBm \pm 2 dBm @ 54 Mbps
- ▶ IEEE 802.11b with Direct Sequence Spread Spectrum (DSSS) at 16 dBm \pm 2.0 dBm @ 11 Mbps
- ▶ IEEE 802.11g with Orthogonal Frequency Division Multiplexing (OFDM) at 13 dBm \pm 2.0 dBm @ 54 Mbps
- ▶ IEEE 802.11n with Orthogonal Frequency Division Multiplexing (OFDM) at 12 dBm \pm 2.0 dBm (802.11gn) @ MCS7

Troubleshooting

If you have trouble connecting the ultrasound system to the wireless network, see [Table 1, “Troubleshooting”](#) on page 7 for suggestions. If the trouble continues, contact FUJIFILM SonoSite.

Table 1: Troubleshooting

<p>The ultrasound system does not connect.</p>	<ul style="list-style-type: none"> ❖ Check the following for information about the network: <ul style="list-style-type: none"> ▶ Make sure that the following icons appear in the system status area on the ultrasound system screen: <ul style="list-style-type: none"> ▶ Wireless  ▶ Ultrasound-connected  ▶ On the ultrasound system, display the Network Status setup page. The page displays three lines of general information about the connection and five additional lines about the wireless connection (if present).
<p>The ultrasound system does not authenticate, and the wireless icon does not appear on-screen.</p>	<ul style="list-style-type: none"> ❖ Check the following <ul style="list-style-type: none"> ▶ Make sure that the system is communicating with your access point: Make sure that the network name on the system is the same as the network name (SSID) of the access point. The default network name is SONOSITE. The network name is case sensitive. ▶ If you use WEP or WPA-PSK, make sure that your WEP keys or WPA/WPA2 Pre-Shared key match between the access point and ultrasound system. These keys are case sensitive. ▶ The Network Status setup page may show that you associated successfully, but you are unable to get a DHCP address because the WEP key is set incorrectly. ▶ If you select the 802.1x RADIUS security option, make sure that the access point is turned on and properly configured with 802.1x enabled and that the Shared Secret key between the access point and authentication server match. ▶ Use the PING utility from the server to make sure that the authentication server is active and can communicate with the access point.

Table 1: Troubleshooting (continued)

The system does not display the wireless icon after you select a valid location.	<ol style="list-style-type: none">1 Turn off the ultrasound system.2 Remove the wireless USB dongle.3 Verify the following:<ul style="list-style-type: none">▶ All wireless settings for the selected location are valid.▶ The selected wireless certificate is in Base64 format.▶ The system date and time are correct.4 Insert the wireless USB dongle.5 Turn on the system.
The system displays the wireless icon but does not communicate with DICOM.	<ul style="list-style-type: none">❖ Make sure that the DICOM setup is correct. See <i>Sending and Receiving DICOM Data on SonoSite Systems</i>.
You cannot import wireless certificates.	<ul style="list-style-type: none">❖ Make sure that the USB storage device contains wireless certificates by viewing its contents on a PC.



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