WA102930XB

Wireless LAN Survey

NX-1

User's Guide

silex technology

Index

1. Introduction

Thank you for purchasing Wireless LAN Survey NX-1 (called "NX-1" below).

1-1. Introduction

This manual provides information on how to configure and use NX-1.
Please read the Safety Instructions carefully before you begin.

Disclaimers

- The unauthorized transfer or copying of the content of this manual, in whole or in part, without prior written consent is expressly prohibited by law.
- The content of this manual is subject to change without notice.
- This manual was prepared to accurately match the content of each OS, but the actual information shown on the computer monitor may differ from the content of this manual due to future OS version upgrades, modifications, and other changes.
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1-2. Safety Instructions

This section provides the safety instructions for safe use of NX-1.
To ensure safe and proper use, please read the following information carefully before using NX-1. The safety instructions include important information on safe handling of NX-1 and on general safety issues. Please be sure to read this page before using.

< Indication of the warning >

	Danger	"Danger" indicates the existence of a hazard that could result in death or serious injury if the safety instruction is not observed.
	Warning	"Warning" indicates the existence of a hazard that could result in bodily injury and/or material damage if the safety instruction is not observed.

< Indication of the symbol >

	This symbol indicates the warning and notice. (Example:  "Danger of the electric shock")
	This symbol indicates the prohibited actions. (Example:  "Disassembly is prohibited")
	This symbol indicates the necessary actions. (Example:  "Remove the AC plug from an outlet")

Danger

 	* Do not allow physical impact. When damaged, turn off your network device, unplug the AC plug of NX-1 from power outlet (unplug the network cable from Ethernet HUB when receiving power over the Ethernet) and contact your point of purchase. Failure to take this action could cause fire or an electrical shock. * In the following cases, turn off your network device, unplug the AC plug of NX-1 from power outlet (unplug the network cable from Ethernet HUB when receiving power over the Ethernet) and contact your point of purchase for a repair or inspection. Failure to take this action could cause fire or an electrical shock. * When NX-1 emits a strange smell, heat, or smoke. * When foreign objects (liquid, metal, etc.) gets into NX-1.
	* Keep the cord and cables away from children. They may be injured or receive a shock.
	* Do not disassemble or modify NX-1. Doing so could result in fire or an electrical shock, or cause NX-1 to malfunction. * Do not disassemble or alter the AC adapter bundled with NX-1. Doing so could result in fire or an electrical shock, or cause NX-1 to malfunction.

Warning

	* When unplugging NX-1, do not pull on the cord. The cord may break resulting in fire and/or electric shock. Pull only on the plug.
	* When moving NX-1, turn off connected devices and NX-1 by unplugging the power cables from the outlet (if you are receiving power over the Ethernet (PoE), unplug the network cable from the HUB). * Always use the AC adapter bundled with NX-1. Other AC adapters may cause NX-1 to malfunction. * Verify all cables are connected properly and safely before using NX-1. * When NX-1 will not be used for an extended time, unplug the power cables of connected devices and NX-1.
	* Do not use or store NX-1 under the following conditions to avoid potential damage to NX-1. - Hard vibrations - Tilted places - Unstable places - Exposure to the direct rays of the sun - Humid or dusty places - Wet place (kitchen, bathroom, etc.) - Heated places (near stove, heater, etc.) - Wide temperature change - Strong electromagnetic field (near magnet, radio, wireless device, etc.)

1-3. User Registration and Customer Services

User registration

To enable us to provide better services (support and repair), please perform the user registration process from our website below:

	URL
USA	http://www.silexamerica.com/support/product-registration/
Japan	http://www.silex.jp/register/

Note

- For user registration, a serial number is required.

Product Information

The services below are available from the Silex Technology website. For details, please visit the Silex Technology website.

	URL
USA	http://www.silexamerica.com/
Japan	http://www.silex.jp/

- Latest firmware download
- Latest software download
- Latest manual download
- Support information (FAQ)

Customer Support Center

Customer Support is available by e-mail or telephone for any problems that you may encounter. If you cannot find the relevant problem in this manual or on our website, or if the corrective procedure does not resolve the problem, please contact Silex Technology Customer Support.

Contact Information		
USA	+1-801-748-1199	support@silexamerica.com
Japan	+81-(0)774-98-3981	support@silex.jp

Note

- Visit the Silex Technology website (http://www.silexamerica.com/) for the latest FAQ and product information.

2. About NX-1

NX-1 is a wireless frame capture unit supporting IEEE 802.11 a/b/g/n. NX-1 enables you to capture wireless LAN frames to survey a wireless environment before introducing wireless LAN products, to monitor the operating status of NX-1, and to troubleshoot problems.
You can view the analysis results in the web page of NX-1.

2-1. Included Items

The following items are included with this package.

- NX-1
- AC adaptor
- Rubber feet
- Warranty booklet
- GPL notice sheet
  (About distribution of GPL software source code)
- Website guide

2-2. Features

NX-1 has the following features.

■ NX-1 features the Operating Mode, which consists of the following four operation modes. You can make use of them for various purposes concerning use of wireless LAN products, such as an environment survey prior to introduction, operating status monitoring, and troubleshooting.

○ Survey Mode
Measures use of specified wireless channels and reports the result in chart.

○ Monitoring Mode
Monitors the surrounding wireless environment regularly and reports the results in chronological order in charts.

○ Spectrum Analyzer
Measures radio noise that affects wireless LAN and reports the results in chart.

○ Capture Mode
Captures wireless LAN frames of specified channels.

■ Standalone operation
NX-1 can be installed in a target wireless environment for standalone operation and enables you to make a survey without technical knowledge about operating the unit.

■ Remote control via a wired LAN
In the environment which allows communication with NX-1 via a wired LAN, you can remotely collect wireless LAN environment information and view the analysis results through the Web page of NX-1.

■ External storages
You can store monitored/captured data in a USB storage connected to NX-1.

■ Easy analysis function

Easy analysis function of NX-1 allows you to view collected wireless LAN environment information in the Web page.

■ Print layout view

Wireless LAN information can be displayed in a printable format after it is collected in the survey mode, monitoring mode or spectrum analyzer.

■ AMC Manager (non-free program) / AMC Finder (free program)

NX-1 supports the total management software, "AMC Manager" and "AMC Finder". The AMC Manager provides the useful features as follows:

- Remote device control and monitoring
- Bulk configuration and firmware updates

Note

- For details on the "AMC Manager" and "AMC Finder", please visit our homepage.

2-3. Limitations and Precautions

The following limitations and precautions are applied to NX-1.

Limitations

- NX-1 does not support Short Guard Interval HT20 and cannot capture frames at the corresponding transfer rates.
  The communication at the corresponding rates is not reflected in the reports of the Monitoring Mode and the Survey Mode.

- Depending on the performance of your USB storage, some frames can be missed and not saved in the USB storage. Note that it is not guaranteed for all frames to be captured and stored in all USB storages.

- The Capture Mode of NX-1 does not guarantee that all frames are captured correctly in your wireless LAN environment.

Precautions

Do not perform the following actions during operation of the Operating Mode. The USB storage may be damaged.

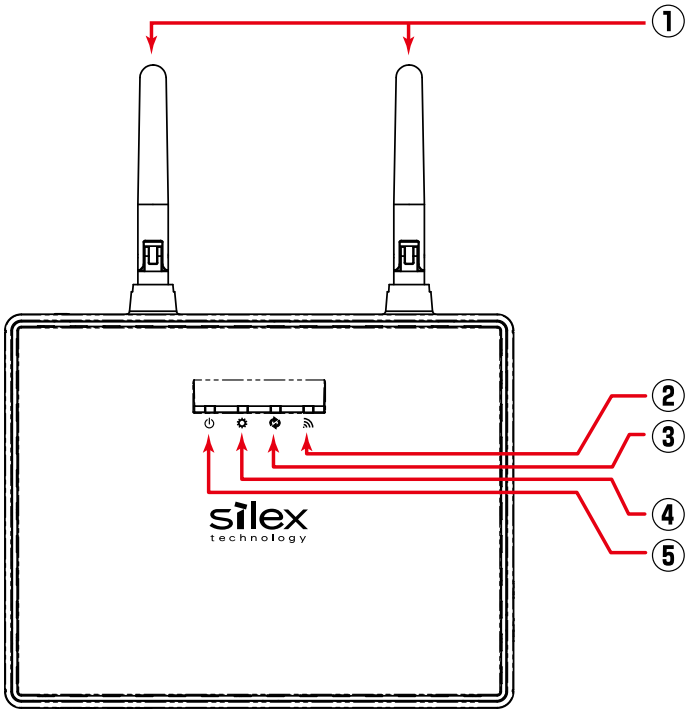
- Disconnect the USB storage from NX-1.
- Unplug the AC adaptor of NX-1 from an outlet (When receiving power over the Ethernet (PoE), unplug the network cable).

Silex Technology will not be held liable for any damage to USB storages and/or data loss as a result of use of NX-1.

2-4. Parts and Functions

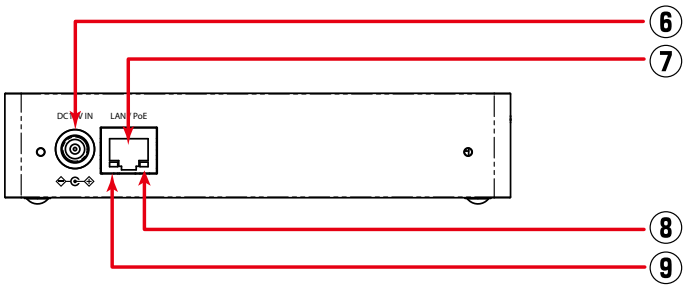
The parts name and functions are as follows:

■ Top



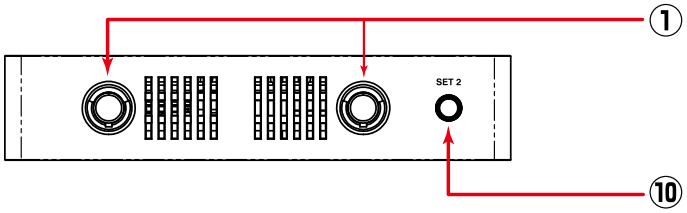
(1)	Wireless LAN Antenna	Antenna for receiving wireless LAN radio signals.	
(2)	WSTAT LED (Green)	BLINK (Green) Turns on for 100 ms when wireless LAN frames are received followed by turning off.	
(3)	BAND LED (Green/Orange/Red)	ON (Green)	Storage writing speed is more than 20 Mbytes/sec.
		ON (Orange)	Storage writing speed is 10 to 20 Mbytes/sec.
		ON (Red)	Storage writing speed is less than 10 Mbytes/sec.
		BLINK (Orange)	Storage writing speed is being measured.
(4)	SETTING LED (Green/Orange/Red)	BLINK (Green)	The Monitoring Mode is running (1 second interval).
		BLINK (Orange)	The Survey Mode is running (1 second interval).
		BLINK (RED)	The Capture Mode is running (1 second interval).
		BLINK ALTERNATELY (Green/Red)	The Spectrum Analyzer mode is running (1 second interval).
		OFF	No mode is running.
(5)	POWER LED (Green/Orange/Red)	ON (Green)	Ready
		BLINK (Orange)	Powering on (1 second interval)
		BLINK (RED)	USB storage writing error (500 ms intervals). * A failure of writing data into a USB storage during an operation results in an error.

■ Front



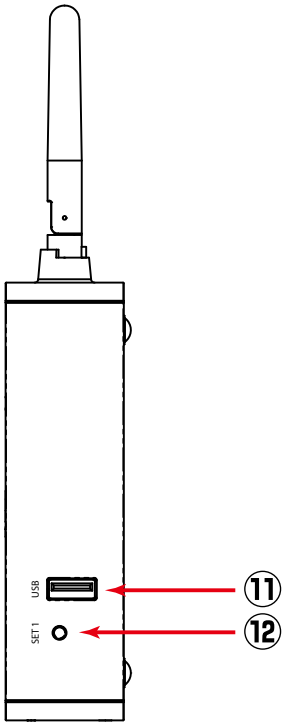
(6)	AC Connector	Connect an AC adaptor.	
(7)	Network Port	Connect a network cable.	
(8)	Status LED	BLINK (Yellow)	Wired LAN packet receive status. Turns on for 100 ms when packets are received followed by turning off.
(9)	Link LED	ON (Green)	A wired LAN is connected.
		OFF	A wired LAN is disconnected.

■ Back



(10)	Control Switch	Starts or stops the pre-configured mode (the Monitoring Mode or the Capture Mode).

■ Right side



(11)	USB Port	Connect a USB storage.	
(12)	Push switch	Factory default configuration	Press when setting NX-1 to factory default configuration. For details, see **5-1. Maintenance Feature** - **Factory Default Configuration**.
		Unmount	Press when unplugging the connected USB storage. Press-and-hold for 1 second. When BAND LED on the top of NX-1 turns off, you can remove the storage.

2-5. Hardware Specification

Operating Environment	Temperature : 0 ℃ to +40 ℃	
	Humidity : 20% to 80%RH (Non-condensing)	
Storage environment	Temperature : -10 ℃ to +50 ℃	
	Humidity : 20% to 90%RH (Non-condensing)	
Compliant standards	VCCI Class B FCC Part15 SubPart B Class B	
CPU	32bit RISC CPU	
Memory	RAM : 64 MByte	
	Flash ROM : 16 MByte	
Wired network interface	10BASE-T/100BASE-TX/1000BASE-T(Auto-sensing) : 1 port Auto MDI/MDIX Power over Ethernet (PoE)	
Wireless network interface	IEEE 802.11a/b/g/n	
Antenna	Non-directional antenna × 2	
USB interface	USB2.0 Hi-Speed port (A type) : 1 port	
Push switch	2	For the Operating Mode: 1 For factory default configuration: 1
LED	Top	POWER LED (Green/Orange/Red) SETTING LED (Green/Orange/Red) BAND LED (Green/Orange/Red) WSTAT LED (Green)
	Network Port	Status LED (Yellow) Link LED (Green)

FCC Notice

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Federal Communication Interference Statement (United States only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment 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 the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

2-6. Software Specification

■ Supported protocols

TCP/IP	Network layer	ARP, IP, ICMP
	Transport layer	TCP, UDP
	Application layer	TELNET, BOOTP, DHCP (Client), HTTP, NTP, JCP (Silex proprietary protocol),

■ Supported Web browsers

The recommended Web browsers are as follows:

○ Internet Explorer 11 or later

- Be sure to disable the Compatibility View feature.
For details, see **A. Appendix** - **A-1. Notes on Web browsers**.

○ Google Chrome 42.0 or later

2-7. OpenSSL License

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit.
(http://www.openssl.org/)

OpenSSL License
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* OF THE POSSIBILITY OF SUCH DAMAGE.
* ==
*
* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com). This product includes software written by Tim
* Hudson (tjh@cryptsoft.com).
*
*/

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*
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* The implementation was written so as to conform with Netscapes SSL.
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* in documentation (online or textual) provided with the package.
*

3. Setup

This chapter explains how to setup NX-1.

3-1. Setup through the Web Page of NX-1

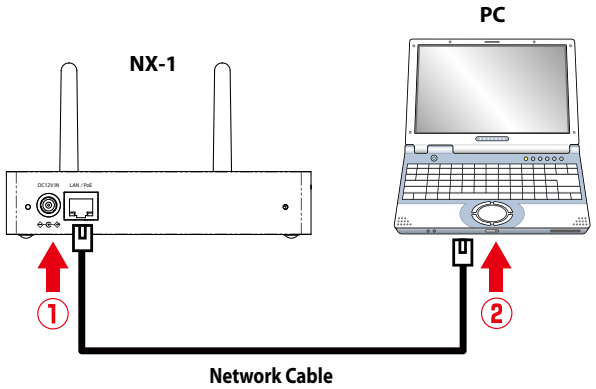
The following explains how to access and set up NX-1 from a Web browser on a PC.

> **TIP**
> - For information about supported Web browsers, see **2-6. Software specification**.
> - To use this setup method, you need to modify PC network settings temporarily.

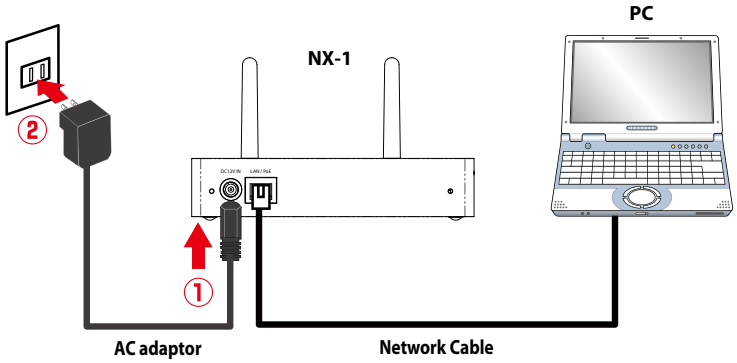
Connecting NX-1 to a Network

The following explains how to set up NX-1 by connecting it directly to your setup PC.

1. Connect NX-1 to your setup PC by using a network cable.



2. Connect the AC adaptor to NX-1 and plug in the AC adaptor into an outlet. NX-1 starts. When NX-1 is ready, the POWER LED (green) on the top of NX-1 stops blinking and becomes ON.



TIP

- Always use the AC adaptor bundled with NX-1. Other AC adaptors may cause failures.

3. Start your setup PC.

Modifying PC Network Settings

You can use PCs to set up NX-1 and to view measurement results. The following explains how to modify PC network settings so that you can access NX-1 from your PC.

The default IP address of NX-1 is **192.168.0.100** (Class C). Set up the IP address of your PC so that it does not overlap the IP address of NX-1.

Example) Network settings

Set up the network settings of your PC as follows:

IP address : 192.168.0.123

Subnet mask : 255.255.255.0

Note

- To modify network settings on Windows 7

1. Click **Start** - **Control Panel** - **Network and Internet** - **View network status and tasks**. The **Network and Sharing center** appears.
2. Click **Local Area Connection**. The **Local Area Connection Status** appears.
3. Click **Properties**. The **Local Area Connection Properties** appear.
4. Choose **Internet Protocol (TCP/IP)** and click **Properties**.
5. Set up **IP address** and **Subnet mask**. Enter **Default gateway** if necessary.

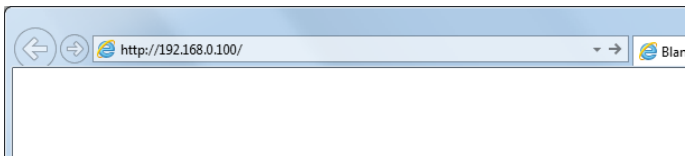
Setting up NX-1

<To access the Web page of NX-1>

Note

- The following screenshots show Internet Explorer 11 on Windows 7. The UI may differ depending on the version of your operating system or that of your Web browser.

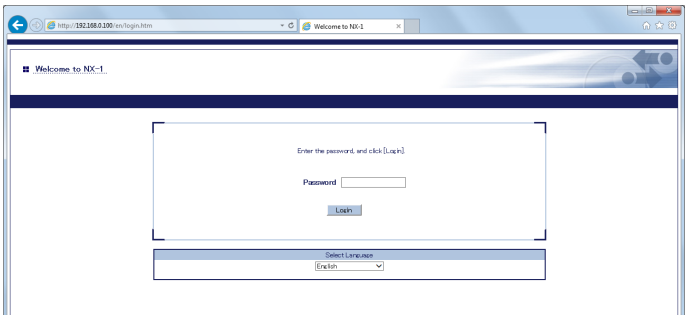
1. Start a Web browser on your setup PC and enter 192.168.0.100 in the address bar.



Note

- "192.168.0.100" is a default IP address configured to NX-1.
- When the IP address is changed during initial setup, enter the new IP address.

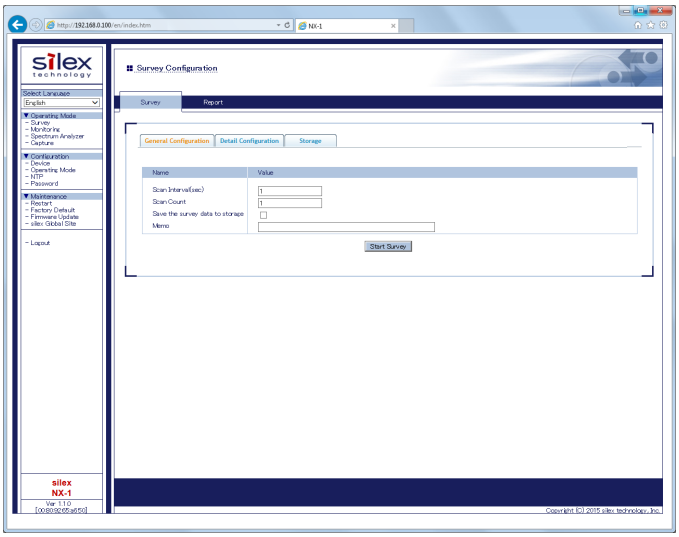
2. The login page of NX-1 is displayed. Click **Login**.



Note

- No default password is set in NX-1.
- When the password has been changed during initial setup, enter the new password.
- You cannot log in while another user is logging in from another device.

3. The Web page of NX-1 is displayed. From **Configuration** in the menu, select an item you want to set up.



■ Device Configuration

The Device Configuration allows you to set up TCP/IP of NX-1.

■ Operating Mode

The Operating Mode allows you to set up the Operating Mode default settings.

■ NTP

The NTP allows you to set up the NTP settings.

■ Password

The Password allows you to set up the password for NX-1.

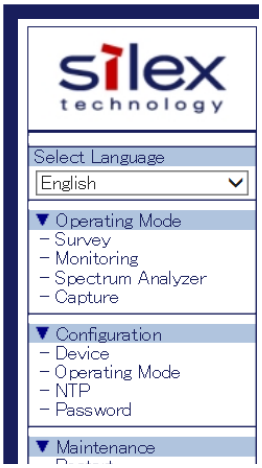
TIP

- The Web page will automatically be logged out if no operations are made for a certain amount of time after it is displayed. (The default is 30 minutes)
  The auto-logout time can be changed from **Configuration** - **Device**.
  To open a report page after log-out, re-login to NX-1.

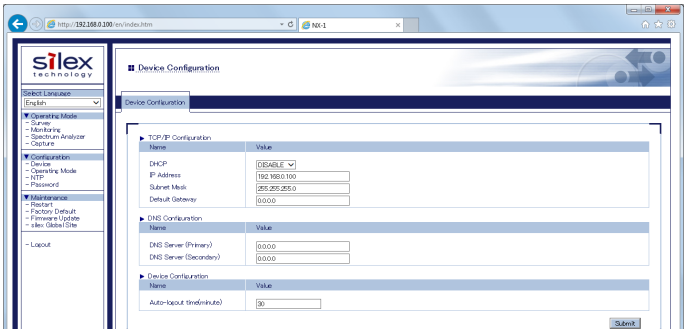
<Device Configuration>

The following explains how to set up TCP/IP of NX-1.

1. From **Configuration** in the Web page menu, click **Device**.



2. The Device Configuration page is displayed. Enter each setting.



Note

- For information on the settings, see **A. Appendix** - **A-2. List of All Settings**.

3. After entering the settings, click **Submit** in the lower right of the Web page.

4. When the setup is completed, restart NX-1.

Note

- For information on how to restart NX-1, see **5-1. Maintenance Feature** - **Restarting** in this manual.
- If you want to make a setup in another page, you do not have to restart NX-1 here. Restart it after you complete the setup.

5. When the restart is completed, the login page of NX-1 is displayed.

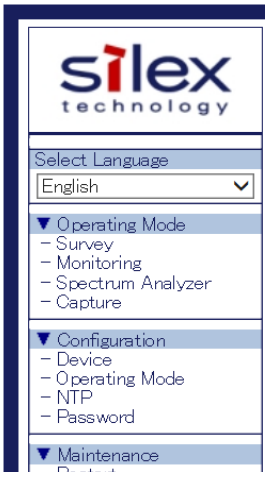
TIP

- When the IP address have been changed to access an existing network, there are cases that you cannot access the Web page of NX-1. In this case, to access the Web page, use a network cable and connect NX-1 to a Ethernet hub of your network.

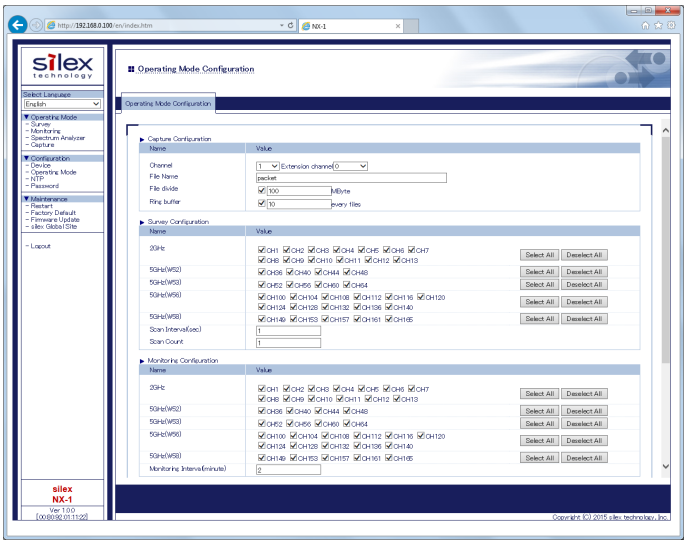
<Operating Mode>

The Operating Mode Configuration allows you to set up the Operating Mode default settings.
The settings entered in this page are displayed as the defaults in the page of the corresponding Operating Mode.

1. From **Configuration** in the Web page menu, click **Operating Mode**.



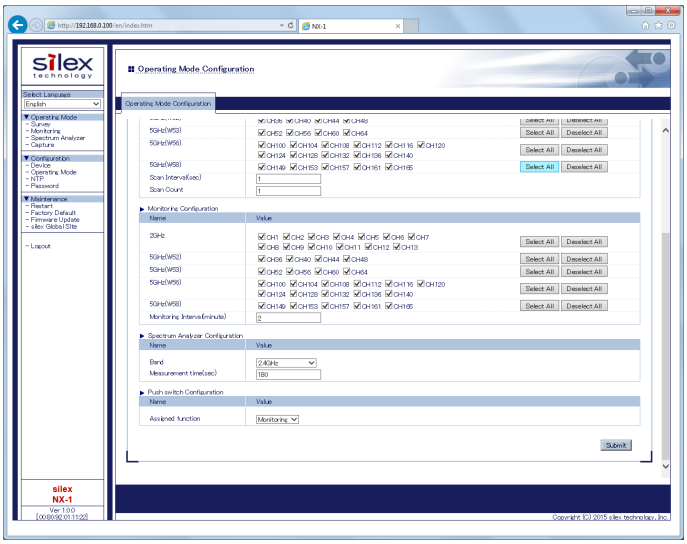
2. The Operating Mode Configuration page is displayed. Enter each setting.



Note

- For information on the settings, see **A. Appendix** - **A-2. List of All Settings**.

3. After entering the settings, click **Submit** in the lower right of the Web page.



4. When the setup is completed, restart NX-1.

Note

- For information on how to restart NX-1, see **5-1. Maintenance Feature** - **Restarting** in this manual.
- If you want to make a setup in another page, you do not have to restart NX-1 here. Restart it after you complete the setup.

5. When the restart is completed, the login page of NX-1 is displayed.

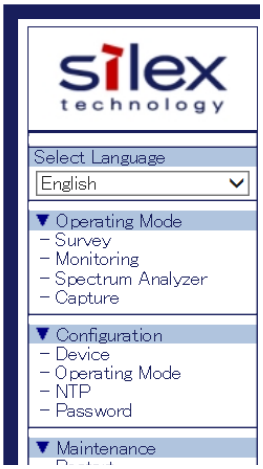
TIP

- When the IP address have been changed to access an existing network, there are cases that you cannot access the Web page of NX-1. In this case, to access the Web page, use a network cable and connect NX-1 to a Ethernet hub of your network.

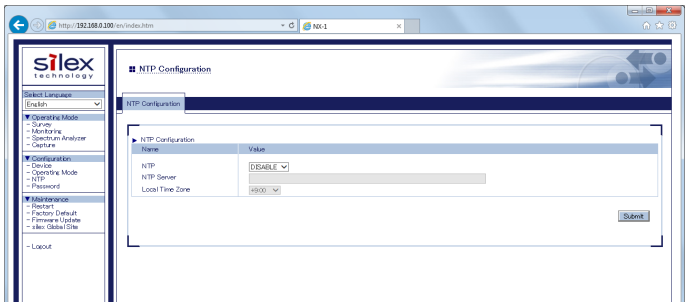
<NTP>

The NTP allows you to set up the NTP settings.

1. From **Configuration** in the Web page menu, click **NTP**.



2. The NTP Configuration page is displayed. Enter each setting.



Note

- For information on the settings, see **A. Appendix** - **A-2. List of All Settings**.

3. After entering the settings, click **Submit** in the lower right of the Web page.

4. When the setup is completed, restart NX-1.

Note

- For information on how to restart NX-1, see **5-1. Maintenance Feature** - **Restarting** in this manual.
- If you want to make a setup in another page, you do not have to restart NX-1 here. Restart it after you complete the setup.

5. When the restart is completed, the login page of NX-1 is displayed.

TIP

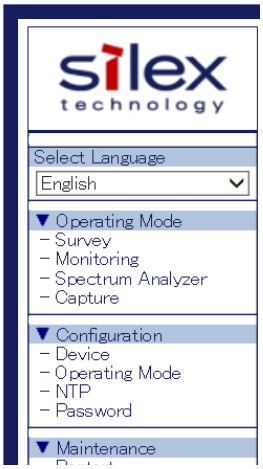
- When the IP address have been changed to access an existing network, there are cases that you cannot access the Web page of NX-1. In this case, to access the Web page, use a network cable and connect NX-1 to a Ethernet hub of your network.

<Password>

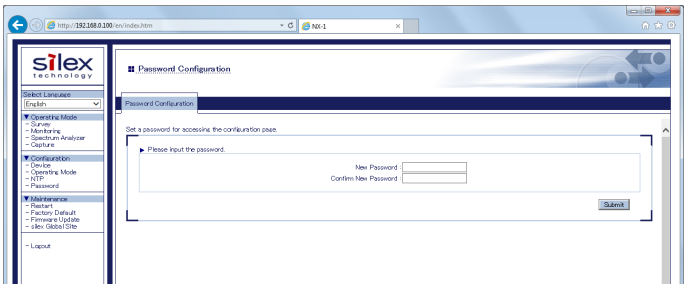
The Password allows you to set up the password for NX-1.

> **TIP**
> - No default password is set in NX-1.
> When using NX-1 with it connected to the public network, be sure to change the password.

1. From **Configuration** in the Web page menu, click **Password**.



2. The Password Configuration page is displayed. Enter a new password.



> **Note**
> - For information on the settings, see **A. Appendix** - **A-2. List of All Settings**.

3. After entering the password, click **Submit** in the lower right of the Web page.

4. When the setup is completed, restart NX-1.

Note

- For information on how to restart NX-1, see **5-1. Maintenance Feature** - **Restarting** in this manual.
- If you want to make a setup in another page, you do not have to restart NX-1 here. Restart it after you complete the setup.

5. When the restart is completed, the login page of NX-1 is displayed.

TIP

- When the IP address have been changed to access an existing network, there are cases that you cannot access the Web page of NX-1. In this case, to access the Web page, use a network cable and connect NX-1 to a Ethernet hub of your network.

4. Using NX-1

This chapter explains how to collect wireless LAN environment information by using NX-1 and how to view analysis results of the easy analysis function of this product.

4-1. Collecting Wireless LAN Environment Information

NX-1 has two methods for collecting wireless LAN environment information.

- Clicking a start button on the Web page of NX-1
- Pressing the Control Switch on NX-1

You can view the analysis results of the collected information in the Web page of NX-1.

Operating Mode	Web page	Control Switch
Survey Mode	Yes	No
Monitoring Mode	Yes	Yes
Spectrum Analyzer	Yes	No
Capture Mode	Yes	Yes

Yes: Supported No: Not supported

TIP

- For information about supported Web browsers, see **2-6. Software Specification**.

Installing NX-1 in a Target Wireless LAN Environment to Collect Information

Install NX-1 in a target wireless LAN environment to collect information.

Installation location of NX-1 differs depending on your target devices:

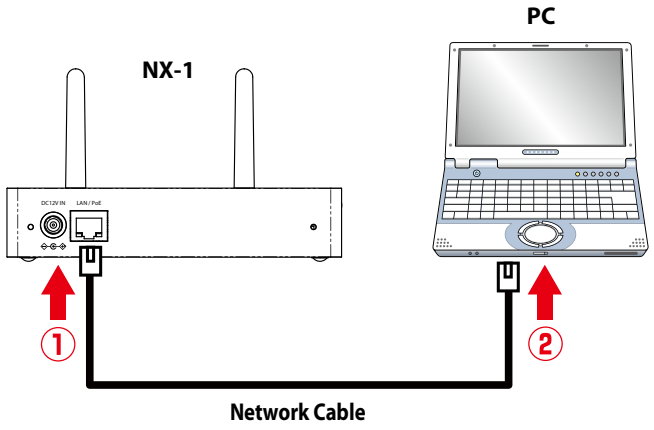
- When collecting information from multiple wireless LAN devices
  Install NX-1 at the center surrounded by the target wireless LAN devices.

- When collecting information from a particular wireless LAN device
  Install NX-1 near the target wireless LAN device

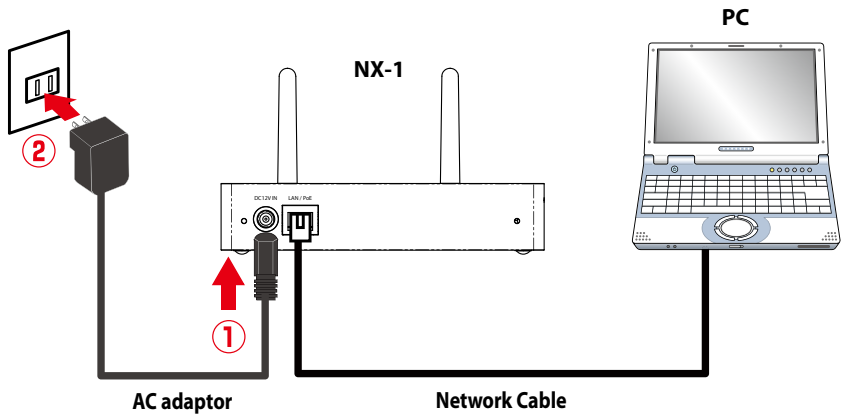
■ When collecting information through the Web page of NX-1
When viewing analysis results in the Web page

<When NX-1 is using the default IP address>

1. Connect NX-1 to a PC using a network cable.



2. Connect the AC adaptor to NX-1 and plug in the AC adaptor into an outlet. NX-1 starts.



TIP

- Always use the AC adaptor bundled with NX-1. Other AC adaptors may cause failures.

3. After starting the PC, set up the network settings so that the PC can access NX-1.

Note

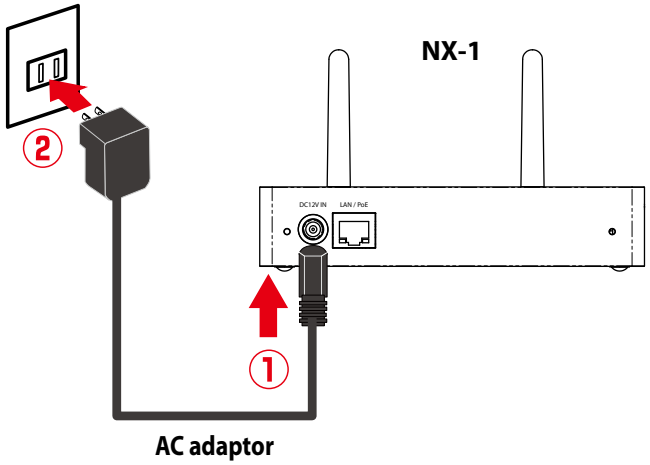
- For how to set up PC network settings, see **3-1. Setup through the Web Page of NX-1** - **Modifying PC network settings** in this manual.

<When NX-1 is using a new IP address>

Connect NX-1 to your network environment.

■ When collecting information with the Control Switch of NX-1

Connect the AC adaptor to NX-1 and plug in the AC adaptor into an outlet. NX-1 starts.



TIP

- Always use the AC adaptor bundled with NX-1. Other AC adaptors may cause failures.
- The Survey Mode and the Spectrum Analyzer mode do not support information collection by means of the Control Switch.

4-2. Using the Survey Mode

The Survey Mode scans specified channels sequentially and measures the wireless LAN environment around NX-1. The measured data are analyzed by the analysis function of NX-1 and the analysis results are displayed in chart in the Web page of NX-1.

<When to use the Survey Mode>

The Survey Mode is used for analysis of the status of currently used channels or for selection of channels to use in initial introduction.

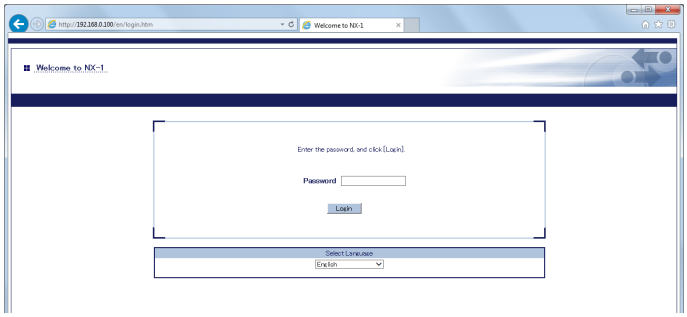
Running the Survey Mode through the Web Page

1. Start a Web browser and enter the IP address of NX-1 in the address bar.

Note

- By default, an IP address is set to NX-1 as "192.168.0.100".
- When the IP address has been changed during initial setup, enter the new IP address.

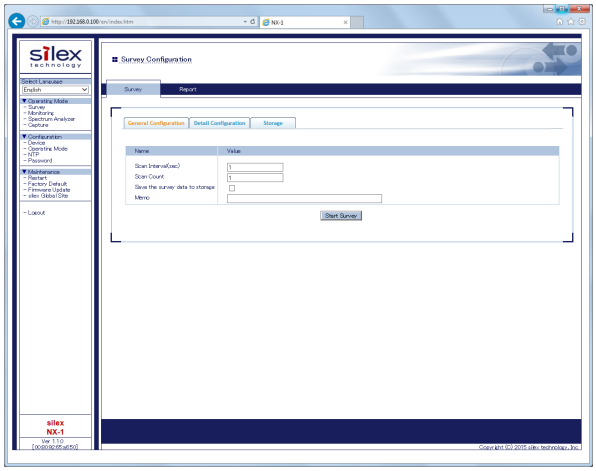
2. The login page of NX-1 is displayed.
Type the password set to NX-1 and click **Login**.



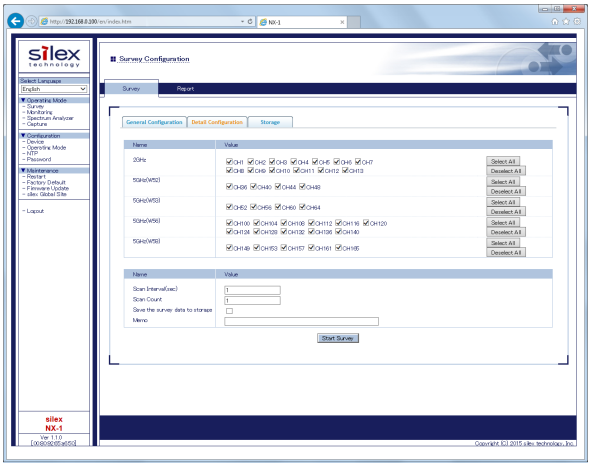
Note

- No default password is set in NX-1.
  When no changes are made in the password setting of NX-1, just click **Login**.
- You cannot log in while another user is logged in from another device.

3. The **Survey Configuration** page is displayed.
This page is composed of **General Configuration** tab, **Detail Configuration** tab and **Storage** tab. Click **General Configuration** tab or **Detail Configuration** tab.



General Configuration



Detail Configuration

■ General Configuration

Scan Interval and **Scan Count** can be changed.

■ Detail Configuration

You can select **target channels for each wireless band** as well as **Scan Interval** and **Scan Count**.

Note

- The Survey Mode settings set in **Operating Mode** of **Configuration** in the Web page are displayed as the defaults.
- After changing the settings in **General Configuration** or **Detail Configuration**, the new settings are displayed until you restart NX-1. After a restart, the defaults are displayed.

■ Storage

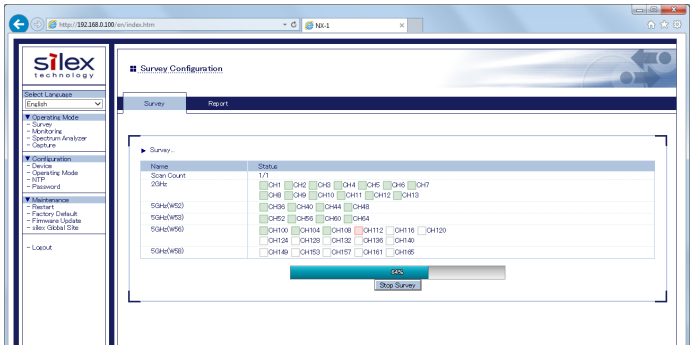
Data can be read or deleted from the storage.

4. To save the survey result to the storage, check the check box at **Save the survey data to storage**.

Note

- Up to 30 characters can be entered for **Memo**.
- Information entered to **Memo** will be displayed on data list of **Storage** tab.

5. Click **Start Survey** to start the survey.



Starting survey unchecks wireless band channels and changes the color of the check boxes with the progress of the survey displayed.

Gray : Channels that are not surveyed
White : Channels that are going to be surveyed
Red : Channels that are being surveyed
Green : Channels that have been surveyed

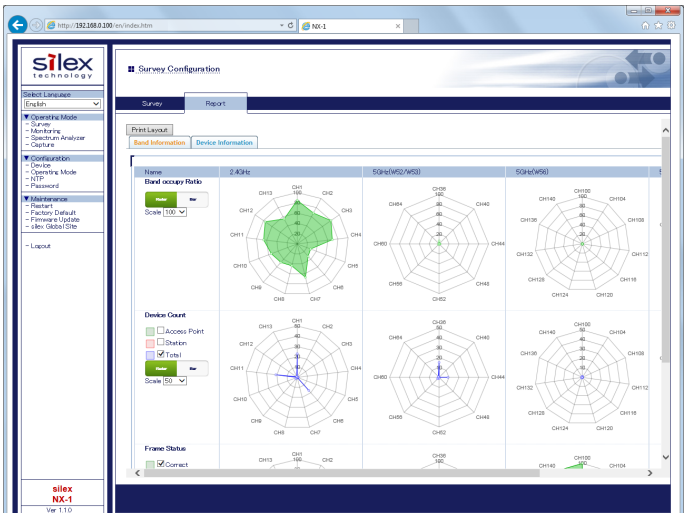
- To stop survey, click **Stop Survey** in the center of the page.

Note

TIP

- When available disk space of USB storage is 4MB or lower, a warning message is displayed and the **Start Survey** button is disabled. To deleted the measured data of NX-1, refer to **4-2. Using the Survey Mode**, **4-4. Using the Spectrum Analyzer** or **4-5. Using the Capture Mode** for how to delete the data.
- Do not unplug the USB storage when the survey is in progress. The USB storage may be damaged. When unplugging a USB storage, be sure to stop the survey process and unmount the storage beforehand. For information on how to unmount, see the explanation of the Push Switch in **2.4 Parts and Functions**.
- When survey is in progress, do not unplug the AC plug of NX-1 from an electrical outlet (when the power is supplied by PoE, do not unplug the network cable). The USB storage may be damaged.

6. Completion of survey opens a report page showing the survey results in radar charts.



TIP

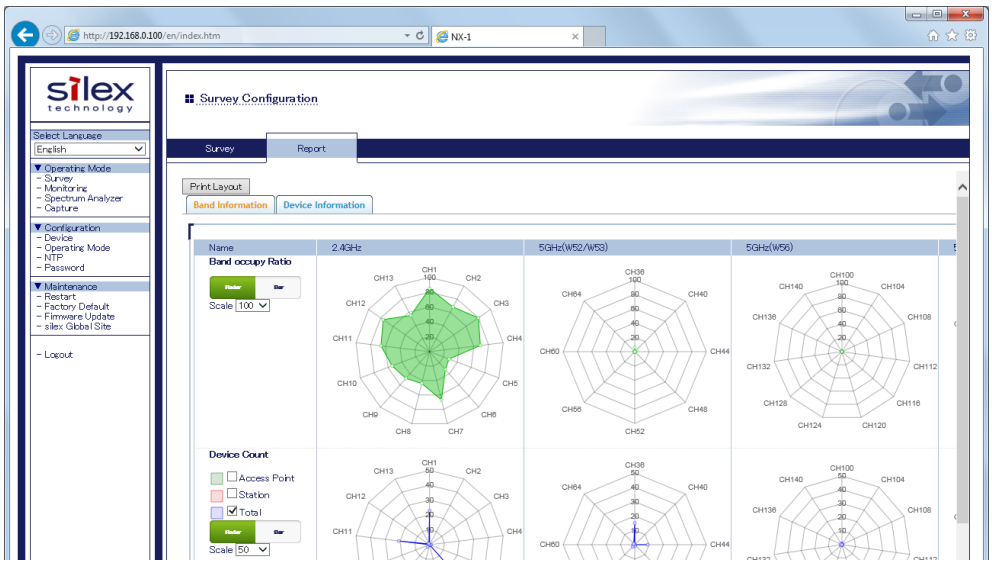
- The report page will automatically be logged out if no operations are made for a certain amount of time after it is displayed. (The default is 30 minutes)
  The auto-logout time can be changed from **Configuration** - **Device**.
  To open a report page after log-out, re-login to NX-1.

Viewing Survey Analysis Results

After completion of survey, the measurement analysis data are reported in charts in the Web page.

■ Band Information

Based on the results of survey conducted by NX-1, the following band information is displayed in radar charts or bar charts. Chart scales of both radar charts and bar charts can be adjusted.



□ Print Layout

Opens a printable format page.

□ Band Occupy Ratio

Displays band occupy ratio for specified channels.

□ Device Count

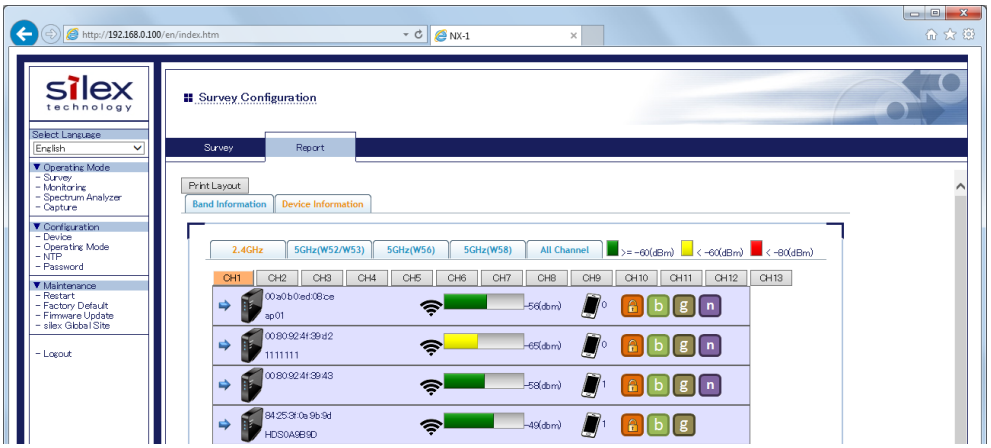
Displays the number of access points and stations that are confirmed to be in operation.

□ Frame Status

Displays received correct frames/error frames/retry frames both in percentage and in numerical values.

■ Device Information

Displays information on wireless devices that are in operation in each channel based on the survey results conducted by NX-1.



□ Print Layout

Opens a printable format page.

□ Access Point Information

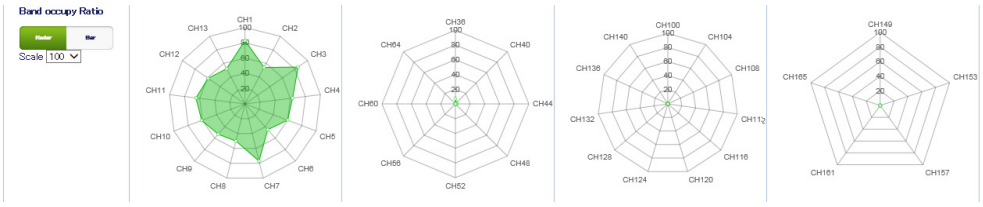
Displays information on access points in operation.

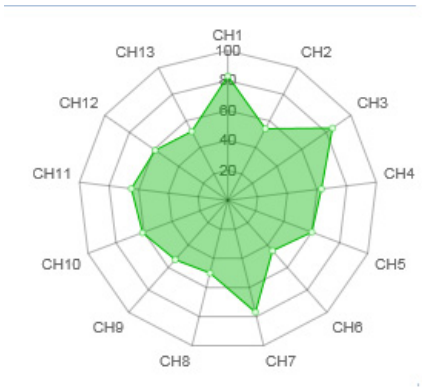
□ Station Information

Displays information on stations that have communicated with access points during survey.

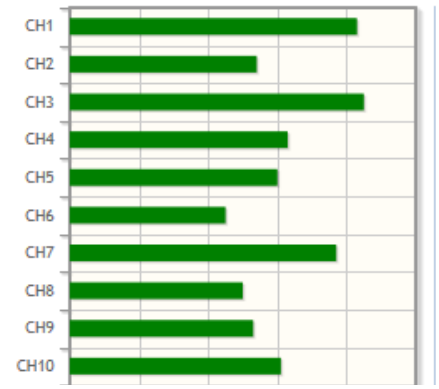
Band Information - Band Occupy Ratio

Displays wireless band occupy ratio for specified channels in percentage.





Radar chart



Bar chart

□ Band Occupy Ratio

Displays wireless band occupy ratio for specified channels in radar charts or bar charts.

□ Chart

Allows you to select how to display wireless band occupy ratio.

Radar: Displays wireless band occupy ratio in radar charts.

Bar: Displays wireless band occupy ratio in bar charts.

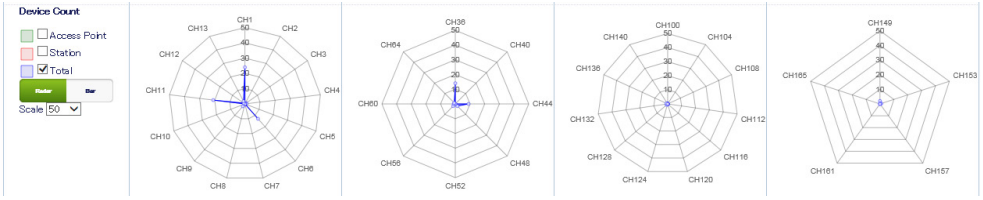
□ Scale

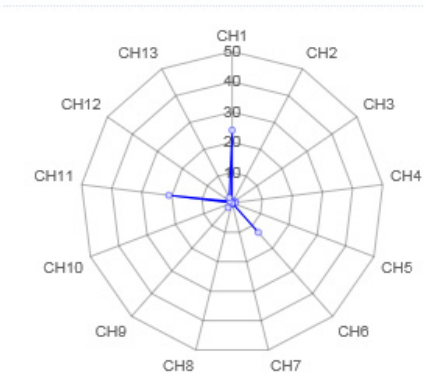
Allows you to select scales of displayed charts.

5/10/25/50/100 (Unit: %)

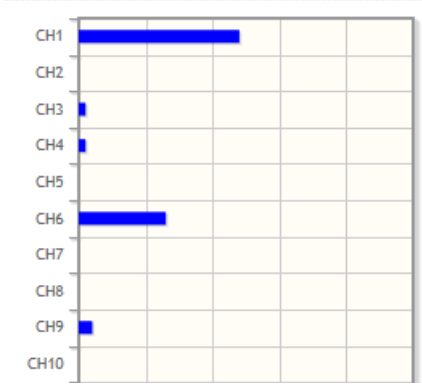
Band Information - Device Count

Displays the total number of access points and that of stations connected to the access points for specified channels.





Radar chart



Bar chart

□ Access Point

Checking this displays the total number of access points for specified channels in radar charts or bar charts.

□ Station

Checking this displays the total number of stations connected to access points for specified channels.

Note

- The number of stations is counted up when a frame sent from a station to an access point is detected during survey.
- Stations that do not communicate during survey are not detected or counted.

□ Total

Checking this displays the total number of access points and stations for specified channels.

□ Chart

Allows you to select how to display wireless band occupy ratio.

Radar : Displays the number of devices in radar charts.

Bar : Displays the number of devices in bar charts.

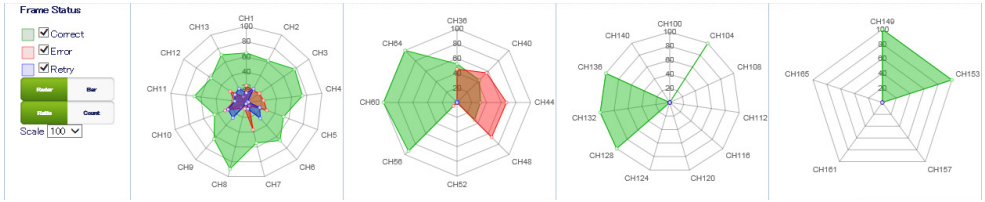
□ Scale

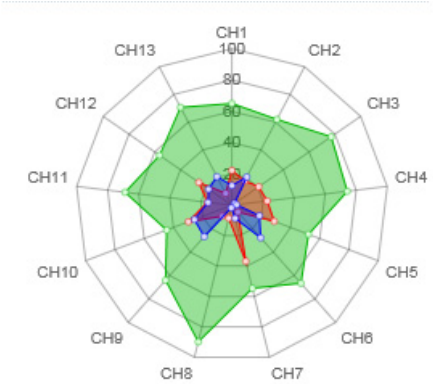
Allows you to select scales of displayed charts.

10/25/50/100/250/500 (Unit: the number of devices)

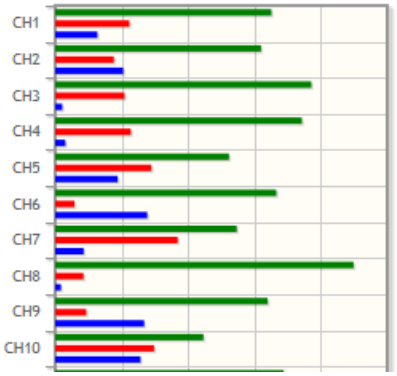
Band Information - Frame Status

Displays wireless band occupy ratio for specified channels in percentage.





Radar chart



Bar chart

□ Correct

Displays the number of received correct wireless frames in percentage or numerical values in radar charts or bar charts.

□ Error

Displays the number of received error wireless frames in percentage or numerical values in radar charts or bar charts.

□ Retry

Displays the number of received retry wireless frames in percentage or numerical values in radar charts or bar charts.

□ Chart

Allows you to select how to display the frames previously mentioned.

Radar : Displays the previously mentioned frames in radar charts.

Bar : Displays the previously mentioned frames in bar charts.

Ratio : Displays the number of received frames in percentage.

Count : Displays the number of received frames in numerical value.

□ Scale

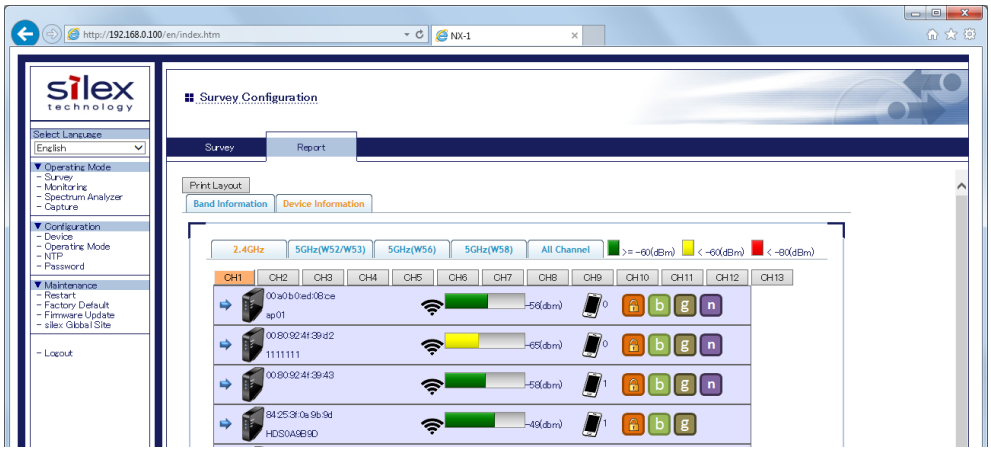
Allows you to select scales of displayed charts.

Ratio : 5/10/25/50/100

Count : 10/100/1000/10000

Survey Configuration - Device Information

Displays information on the operating access points and the operating stations for each channel.



□ Frequency bands and channels

You can select frequency bands and channels to display.

Band	Channel
2.4GHz	CH1-CH13
5GHz(W52)	CH36/CH40/CH44/CH48
5GHz(W53)	CH52/CH56/CH60/CH64
5GHz(W56)	CH100/CH104/CH108/CH112/CH116/CH120 CH124/CH128/CH132/CH136/CH140
5GHz(W58)	CH149/CH153/CH157/CH161/CH165
All Channel	All channels mentioned above

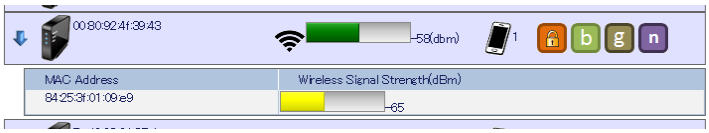
□ Access Point Information

Displays the following information on access points.

Wireless device information	Remarks
MAC Address (BSSID)	Displays a MAC address (BSSID) of an access point.
ESSID(SSID)	Displays an ESSID (SSID) of an access point.
Wireless signal strength	Displays the wireless signal strength of an access point in dbm. Green: ≥ -60 (dBm) Yellow: < -60 (dBm) Red: < -80 (dBm)
The number of connected stations	Displays the number of stations connected to the access point.
Encryption	Displays a key mark when the access point is encrypted.
Operation mode	Displays [n] when IEEE802.11n is used.

□ Station information

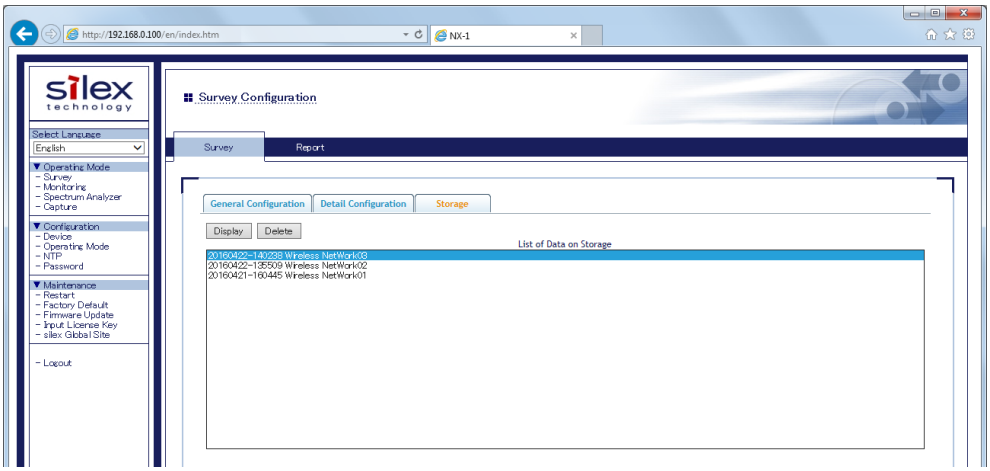
Clicking the arrow on the left when there is a connected station displays the station.



Wireless device information	Remarks
MAC Address	Displays the MAC address of the station.
Wireless signal strength	Displays the wireless signal strength of the station.

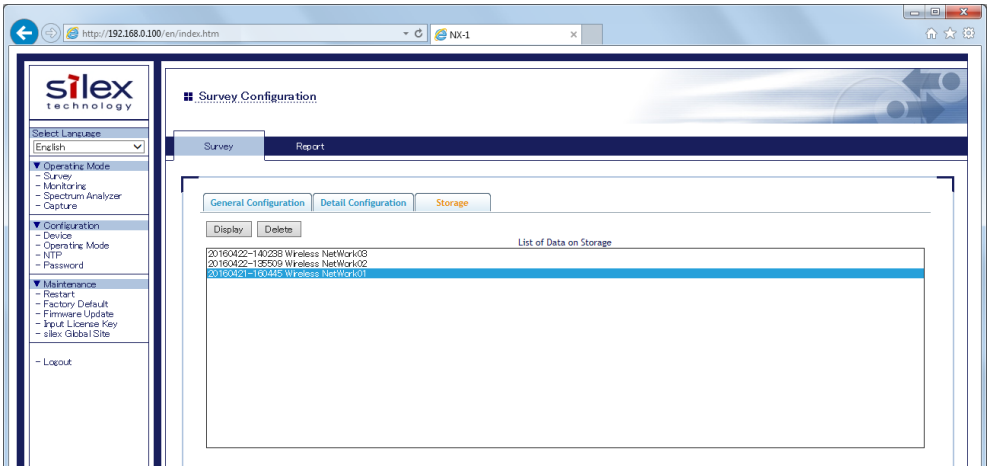
Survey Configuration - List of Data on Storage

If the **Storage** tab is clicked, the survey result is displayed that is saved in the storage.

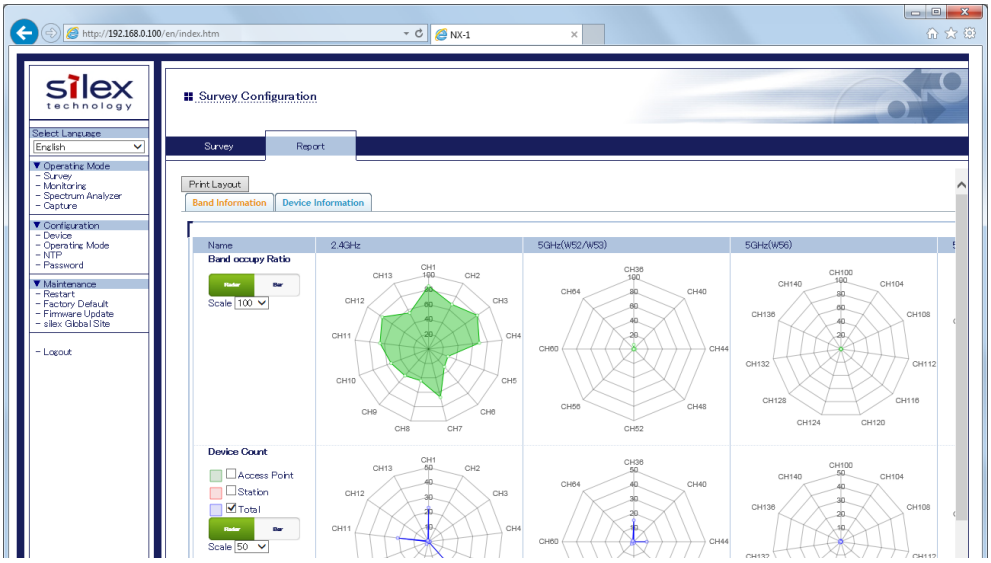


■ Reading the survey results

1. Select the data to read from a list and click **Display**.

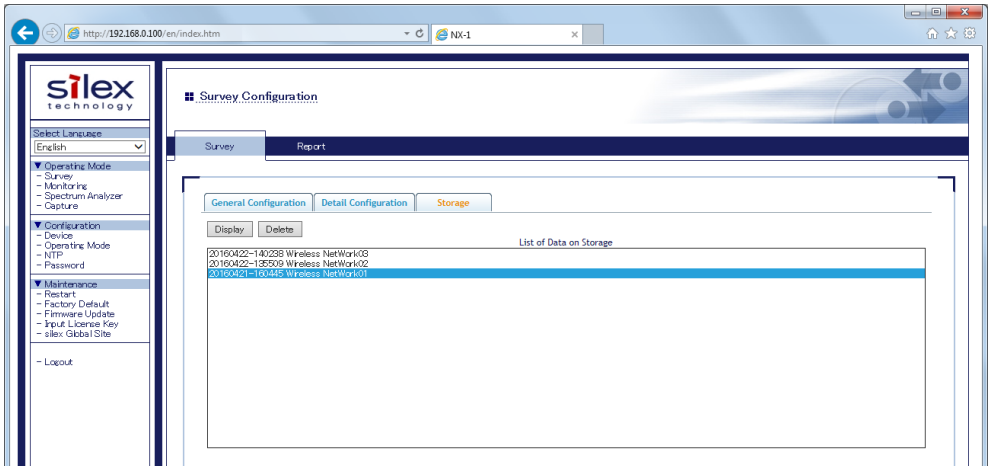


2. The selected survey result is displayed.

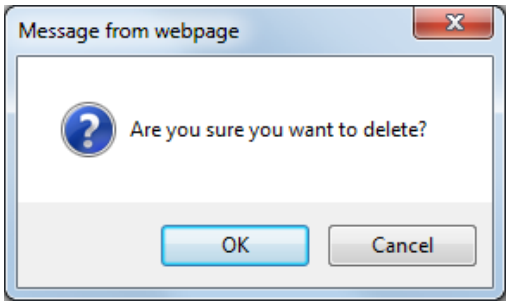


■ Deleting the survey results

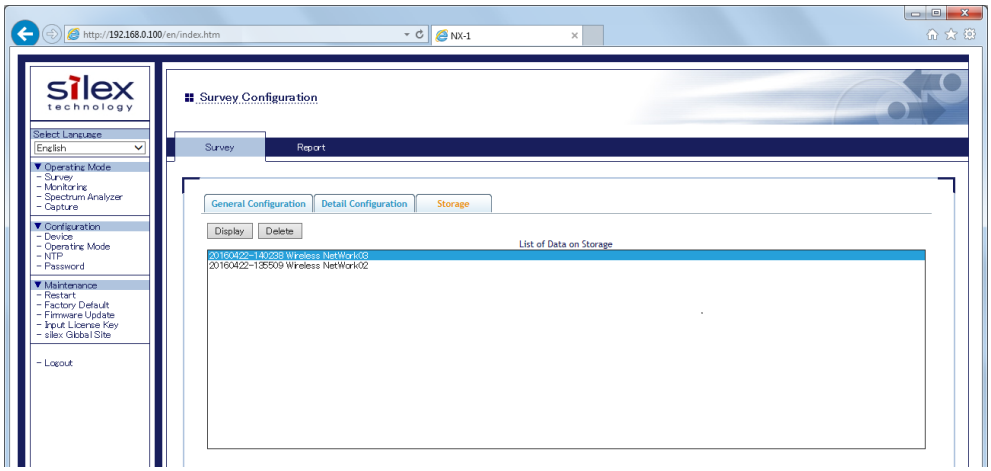
1. Select the data to delete from a list and click **Delete**.



2. Click **OK** to delete.



3. When the data is deleted, a list of data is displayed again.

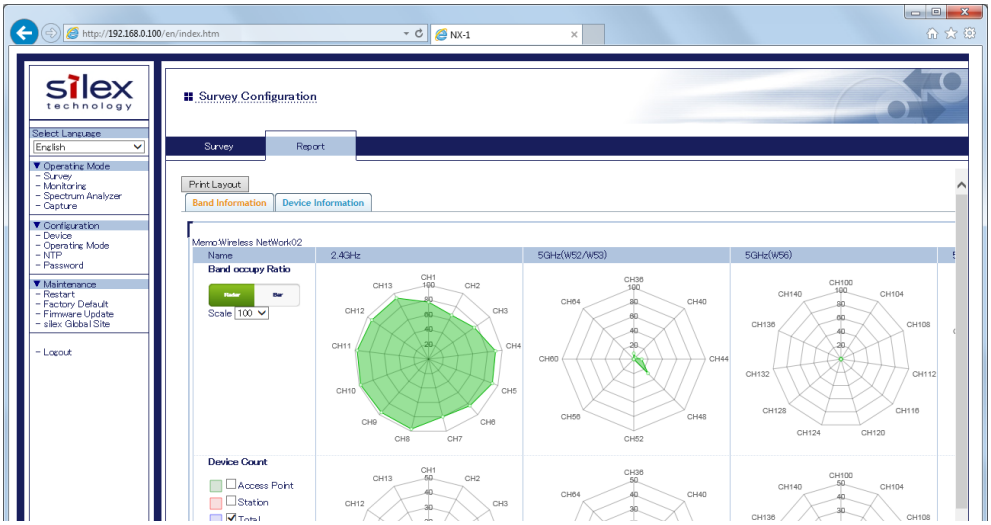


Displaying Print Layout

If the **Print Layout** button is clicked in the report page, a printable format page is displayed.

> *TIP*
> - Print quality will differ depending on the Web browser you use.

1. Click the **Print Layout** button in the report page.



2. Click the information to display in the printable format page.

■ Band Information

Shows the graphs of band information in a printable format page.

■ Device Information

Shows the device information in a printable format page.

■ All Information

Shows the band information and device information in a printable format page.

3. Printable format page is displayed.

4-3. Using the Monitoring Mode

The Monitoring Mode allows you to scan specified channels regularly and to take long term measurements of surrounding wireless environment.
Measured data are stored in a USB storage connected to NX-1. The 24-hour averages of the measurement items are displayed as statistics information in chart format in the Web page of NX-1.

<When to use the Monitoring Mode>

Use this function when monitoring statuses of currently used channels or when analyzing causes of communication troubles that occasionally occur.

Running the Monitoring Mode through the Web Page

The following explains how to perform monitoring operations using the Monitoring Configuration page of NX-1.

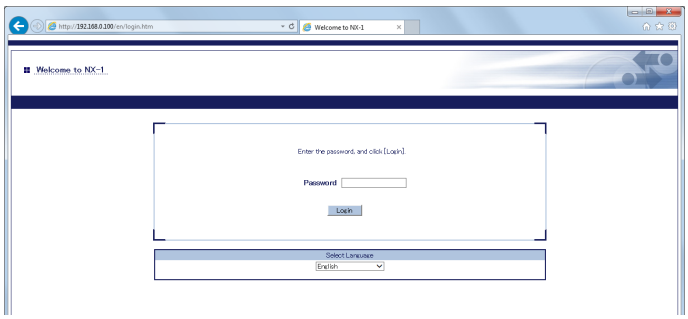
1. Plug in a USB storage into a USB port on the right side of NX-1.

2. Start a Web browser and enter the IP address of NX-1 in the address bar.

Note

- By default, an IP address is set to NX-1 as "192.168.0.100".
- When the IP address has been changed during initial setup, enter the new IP address.

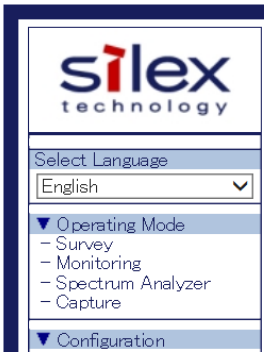
3. The login page of NX-1 is displayed.
Type the password set to NX-1 and click **Login**.



Note

- No default password is set in NX-1.
  When no changes are made in the password setting of NX-1, just click **Login**.
- You cannot log in while another user is logging in from another device.

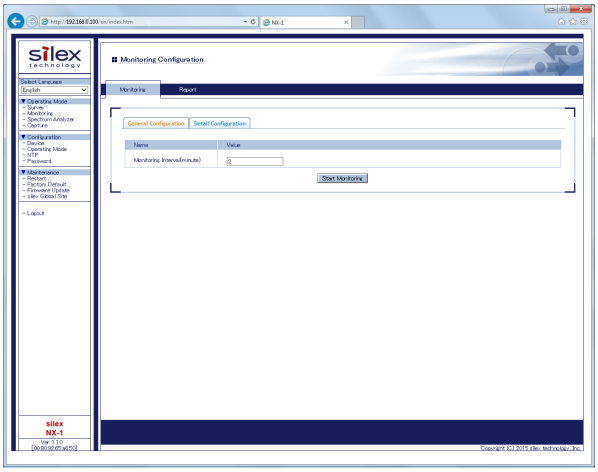
4. The Survey Configuration page is displayed.
From **Operating Mode** in the Web page menu, click **Monitoring**.



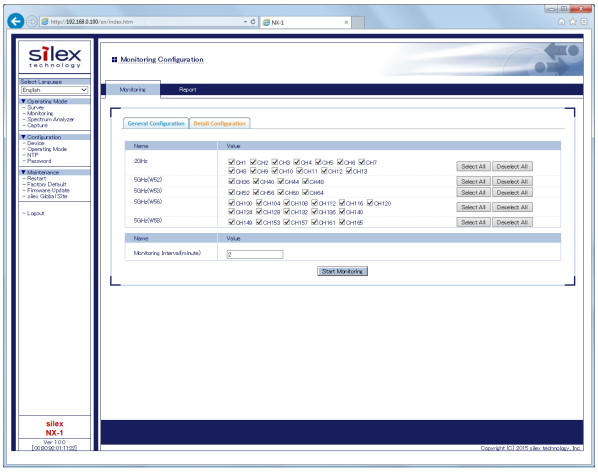
5. The Monitoring Configuration page is displayed.

The Monitoring Configuration page has the **General Configuration** tab and the **Detail Configuration** tab.

Click **Start Monitoring** in one of the tabs.



General Configuration



Detail Configuration

■ General Configuration

You can change only **Monitoring Interval**.

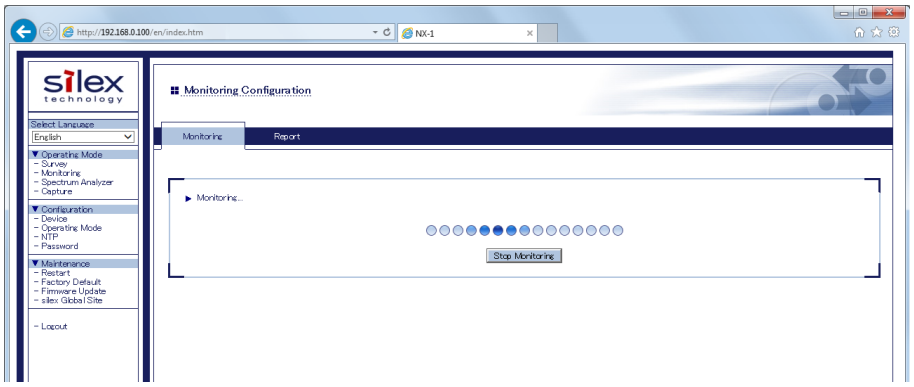
■ Detail Configuration

You can change **Radio band channels** to monitor and **Monitoring Interval**.

Note

- Monitoring settings set up in **Operating Mode** under **Configuration** in the Web page are displayed as the defaults.
- After changing the settings in **General Configuration** or **Detail Configuration**, the new settings are displayed until you restart NX-1. After a restart, the defaults are displayed.

6. Monitoring starts. To stop the monitoring operation, click **Stop Monitoring**.



Note

- Monitoring data are stored in a storage on a daily basis.
- A failure of writing data into a USB storage during monitoring operation results in an error.

TIP

- Do not unplug a USB storage during monitoring operation. The USB storage may be damaged. When unplugging a USB storage, be sure to stop monitoring operation and unmount the storage beforehand For information on how to unmount, see the explanation of the Push Switch in **2.4 Parts and Functions**.
- Do not unplug the AC adaptor of NX-1 from an outlet during monitoring operation (When the power is supplied by PoE, do not unplug the network cable.). The USB storage may be damaged.

Using the Control Switch to Run the Monitoring Mode

The following explains how to perform monitoring operations with the Control Switch on the back of NX-1.

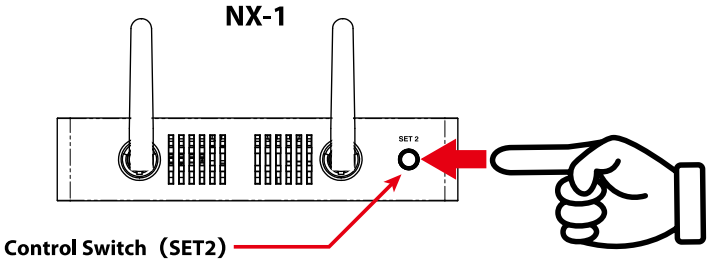
> **TIP**
> - To perform monitoring operation with the Control Switch, you need to assign **Monitoring** to the switch. From **Operating Mode** - **Push Switch Configuration** in the Web page of NX-1, you can set up the Control Switch.

■ To start monitoring operation

1. Plug in a USB storage into a USB port on the right side of NX-1.

2. Turn on NX-1.

3. Press-and-holding the Control Switch on the back of NX-1 for one second or more causes the WSTAT LED (green) and SETTING LED (green) on the top side to blink, and a monitoring operation starts.
   After confirming the start of monitoring operation, release the Control Switch.



> **Note**
> - Monitoring data are stored in a storage on a daily basis.
> - The status of the Capture Configuration page is **Monitoring** during monitoring operation.
> - A failure of writing data into a USB storage during monitoring operation results in an error.

> **TIP**
> - Do not unplug a USB storage during monitoring operation. The USB storage may be damaged. When unplugging a USB storage, be sure to stop monitoring operation and unmount the storage beforehand For information on how to unmount, see the explanation of the Push Switch in **2.4 Parts and Functions**.
> - Do not unplug the AC adaptor of NX-1 from an outlet during monitoring operation (When the power is supplied by PoE, do not unplug the network cable.). The USB storage may be damaged.

To stop monitoring operation

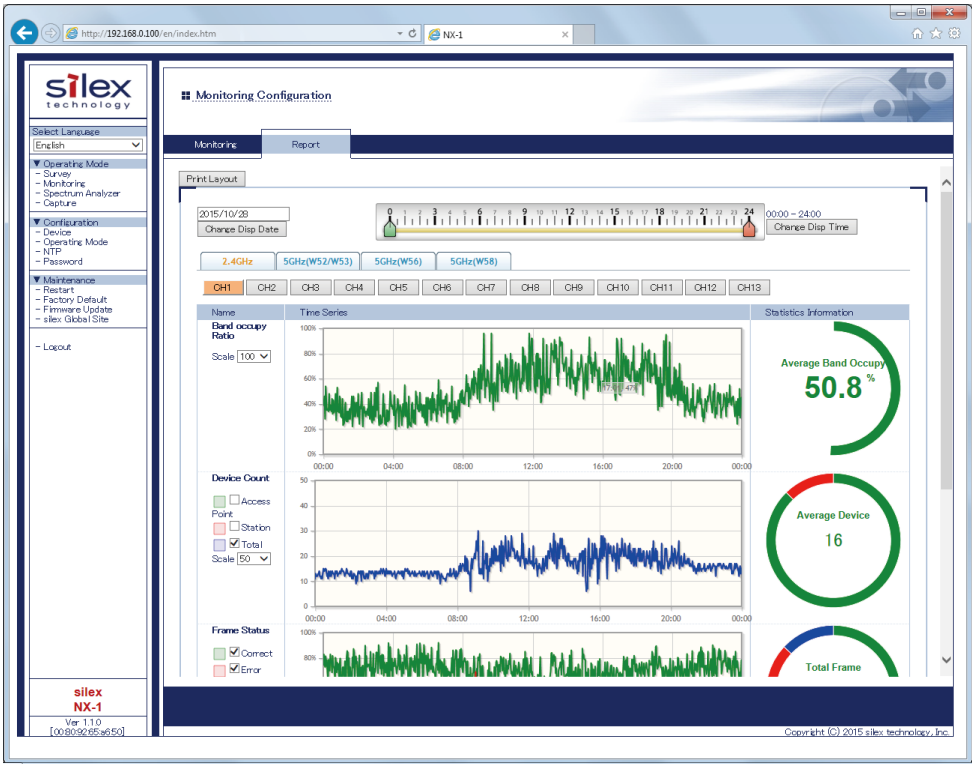
Press-and-holding the Control Switch on the back of NX-1 for one second or more turns off the WSTATLED (green) and SETTING LED (green) on the top side, and the monitoring operation stops.
After confirming the stop of monitoring operation, release the Control Switch.

Note

- You can also stop monitoring as follows: Log in the Web page of NX-1. From **Operating Mode**, choose **Monitoring**. In Monitoring Configuration, click **Stop Monitoring**.

Viewing Monitoring Results

After completion of the Monitoring Mode, the monitoring results are analyzed and the report of the data is displayed in chart format in the Web page.



□ Print Layout

Opens a printable format page.

□ Bands and Channels

Allows you to select bands and channels to display.

Band	Channel
2.4GHz	CH1-CH13
5GHz(W52)	CH36/CH40/CH44/CH48
5GHz(W53)	CH52/CH56/CH60/CH64
5GHz(W56)	CH100/CH104/CH108/CH112/CH116/CH120 CH124/CH128/CH132/CH136/CH140
5GHZ(W58)	CH149/CH153/CH157/CH161/CH165
All Channel	All channels mentioned above

□ Band Occupy Ratio

Shows the usage rate of a specified wireless band on a daily basis.
The vertical axis is the usage rate and the horizontal axis is time.

□ Device Count

Shows the number of access points communicating in a specified wireless band and the number of connected stations on a daily basis.

□ Frame Status

Shows correct frames, error frames, and retry frames contained in received frames of a specified band in percentage or numerical value on a daily basis.

□ Frame Type

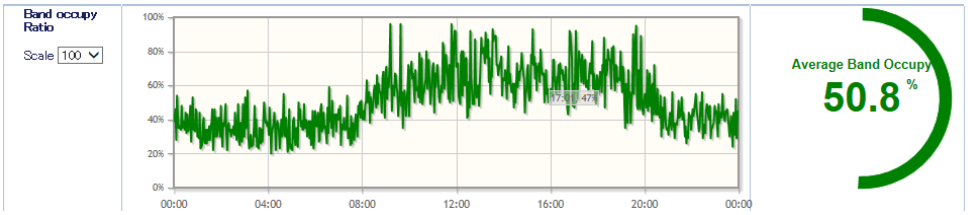
Shows management frames, control frames, and data frames contained in received correct frames of a specified band in percentage or numerical value on a daily basis.

TIP

- The report page will automatically be logged out if no operations are made for a certain amount of time after it is displayed. (The default is 30 minutes)
  The auto-logout time can be changed from **Configuration** - **Device**.
  To open a report page after log-out, re-login to NX-1.

Monitoring Configuration - Band Occupy Ratio

After completion of the Monitoring Mode, the monitoring results are analyzed and the usage rate of a wireless band is displayed in percentage in chart format in the Web page.



□ Wireless Band

Displays the usage rate of wireless band in percentage in chronological order.

□ Average Band Occupy

Displays the average band occupy ratio calculated from the monitoring results.

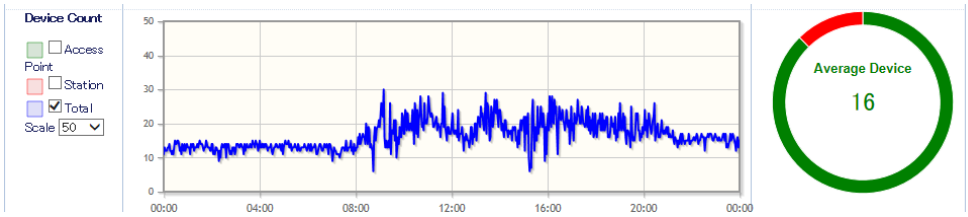
□ Scale

Allows you to select scales of displayed charts.

10/25/50/100 (Unit: %)

Monitoring Configuration - Device Count

After completion of the Monitoring Mode, the monitoring results are analyzed and the total number of access points and that of stations are displayed in chart format in the Web page.



☐ Access Point

Checking this displays the total number of access points in green in chronological order.

☐ Station

Checking this displays the total number of stations connected to access points in red in chronological order.

Note

- The number of stations is counted up when a frame sent from a station to an access point is detected during survey.
- Stations that do not communicate during survey are not detected or counted.

☐ Total

Checking this displays the total number of access points and stations in blue in chronological order.

☐ Average Device

Displays the average number of devices in operation.

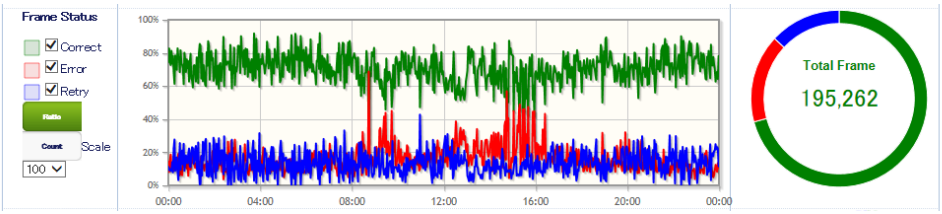
☐ Scale

Allows you to change the chart scale.

10/25/50/100/250/500 (Unit: the number of devices)

Monitoring Configuration - Frame Status

After completion of the Monitoring Mode, the monitoring results are analyzed and correct frames, error frames, and retry frames are displayed in percentage and numerical value in chart format in the Web page.



□ Correct

Checking this displays correct frames (frames with no error) of received frames in percentage or numerical value in green in chronological order.

□ Error

Checking this displays error frames of received frames in percentage or numerical value in green in chronological order.

□ Retry

Checking this displays retry frames of received frames in percentage or numerical value in green in chronological order.

□ Total Frame

Displays the total number of frames received during monitoring operation.

□ Chart

Allows you to select how to display the frames previously mentioned.

Ratio : Displays the number of received frames in percentage.

Count : Displays the number of received frames in numerical value.

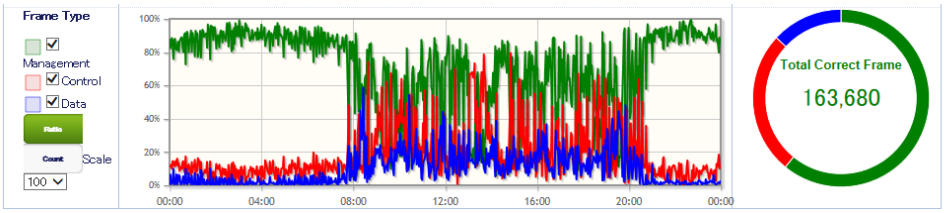
□ Scale

Allows you to change the chart scale.

- Ratio : 10/25/50/100 (Unit: %)
- Count : 10/100/1000/10000

Monitoring Configuration - Frame Type

After completion of the Monitoring Mode, the monitoring results are analyzed and management frames, control frames, and data frames are displayed in percentage and numerical value in chart format in the Web page.



□ Management

Displays management frames contained in received correct frames in percentage or numerical value in green.

□ Control

Displays control frames contained in received correct frames in percentage or numerical value in red.

□ Data

Displays control frames contained in received correct frames in percentage or numerical value in blue.

□ Total Correct Frame

Displays the total number of correct frames received during monitoring operation.

□ Chart

Allows you to select how to display the frames previously mentioned.

Ratio : Displays the number of received frames in percentage.

Count : Displays the number of received frames in numerical value.

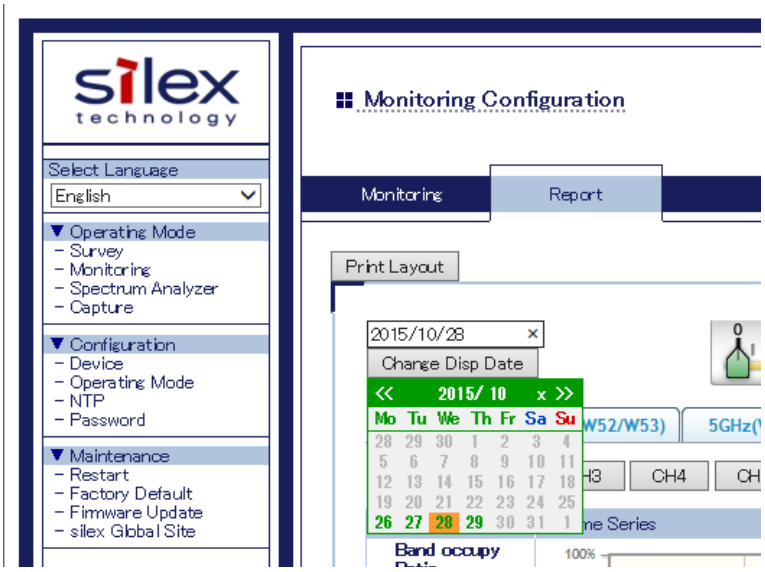
□ Scale

Allows you to change the chart scale.

- Ratio : 10/25/50/100 (Unit: %)
- Count : 10/100/1000/10000

Changing Display Date

You can select obtained monitoring data to display.



1. Putting the cursor in the date entry field in the upper left of the window followed by clicking there opens a calendar.
Dates of the calendar that have their corresponding monitoring data are displayed in green boldface.

2. Select a date to display.

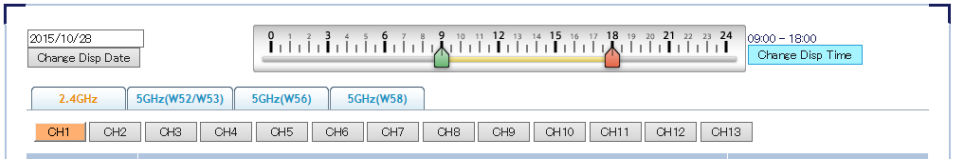
3. Click **Change Disp Date**.
The report of the result for the selected date is displayed.

Changing Display Time

You can rescale the charts.

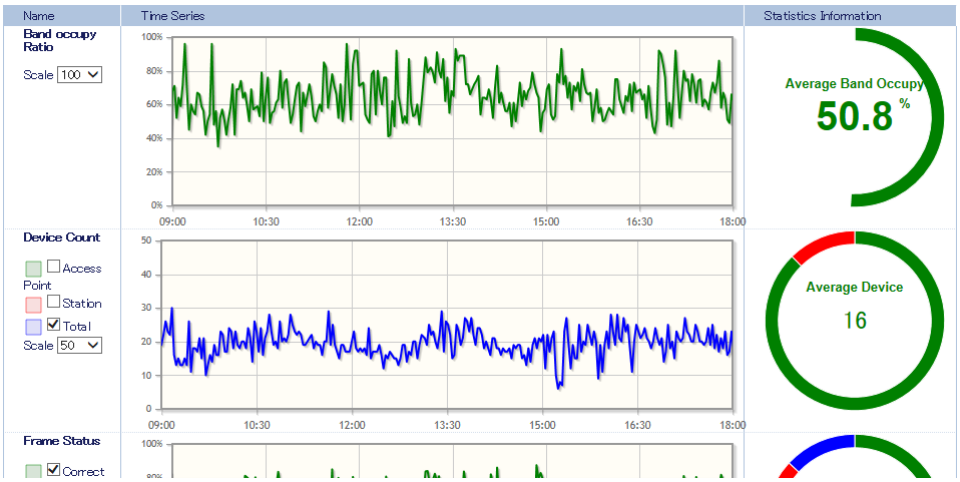
■ To rescale the charts with the slider displayed on the top of the tab.

1. Put the cursor at the start point (green) on the left and/or at the end point (orange) on the right of the slider, then slide them and specify the time to display.



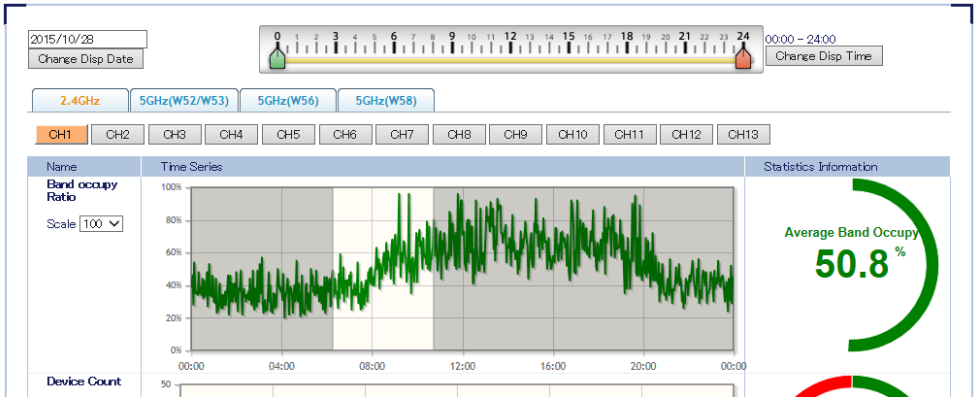
2. Click **Change Disp Time**.

3. All charts are rescaled according to the specified time.

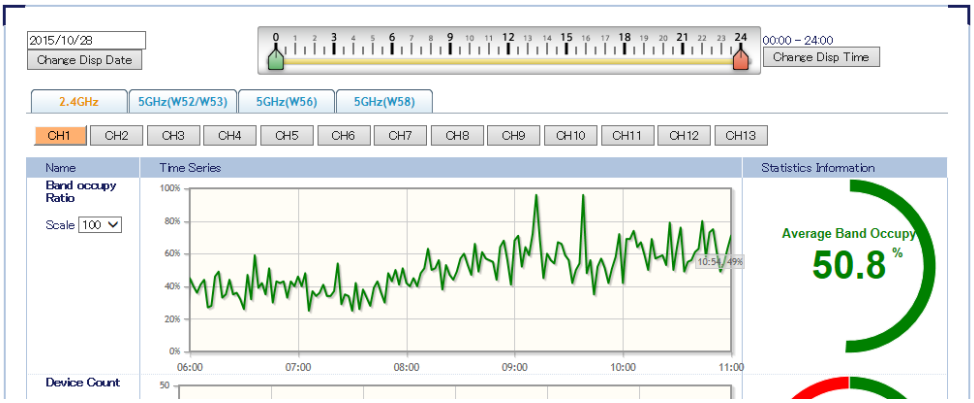


■ To rescale the charts by using the mouse cursor in charts

1. In a chart to rescale, put the mouse cursor at a point of the display start time, then click and drag the cursor to the right. When reaching the display end time, release the cursor.



2. The chart you adjusted is rescaled according to the specified time.

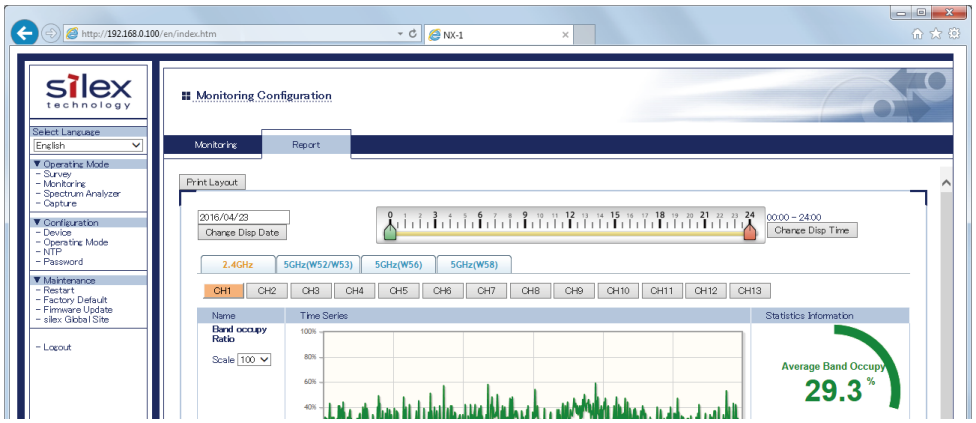


Displaying Print Layout

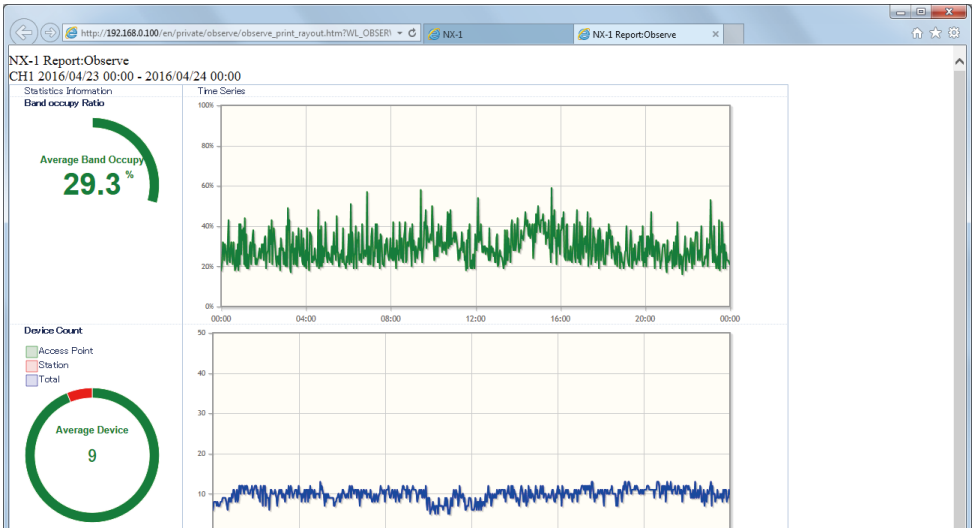
If the **Print Layout** button is clicked on the report page, the printable format page is displayed.

> *TIP*
> - Print quality will differ depending on the Web browser you use.

1. Click the **Print Layout** button in the report page.



2. Printable format page is displayed.



4-4. Using the Spectrum Analyzer

The Spectrum Analyzer mode measures wireless signal conditions of specified frequency bands.
Measured data are stored in a USB storage connected to NX-1. The spectrogram and spectral density of the data are displayed in chart format in the Web page of NX-1.

<When to use the Spectrum Analyzer>

Use this function when monitoring statuses of currently used channels or when analyzing causes of communication troubles that occasionally occur.

Running the Spectrum Analyzer through the Web Page

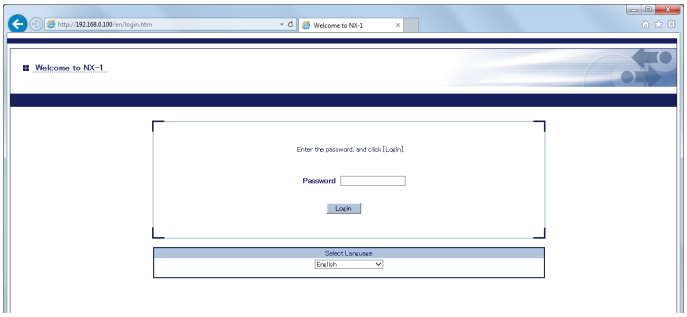
1. Plug in a USB storage into a USB port on the right side of NX-1.

2. Start a Web browser and enter the IP address of NX-1 in the address bar.

Note

- By default, an IP address is set to NX-1 as "192.168.0.100".
- When the IP address has been changed during initial setup, enter the new IP address.

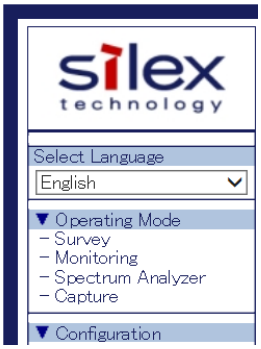
3. The login page of NX-1 is displayed.
Type the password set to NX-1 and click **Login**.



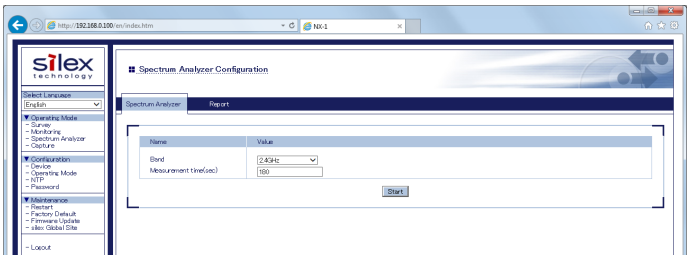
Note

- No default password is set in NX-1.
  When no changes are made in the password setting of NX-1, just click **Login**.
- You cannot log in while another user is logged in from another device.

4. The Survey Configuration page is displayed.
From **Operating Mode** in the Web page menu, click **Spectrum Analyzer**.



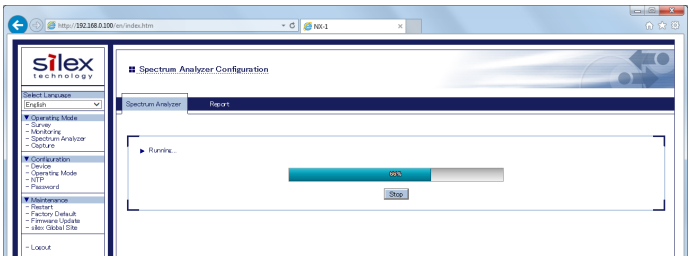
5. The Spectrum Analyzer Configuration page is displayed.
Set up measurement settings, then click **Start**.



Note

- The Spectrum Analyzer settings set in **Operating Mode** under **Configuration** of the Web page are displayed as the defaults.
- After changing the settings, the new settings are displayed until you restart NX-1. After a restart, the defaults are displayed.

6 The Spectrum Analyzer starts.



TIP

- Do not unplug a USB storage when the Spectrum Analyzer is in operation. The USB storage may be damaged. When unplugging a USB storage, be sure to stop the Spectrum Analyzer and unmount the storage beforehand. For information on how to unmount, see the explanation of the Push Switch in **2.4 Parts and Functions**.
- Do not unplug the AC adaptor of NX-1 from an outlet when the Spectrum Analyzer is in operation (When the power is supplied by PoE, do not unplug the network cable). The USB storage may be damaged.

7. Completion of a Spectrum Analyzer operation opens a report page showing the measurement results.

TIP

- The report page will automatically be logged out if no operations are made for a certain amount of time after it is displayed. (The default is 30 minutes)
  The auto-logout time can be changed from **Configuration** - **Device**.
  To open a report page after log-out, re-login to NX-1.

Viewing Measurement Results

The spectrogram and spectral density of measured data are displayed in the Web page.

□ Print Layout

Opens a printable format page.

□ Frequency Bands

Allows you to select frequency bands to display from 2.4GHz, 5GHz (W52/W53), 5GHz (W56), or 5GHz (W58).

□ Spectrogram

Displays frequency, time, and signal strength on x, y, and z axis respectively in a three-dimensional chart.

□ Spectral Density

Displays frequency, signal strength, and z (appearance ratio) on x, y, and z axis respectively in a three-dimensional chart.

□ File Name

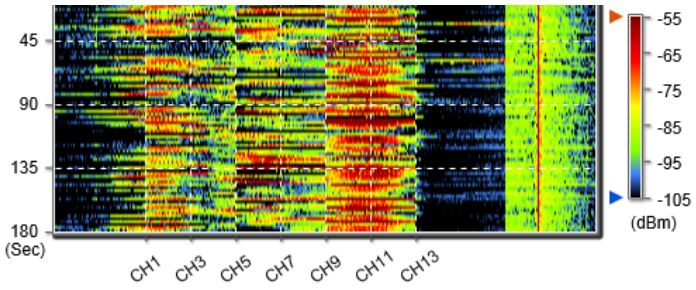
Displays the names of stored data files.

□ Delete button

Deletes the stored data.

Spectrum Analyzer - Spectrogram

Wireless signal conditions of each frequency band during measurement time are displayed in a three-dimensional chart.



□ Spectrogram

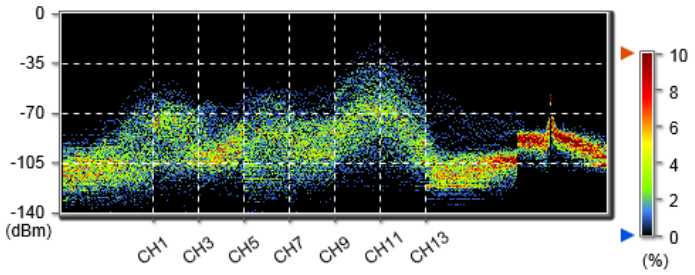
After measurement, displays frequency, time, and signal strength on x, y, and z axis respectively in a three-dimensional chart.

Using the sidebar on the right allows you to narrow the range of signal strength to display.

The past report can be displayed by clicking one from the drop-down list.

Spectrum Analyzer - Spectral Density

Signal strength densities of each frequency band detected during measurement are displayed in percentage.



□ Spectral Density

After measurement, displays x (frequency), y (signal strength), and z (density, or appearance ratio) in a three-dimensional chart.

Using the sidebar on the right allows you to narrow the range of signal strength density to display.

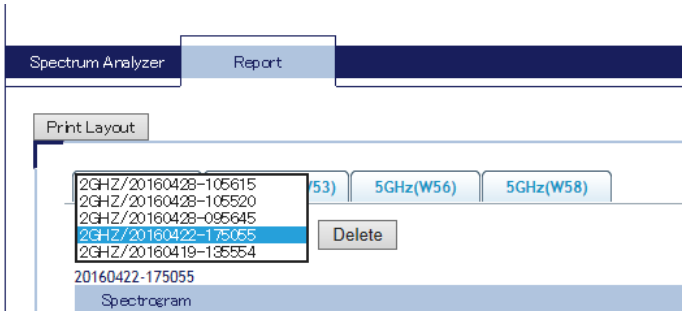
The past report can be displayed by clicking one from the drop-down list.

Deleting Measured Data

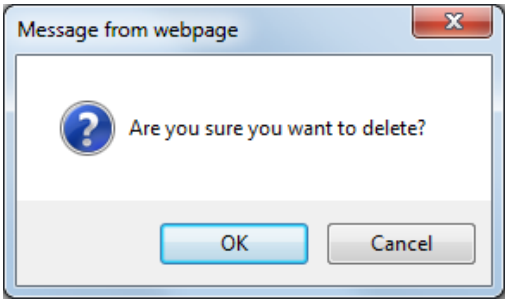
The measured data of USB storage can be deleted on the report page.

1. Go to the **Report** page of Spectrum Analyzer.

2. Select the data to delete from the drop-down list and click **Delete**.



3. Click **OK** to delete.



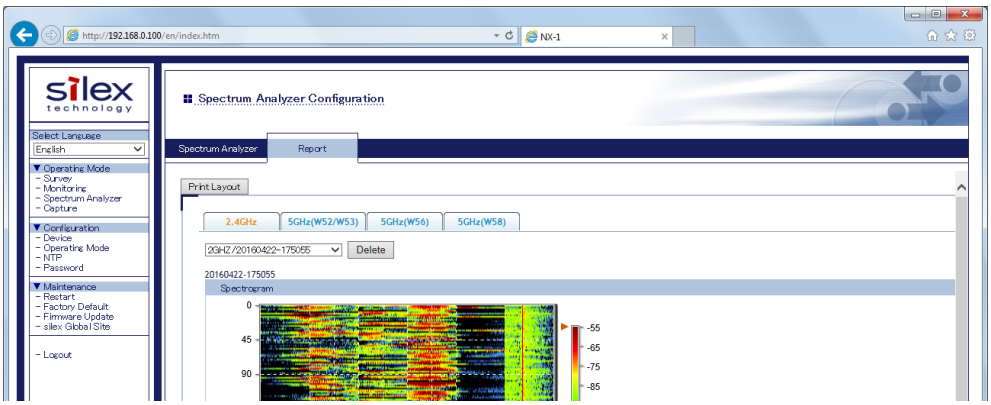
4. When the data is deleted, the **Report** page is displayed again.

Displaying Print Layout

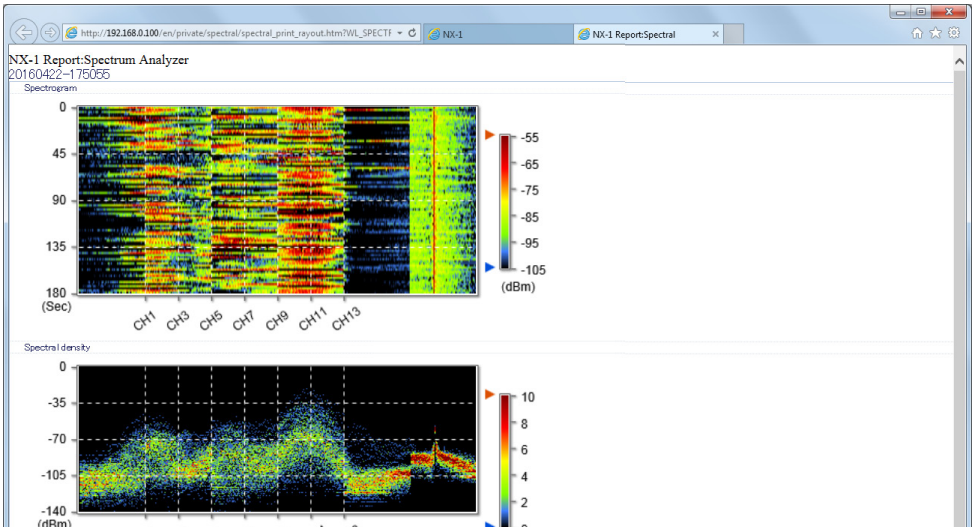
If the **Print Layout** button is clicked on the report page, the printable format page is displayed.

> ***TIP***
>
> - Print quality will differ depending on the Web browser you use.

1. Click the **Print Layout** button in the report page.



2. Printable format page is displayed.



4-5. Using the Capture Mode

The Capture Mode allows you to capture wireless LAN frames of specified channels. Captured data are saved in PCAP files and stored in a USB storage connected to NX-1.

<When to use the Capture Mode>

When a communication trouble occurs in wireless LAN environment, this mode allows you to capture wireless frames and analyze them for errors, helping you to troubleshoot. Analyzing wireless frames requires you to have a technical knowledge of wireless LAN.

Running the Capture Mode through the Web Page

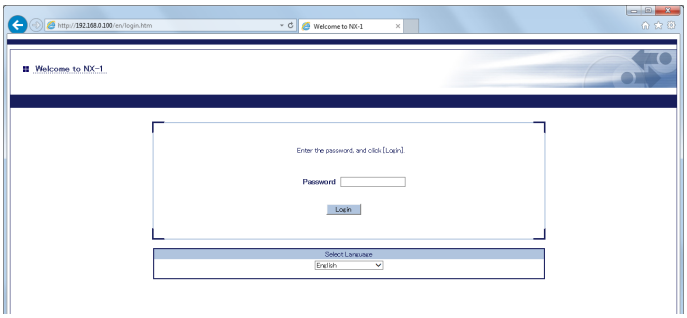
1. Plug in a USB storage into a USB port on the right side of NX-1.

2. Start a Web browser and enter the IP address of NX-1 in the address bar.

Note

- By default, an IP address is set to NX-1 as "192.168.0.100".
- When the IP address has been changed during initial setup, enter the new IP address.

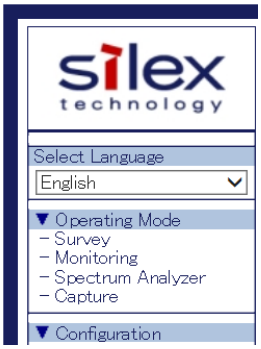
3. The login page of NX-1 is displayed.
Type the password set to NX-1 and click **Login**.



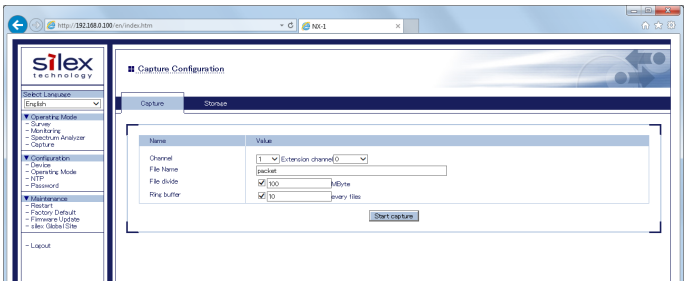
Note

- No default password is set in NX-1.
  When no changes are made in the password setting of NX-1, just click **Login**.
- You cannot log in while another user is logged in from another device.

4. The Survey Configuration page is displayed.
From **Operating Mode** in the Web page menu, click **Capture**.



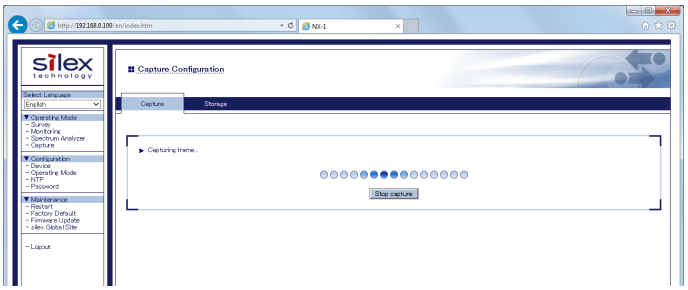
5. The Capture Configuration page is displayed.
Set up capture settings, then click **Start capture**.



Note

- Capture settings set in **Operating Mode** of **Configuration** in the Web page are displayed as the defaults.
- After changing the settings, the new settings are displayed until you restart NX-1. After a restart, the defaults are displayed.

6. Capture starts.
To stop the capture, click **Stop capture**.



Note

- A failure of writing data into a USB storage during capture results in an error.

TIP

- Do not unplug a USB storage during capture. The USB storage may be damaged. When unplugging a USB storage, be sure to stop capture and unmount the storage beforehand For information on how to unmount, see the explanation of the Push Switch in **2.4 Parts and Functions**.
- Do not unplug the AC adaptor of NX-1 from an outlet during capture (When the power is supplied by PoE, do not unplug the network cable). The USB storage may be damaged.

Using the Control Switch to Run the Capture Mode

The Control Switch on the back of NX-1 allows you to start or stop capture.

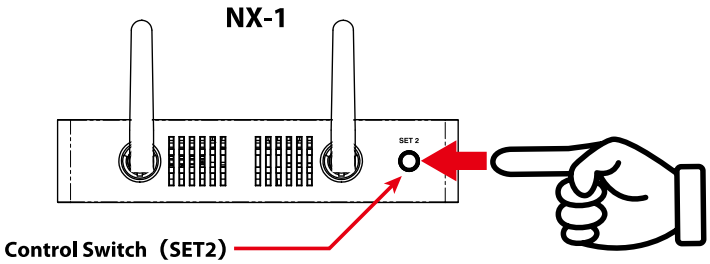
> **TIP**
> - To perform capture operation with the Control Switch, you need to assign **Capture** to the switch. From **Operating Mode** - **Push Switch Configuration** in the Web page of NX-1, you can set up the Control Switch.

■ To start capture

1. Plug in a USB storage into a USB port on the right side of NX-1.

2. Turn on NX-1.

3. Press-and-holding the Control Switch (SET2) on the back of NX-1 for one second or more causes the WSTAT LED (green) and SETTING LED (red) on the top side to blink, and a capture operation starts.
   After confirming the start of capture, release the Control Switch.



> **Note**
> - The status of the Capture Configuration page is **Capturing frame** during capture operation.
> - A failure of writing data into a USB storage during capture results in an error.

> **TIP**
> - Do not unplug a USB storage during capture. The USB storage may be damaged. When unplugging a USB storage, be sure to stop capture and unmount the storage beforehand for information on how to unmount, see the explanation of the Push Switch in **2.4 Parts and Functions**.
> - Do not unplug the AC adaptor of NX-1 from an outlet during capture (When the power is supplied by PoE, do not unplug the network cable). The USB storage may be damaged.

■ To stop capture

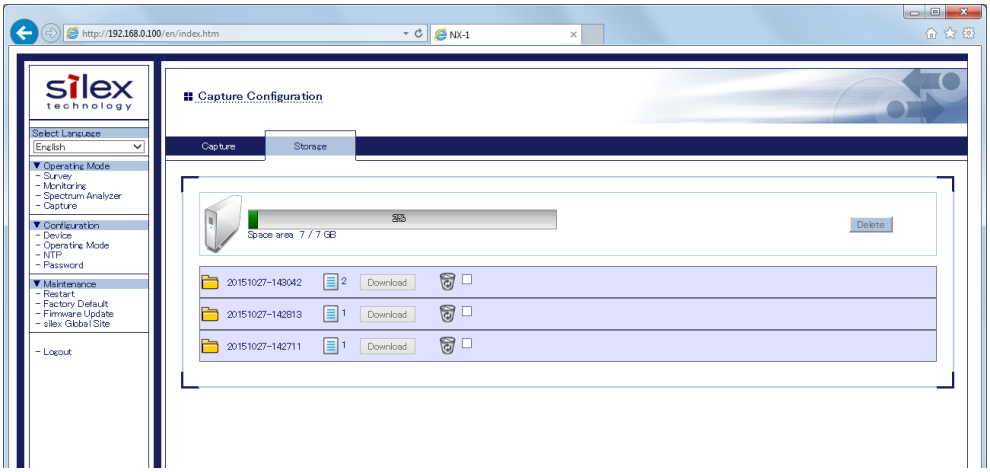
Press-and-holding the Control Switch (SET2) on the back of NX-1 for one second or more turns off the WSTAT LED (green) and SETTING LED (red) on the top side, and the capture operation stops.
After confirming the stop of capture, release the Control Switch.

Note

- You can also stop capture as follows: Log in the Web page of NX-1. From **Operating Mode**, choose **Capture**. In Capture Configuration, click **Stop capture**.

Viewing Captured Data

You can view captured data in the Storage tab of Capture Configuration.



Item	Remarks
Free space in storage	Shows the free space in a USB storage connected to NX-1.
Directory name	Shows the names of directories created in a USB storage connected to NX-1. Directories are named after their captured date and time. <Directory name> YYYYMMDD-hhddss (Y: year, M: month, D: day, h: hour, d: minute, s: second) Example) For the capture started at 14:40:10 on 4/1/2015, the directory is named 20150401-144010. * Date and time are obtained from NX-1. Running capture operation through the Web page overwrites the date and time of NX-1 with those of Web browsers, and names directories after the data.

Item	Remarks
The number of files in directory	Shows the number of captured data stored in a directory.
All data download (Download)	Downloads all captured data stored in a directory. * Supported only for Google Chrome.
Delete	Deletes all captured data stored in a directory.
File Name	Shows file names of captured data stored in a directory. File names are determined based on the settings of the Capture Configuration page as follows: - When the File Divide/Ring Buffer is enabled <Specified file name><Serial number> The serial number starts from 0. - When the File Divide is enabled and the Ring Buffer is disabled The first file: <Specified file name> The second file or later: <Specified file name><Serial number> The serial number starts from 1.
Date	Shows the date and time when captured data are created.
Size	Shows file size of captured data stored in a directory in Kbyte.

TIP

- The report page will automatically be logged out if no operations are made for a certain amount of time after it is displayed. (The default is 30 minutes)
  The auto-logout time can be changed from **Configuration** - **Device**.
  To open a report page after log-out, re-login to NX-1.

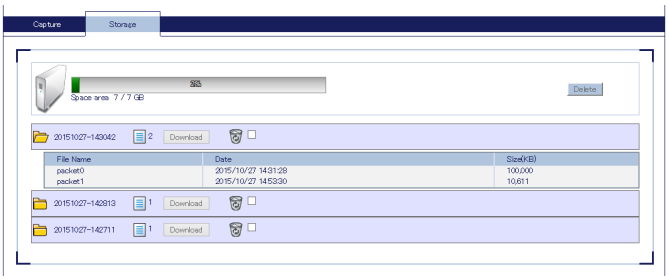
Downloading Captured Data

You can download a file from a directory created in a USB storage by clicking the file name. It is also possible to download all files in a directory by clicking **Download**. (Supported only for Google Chrome)
You can view downloaded files by using network analyzer software (Wireshark, etc.).

■ To download a single file

1. Open the Storage tab in Capture Configuration.

2. Click a directory and display stored files.



3. Clicking a file to download opens the file download pop-up. Click **Save**.

4. File download starts.
When the download is complete, a pop-up notification appears.

■ To download all files (Supported only for Google Chrome)

1. Open the Storage tab in Capture Configuration.

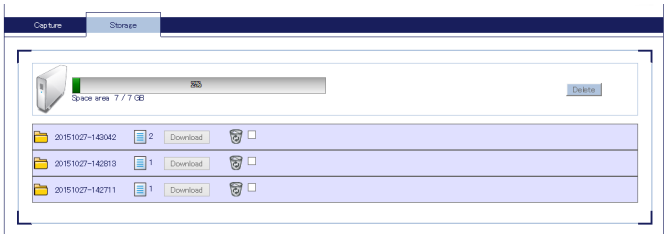
2. Click **Download** for a directory to download.

Deleting Captured Data

Captured data stored in a USB storage can be deleted on a directory basis.

1. Open the Storage tab in Capture Configuration.

2. Check the check box on the right of a target directory, then click **Delete** in the upper right of the tab.



3. Deletion of the directory starts.

4. When the deletion is complete, the Storage tab is displayed.

5. Other Features

This chapter explains the other features of NX-1.

5-1. Maintenance Feature

Restarting

■ To restart NX-1 by unplugging the AC adaptor

1. Unplug the AC adaptor of NX-1 from the outlet.

Note - When receiving power over the Ethernet (PoE), unplug the network cable.

2. Plug in the AC adaptor of NX-1 into an outlet.

Note - When receiving power over the Ethernet (PoE), plug in the network cable.

3. The Power LED starts blinking in orange. When the LED turns green, the restart is completed.

■ To restart NX-1 through the Web page

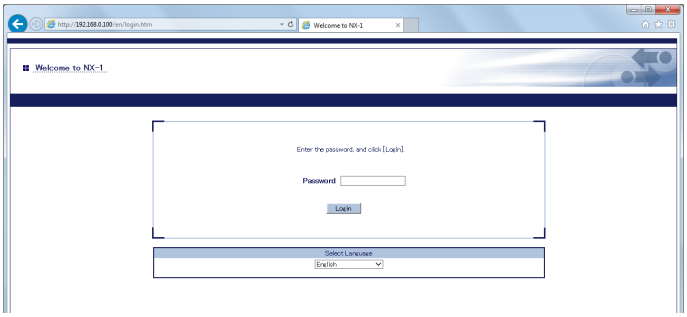
The following explains how to restart NX-1 through the Restart page.

1. Start a web browser and enter the IP address of NX-1 in the address bar.

Note

- By default, an IP address is set to NX-1 as "192.168.0.100".
- When the IP address has been changed during initial setup, enter the new IP address.

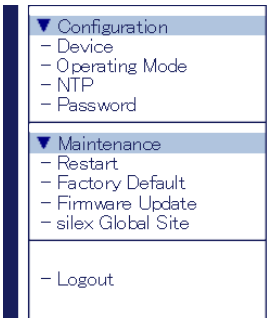
2. The login page of NX-1 is displayed.
Type the password set to NX-1 and click **Login**.



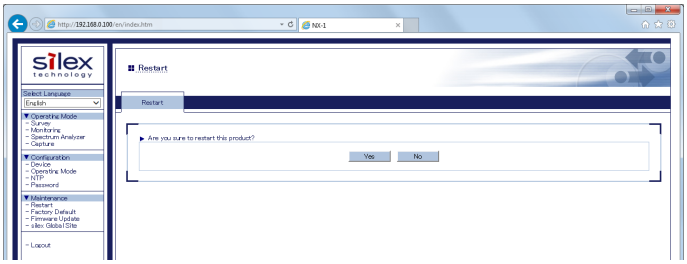
Note

- No default password is set in NX-1.
  When no changes are made in the password setting of NX-1, just click **Login**.
- You cannot log in while another user is logged in from another device.

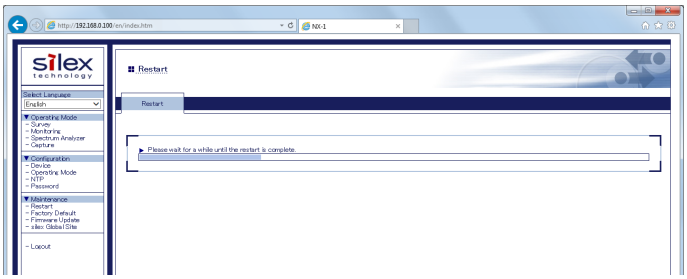
3. The Survey Configuration page is displayed. From **Maintenance** in the Web page menu, click **Restart**.



4. The Restart page is displayed. Click **Yes**.



5. Now NX-1 is restarting.



6. When the restart is completed, the Login page is displayed.
Close the Web browser.

Factory Default Configuration

■ To reset NX-1 to factory defaults using the Push Switch

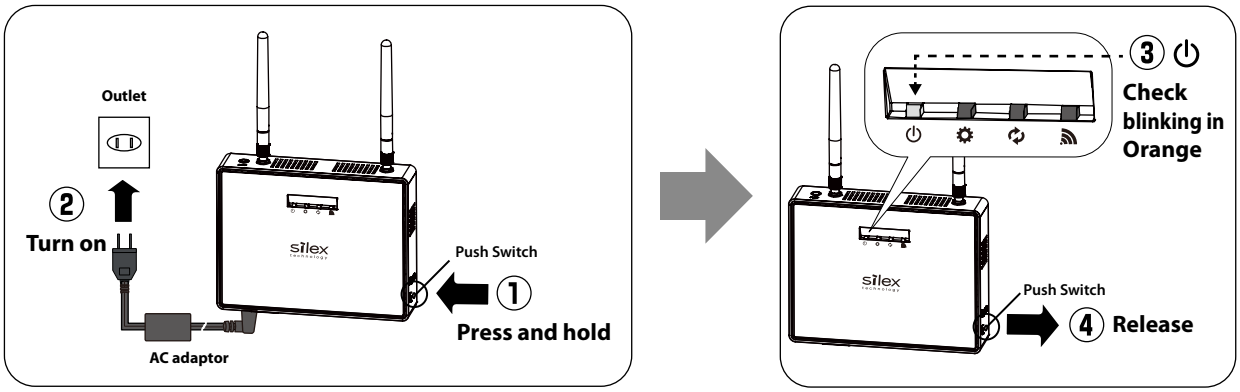
The following explains how to reset NX-1 to factory defaults using the Push Switch.

1. Unplug the AC adaptor of NX-1 from the outlet.

Note

- When receiving power over the Ethernet (PoE), unplug the network cable.

2. Press-and-holding the Push Switch (SET1) on the right side of NX-1, plug in the AC adaptor of NX-1 into an outlet. After the Power LED starts blinking in orange, release the Push Switch.



Note

- When receiving power over the Ethernet (PoE), press and hold the push switch (SET1) on NX-1 while inserting the network cable.

3. The Power LED starts blinking in orange. When the LED turns green, the factory default configuration is completed.

TIP

- Resetting NX-1 to factory defaults sets the IP address to 192.168.0.100. This may disable the access to NX-1 from your PC, preventing the Login page from appearing. In this case, change the IP address of NX-1 or that of your PC to enable the access from your PC.

■ To reset NX-1 to factory defaults using the Web page

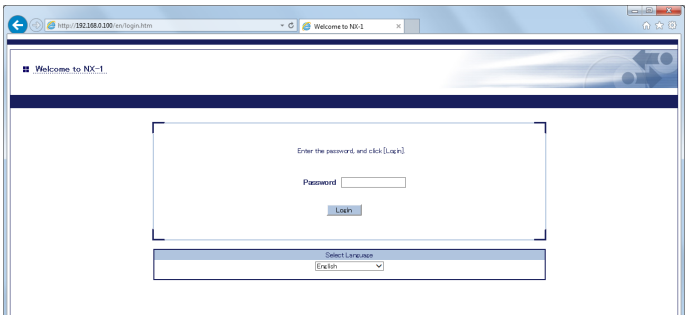
The following explains how to reset NX-1 to factory defaults through the Factory Default page.

1. Start a Web browser and enter the IP address of NX-1 in the address bar.

Note

- By default, an IP address is set to NX-1 as "192.168.0.100".
- When the IP address has been changed during initial setup, enter the new IP address.

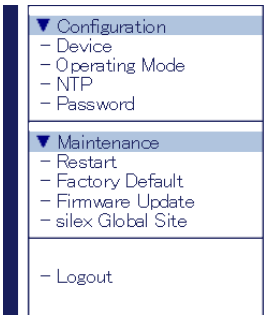
2. The login page of NX-1 is displayed.
Type the password set to NX-1 and click **Login**.



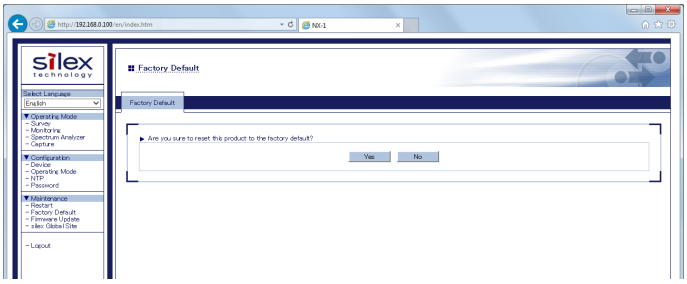
Note

- No default password is set in NX-1.
  When no changes are made in the password setting of NX-1, just click **Login**.
- You cannot log in while another user is logged in from another device.

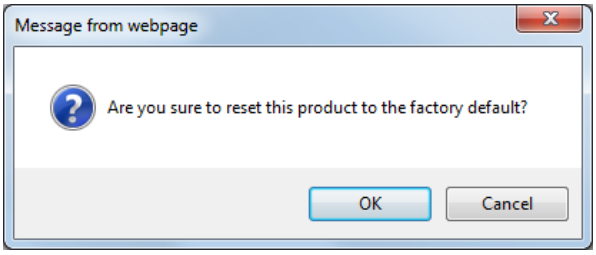
3. The Survey Configuration page is displayed. From **Maintenance** in the Web page menu, click **Factory Default**.



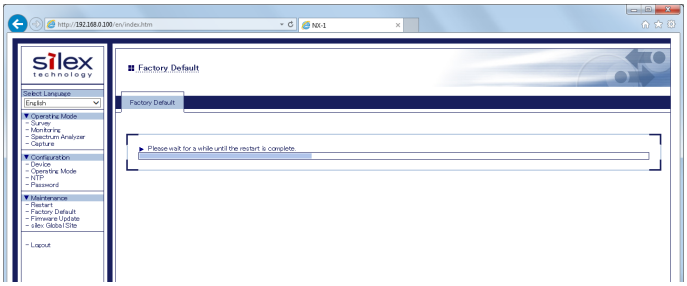
4. The Factory Default page is displayed. In the page, click **Yes**.



5. A confirmation message appears. Click **OK**.



6. The factory default configuration starts. After the configuration is completed, NX-1 is restarted.



7. When the restart is completed, the Login page is displayed.
Close the Web browser.

TIP

- Resetting NX-1 to factory defaults sets the IP address to 192.168.0.100. This may disable the access to NX-1 from your PC, preventing the Login page from appearing. In this case, change the IP address of NX-1 or that of your PC to enable the access from your PC.

Firmware Update

The latest firmware file can be downloaded from our website.
The following explains how to update the firmware through the Web page of NX-1.

Note

- The current firmware version can be identified at the bottom left of the Web page of NX-1.

■ To download the latest firmware

Download the latest firmware as follows:

1. Access our website: http://www.silexamerica.com/

2. Go to the Support page and select the product model.

Product name	NX-1

3. The download page will open. Download the firmware from the page.

■ To update the firmware

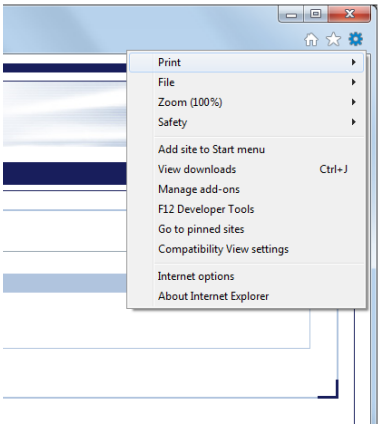
For the firmware update procedure, refer to the manual attached to the firmware.

Appendix

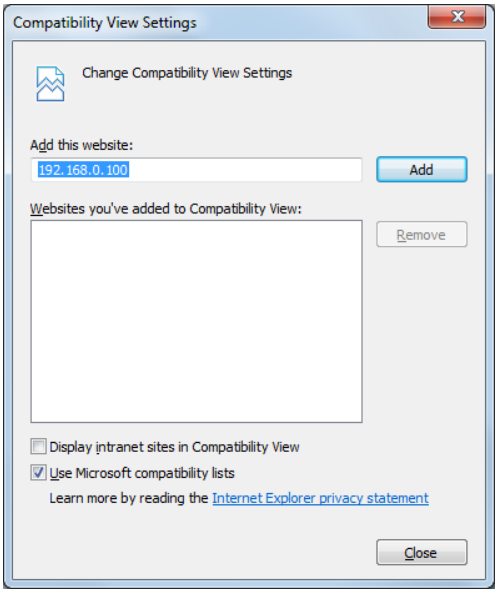
A-1. Notes on Web Browsers

When using **Internet Explorer 11** (hereinafter "IE11") with the Compatibility View feature enabled, the Web page of NX-1 may not be displayed correctly.
When using IE11, disable the Compatibility View feature as follows:

1. Click Tools (Gears icon) in the top right corner of IE11 and choose **Compatibility View Settings** from the menu.



2. Uncheck (disable) **Display intranet sites in Compatibility View** and click **Close**.



A-2. List of All Settings

The following explains the settings that are configured from the Web page of NX-1.

Device Configuration- TCP/IP Configuration

DHCP

Details	Enables/Disables the DHCP protocol. Obtaining an IP address from a DHCP server requires the server to be running in the same subnetwork.
Range	ENABLE/DISABLE
Default	DISABLE

IP Address

Details	Set the IP address. If the DHCP is enabled on your network, the IP Address obtained from it will be applied.
Range	0.0.0.0 ~ 255.255.255.255
Default	192.168.0.100

Subnet Mask

Details	Set the subnet mask. If the DHCP is enabled on your network, the Subnet Mask obtained from it will be applied.
Range	0.0.0.0 ~ 255.255.255.255
Default	255.255.255.0
Note	When set to "0.0.0.0", a subnet mask appropriate for the IP address is automatically assigned.

Default Gateway

Details	Set the gateway address. The default is "0.0.0.0." Setting the default value disables the gateway address. If the DHCP is enabled on your network, the Default Gateway obtained from it will be applied.
Range	0.0.0.0 ~ 255.255.255.255
Default	0.0.0.0

Device Configuration - DNS Configuration

DNS Server (Primary)

Details	Set a primary DNS server address. When DHCP is enabled, the DNS server address obtained from DHCP will be given higher priority.
Range	0.0.0.0 ~ 255.255.255.255
Default	0.0.0.0

DNS Server (Secondary)

Details	Set a secondary DNS server address. When DHCP is enabled, the DNS server address obtained from DHCP will be given higher priority.
Range	0.0.0.0 ~ 255.255.255.255
Default	0.0.0.0

Device Configuration - Device Configuration

Auto-logout time

Details	Set the idle time until the user is logged out automatically.
Range	5 to 60
Default	30

Operating Mode Configuration - Capture Configuration

Channel

Details	Set a channel to capture.
Range	2.4GHz: 1 to 13 5GHz : 36 / 40 / 44 / 48 / 52 / 56 / 60 / 64 100 / 104 / 108 / 112 / 116 / 120 / 124 / 128 / 132 / 136 /140 149 / 153 / 157 / 161 / 165
Default	1

Extension channel

Details	Set an extension channel for IEEE802.11n. For 11b/g/a, set this to 0.
Range	LOWER / 0 / UPPER
Default	0

File Name

Details	The name of a captured data file.
Range	Alphanumeric characters (1-32 characters)
Default	packet

File divide

Details	Enables or disables the file divide and save feature for captured data.
Range	File divide
Default	Enabled

File size

Details	The size of a captured data file.
Range	Integer number of 1 to 1000
Default	100

Ring buffer

Details	Enables or disables the ring buffer feature for saving captured data.
Range	Ring buffer
Default	Enabled

The number of files in the ring buffer.

Details	The number of files stored in the ring buffer.
Range	Integer number of 1 to 1000
Default	10

Operating Mode Configuration - Survey Configuration

2GHz

Details	Set the target channels of 2.4GHz band.
Range	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13
Default	All channels are enabled.

5GHz(W52)

Details	Set the target channels of 5GHz (W52) band.
Range	CH36 / CH40 / CH44 / CH48
Default	All channels are enabled.

5GHz(W53)

Details	Set the target channels of 5GHz (W53) band.
Range	CH52 / CH56 / CH60 / CH64
Default	All channels are enabled.

5GHz(W56)

Details	Set the target channels of 5GHz (W56) band.
Range	CH100 / CH104 / CH108 / CH112 / CH116 / CH120 / CH124 / CH128 / CH132 / CH136 / CH140
Default	All channels are enabled.

5GHz(W58)

Details	Set the target channels of 5GHz (W58) band.
Range	CH149 / CH153 / CH157 / CH161 / CH165
Default	All channels are enabled.

Scan Interval (sec)

Details	Specifies the scan time for a channel in seconds.
Range	Integer number of 1 to 60
Default	1000

Scan Count

Details	Specifies the scan time for a channel in seconds.
Range	Integer number of 1 to 255
Default	1

Operating Mode Configuration - Monitoring Configuration

2GHz

Details	Set the target channels of 2.4GHz band.
Range	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13
Default	All channels are enabled.

5GHz(W52)

Details	Set the target channels of 5GHz (W52) band.
Range	CH36 / CH40 / CH44 / CH48
Default	All channels are enabled.

5GHz(W53)

Details	Set the target channels of 5GHz (W53) band.
Range	CH52 / CH56 / CH60 / CH64
Default	All channels are enabled.

5GHz(W56)

Details	Set the target channels of 5GHz (W56) band.
Range	CH100 / CH104 / CH108 / CH112 / CH116 / CH120 / CH124 / CH128 / CH132 / CH136 / CH140
Default	All channels are enabled.

5GHz(W58)

Details	Set the target channels of 5GHz (W58) band.
Range	CH149 / CH153 / CH157 / CH161 / CH165
Default	All channels are enabled.

Monitoring Interval (minute)

Details	Specify the monitoring interval in minutes.
Range	2-60
Default	2

Monitoring Mode Configuration - Spectrum Analyzer Configuration

Band

Details	Set the target wireless band.
Range	2.4GHz / 5GHz(W52 / W53) / 5GHz(W56) / 5GHz(W58)
Default	2.4GHz

Measurement Time (sec)

Details	Specify the monitoring time in seconds.
Range	30-1800
Default	180

Monitoring Mode Configuration - Push Switch Configuration

Assigned function

Details	Assigns the Monitoring Mode or the Capture Mode to the Control Switch (SET2) on the right side of NX-1.
Range	Monitoring/Capture
Default	Monitoring

NTP Configuration - NTP Configuration

NTP

Details	Enables/Disables the NTP protocol.
Range	ENABLE / DISABLE
Default	DISABLE

NTP Server

Details	Set the domain name or IP address for NTP server.
Range	Domain name: Alphanumeric character string (0-128 characters) IP Address: 0.0.0.0 - 255.255.255.255
Default	None

Local Time Zone

Details	Set the local time zone.
Range	-12:00 ~ +12:00
Default	+9:00

Password Configuration - Password Configuration

Password

Details	Set the administrator password (up to 8 ASCII characters). This password is used for authentication when changing settings from a Web browser.
Range	Alphanumeric characters (0-8 characters)
Default	None