

KENWOOD

NEXEDGE 2nd Generation

Basic Configuration

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Revision History

Date	Description
2015.10.30	- Added NXR-5700/ NXR-5800 as the supported model. - Deleted "(Version update)" in "1.4 Features of the System" (because the functions are supported). - Changed the title of 2.6 to "KPG-D2/ KPG-109D". - Added the information of KPG-D2 to the following items: 2.6 KPG-D2/ KPG-109D Adjustment of the Repeater Step 4 of "Adding a Channel to the Added Site" - Added the information of NXR-5700/ NXR-5800 to the following items: 1.2 System Structure 2.3 Repeater Adjustment of the Repeater Condition and Format of a Frame Synchronization Cable Connection of a LAN Cable - Changed the version number from 1.00 to 1.20.
2016.7.15	- Added the information for a site structured with NXR-5700/ NXR-5800 and NXR-700/ NXR-800/ NXR-900/ NXR-901 mixed to the following items: Step 4 of "Adding a Site to a System Controller" Step 2 of "Configuring Site Controller Items of the Site to be Added" - Added the following screen: Figure 3-35 GPS Report Channel Parameters Figure 3-36 Sync - Added the configuration information for Model Type, 50 Ohm Termination, and External Reference to step 4 of "Configuring Site Controller Items of the Site to be Added". - Corrected the information in "Connection of an OCXO Unit". - Added the following items to "Condition and Format of a Frame Synchronization Cable": External Reference 50 Ohm Termination Connection of the system structured only with NXR-5x00 Precautions for a site where the combination of NXR-5x00 and NXR-x00 is used - Added the information for the attachment of a CompactFlash card to "About CompactFlash Card (NXR-x00 Only)" - Change the following screens: Figure 3-28 Trunking Type Figure 3-32 General (Add) Figure 3-34 Control Channel Parameters Figure 3-37 Time Settings Figure 3-41 Site List Figure 3-43 Channel Information Figure 3-89 Save Figure 3-93 Save Figure 3-102 Site Information Figure 3-110 Console Figure 3-111 Telephone - Changed the version number from 1.20 to 1.40.
2017.6.12	- Changed the name External Reference to Startup Delay. - Changed the name OCXO Reference to 5min. - Changed the version number from 1.40 to 1.60.

Date	Description
2017.11.30	1) Added NXR-5900/ NXR-5901 as the supported model. 2) Added the information for a site structured with NXR-5700/ NXR-5800/ NXR-5900/ NXR-5901 and NXR-700/ NXR-800/ NXR-900/ NXR-901 mixed to the following items: Step 4 of "Adding a Site to a System Controller" 3) Change the following screens: Figure 3-44 Channel List.png Figure 3-45 Channel Information.png Figure 3-49 Channel List.png 4) Changed the version number from 1.60 to 1.70.

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1.1 Purpose of this Manual

This manual provides information for customers who purchased a NEXEDGE 2nd Generation system to configure the software for building the system. The steps from configuring the basic configuration to confirming the connection with the subscriber unit are described. Although various functions of a NEXEDGE 2nd Generation system can be used in actual operations, refer to Help in System Configuration Utility for details of each function. Also, refer to the service manual for the adjustment of the repeater.

1.2 System Structure

The NEXEDGE 2nd Generation system allows you to build a larger-scaled system than the NEXEDGE 1st Generation system by combining an NXR-700/ NXR-800/ NXR-900/ NXR-901 (hereinafter referred to as “NXR-x00”) or an NXR-5700/ NXR-5800/ NXR-5900/ NXR-5901 (hereinafter referred to as “NXR-5x00”) digital repeater with PC servers. Also, various functions from the NEXEDGE 1st Generation system are improved, such as the configuration function through the Web and the function to monitor the system by using Network Manager.

The following is the basic structure of the NEXEDGE 2nd Generation system:

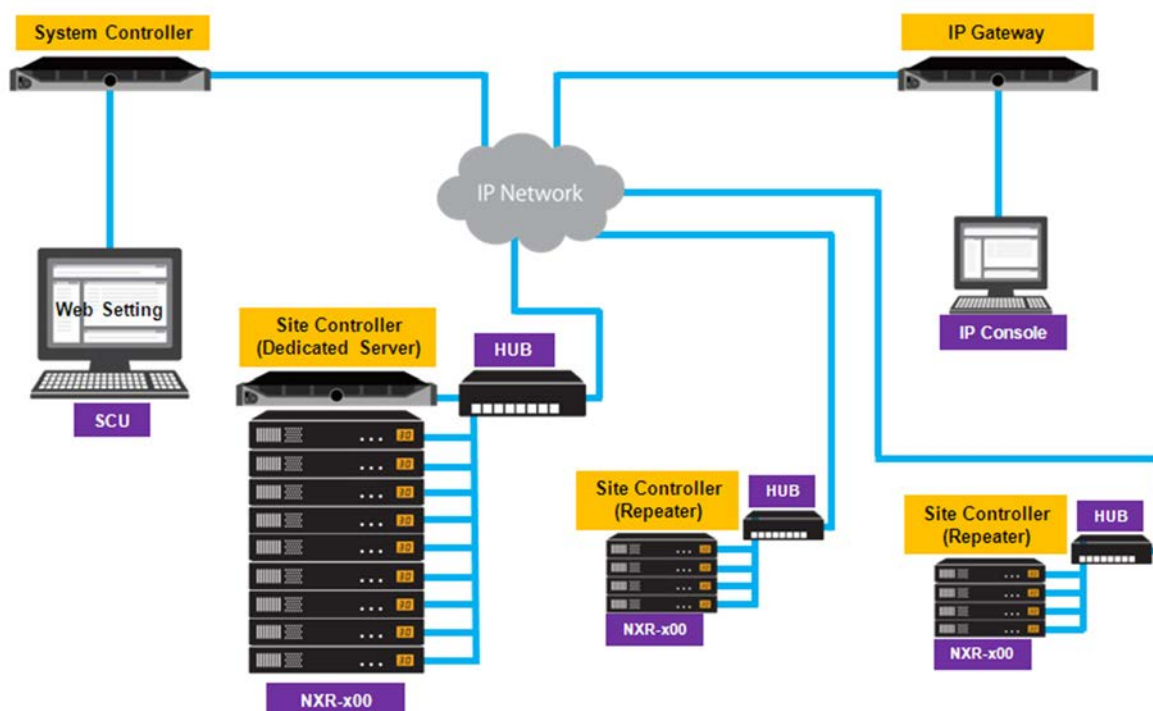


Figure 1-1 Basic Structure of a NEXEDGE System

Note

- In the figures after Figure 1-1, the repeater described as NXR-x00 also includes NXR-5x00. Refer to [3.6 STEP 5: Structure of a Site on page 37](#) for the procedure to connect a system structure.

1.3 System Name by Structure

The following names are used for a NEXEDGE 2nd Generation system, depending on the system configuration and scale.

1) Single-Site System

A system consists of a single System Controller, a single Site Controller (a PC server for combined or dedicated use of repeaters), and multiple repeaters. This system is used only in a single Site, and Intersite Call is unavailable. System Configuration Utility (hereinafter referred to as "SCU") functions by the System Controller.

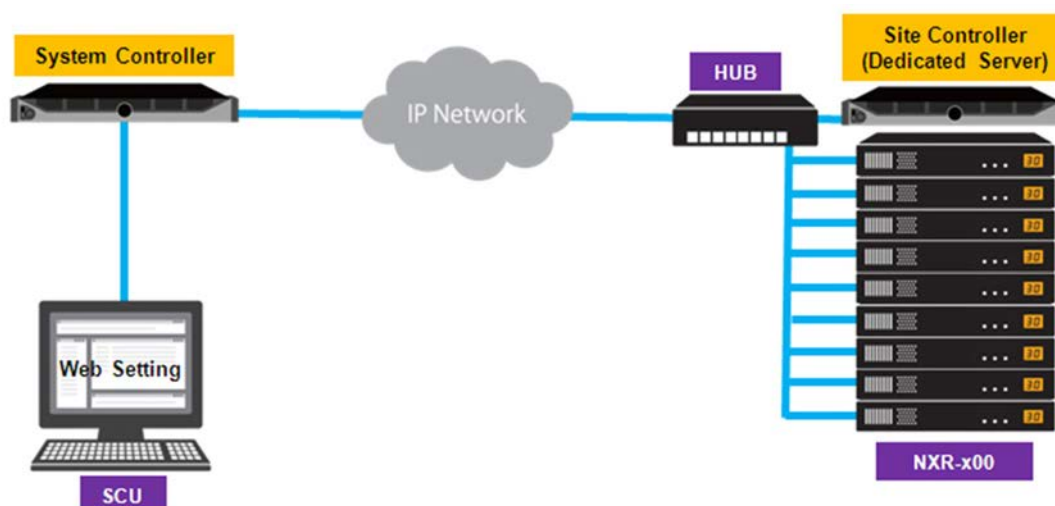


Figure 1-2 Single-Site System

2) Multi-Site System

A system consists of a single System Controller, multiple Site Controllers (for combined or dedicated use), and multiple repeaters. This system operates in multiple sites (a maximum of 48 sites), and Intersite Call is used. SCU functions by the System Controller.

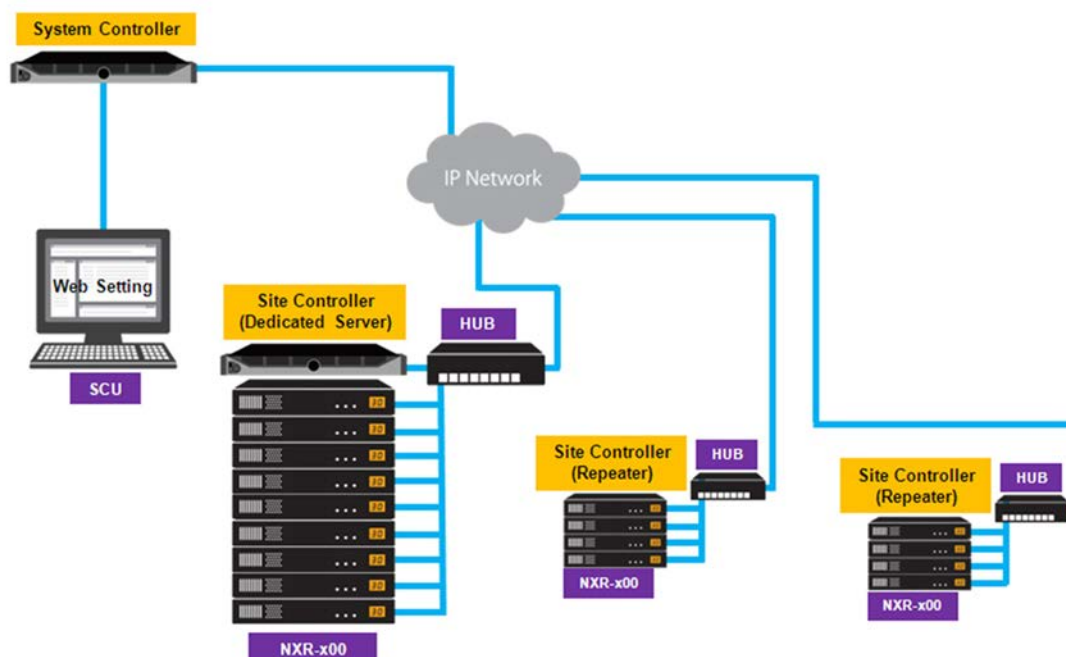


Figure 1-3 Multi-Site System

3) Wide-Area System

A system built by connecting multiple Single-Site Systems or Multi-Site Systems of the same System Code. By connecting multiple systems of the same System code, the structure can exceed the limit of 48 sites in a Multi-site System.

SCU is operated by Primary System Controller, which is one of the system structuring Wide-Area System, and other Secondary System Controller is operated by sharing the data of Primary System Controller.

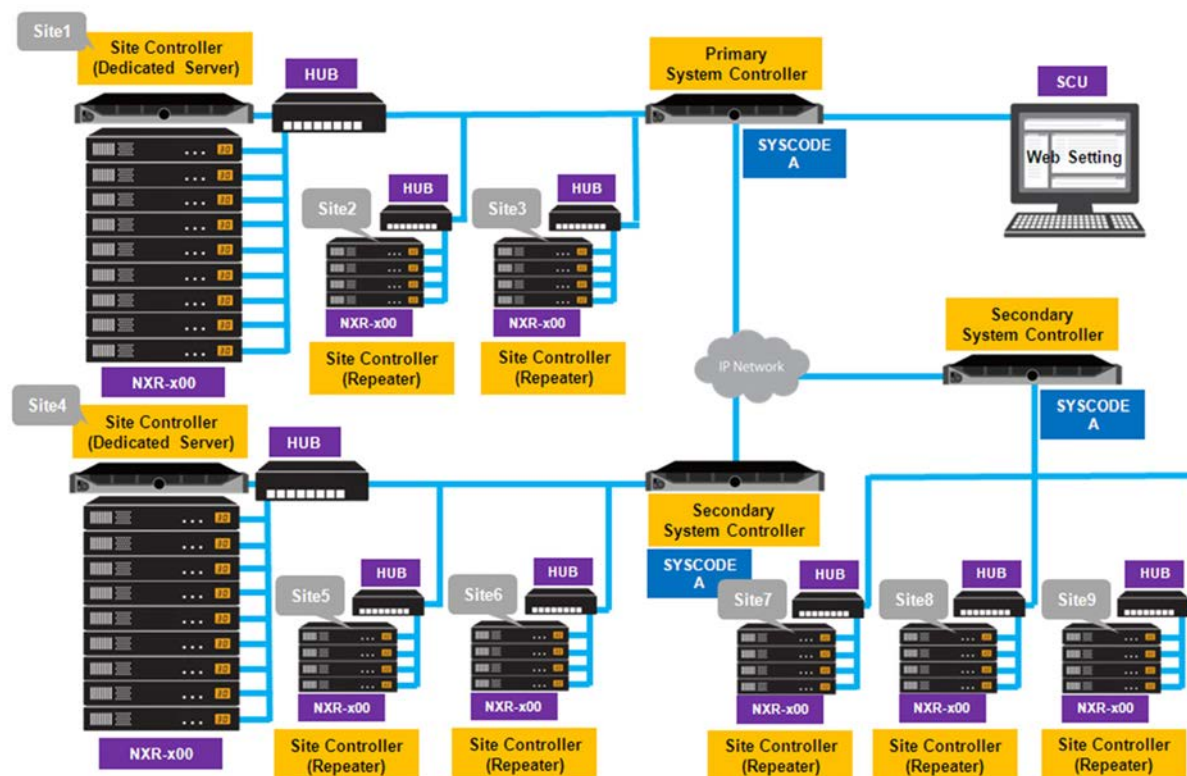


Figure 1-4 Wide-Area System

1.4 Features of the System

The following are the features of a NEXEDGE 2nd Generation system:

Basic Functions

- 1) Based on the functions of a NEXEDGE 1st Generation system, the basic functions correspond with a large-scale system exceeding 48 sites.
- 2) NXR-x00 hardware can be used in a NEXEDGE 2nd Generation system by updating the firmware.
- 3) A PC server is used as System Controller to improve the processing ability.
- 4) The conditions of a restart occurrence are minimized, and the improvement of enabling configuration changes without stopping system operation.

Function Comparison with NEXEDGE 1st Generation

- 1) System configuration through the Web allowing multiple system administrators from different locations to change configurations in parallel is enabled.
- 2) The capability to automatically adjust time for the whole system is enabled, supporting the NTP server.
- 3) The recording of communication is changed from recording per site to centralized recording per communication. Convenience, such as billing, is improved.
- 4) Direct Frequency Assignment is supported. In a CCH report or TCH allocation message, the method to directly specify the frequency is supported. By specifying the frequency information from the system when adding a system channel, a subscriber unit enables use of the added channel without overwriting the FPU data even if the added frequency information is not registered in the subscriber unit.
- 5) Compared with a NEXEDGE 1st Generation system, more subscriber units using GPS can be included by installing a GPS-dedicated channel.
- 6) The automatic acquisition of the ESN of a subscriber unit is supported, eliminating the manual input by a system administrator.
- 7) Registration Monitor is equipped, enabling the capability to confirm which specific UID is currently registered, and with which GID a specific UID is registered. The current status of the call area for each GID can be displayed.

Compatibility

- 1) A subscriber unit used in a NEXEDGE 1st Generation system can be used in a NEXEDGE 2nd Generation system if the preexisting functions remain. No change to the firmware or FPU data is required.
- 2) NXIP Interface is supported. If a preexisting function remain in the device developed for a NEXEDGE 1st Generation system, the function can continue to be used in a NEXEDGE 2nd Generation system. Also, the number of Consoles included can be increased by adding the IP Gateway.

2.1 System Controller



Figure 2-1 System Controller

System Controller is a device for managing information of a system consisting of a maximum of 48 sites. One System Controller is required in each system.

A System Controller enables SCU to function and manages the system.

In a Wide-Area System structure, one of the System Controllers structuring the system is Primary System Controller enabling SCU to function.

For configuring a NEXEDGE 2nd Generation system, access SCU by using the Web browser of a PC. Installation of the software to a PC is not required. Refer to [Connecting to SCU on page 17](#) for the method of connecting to and operating SCU.

2.2 Site Controller



Figure 2-2 Site Controller

Site Controller is a device for managing channels structuring a site or communicating with a System Controller. In a site consisting of 9 channels or less, a repeater can also be used as Site Controller.

2.3 Repeater



Figure 2-3 Repeater

An NXR-5x00 repeater which supports a NEXEDGE 2nd Generation system can be used.

An NXR-x00 repeater which is also used for a NEXEDGE 1st Generation system can be used as well. For connecting to a NEXEDGE 2nd Generation system, the firmware must be overwritten with the NEXEDGE 2nd Generation system firmware. The repeater firmware of a NEXEDGE 1st Generation system and repeater firmware of a NEXEDGE 2nd Generation system cannot coexist.

2.4 IP Gateway



Figure 2-4 IP Gateway

IP Gateway is a device for connecting the device compliant with NXIP Console Interface. A maximum of 10 IP Gateways can be connected to a single System Controller, and 100 units of Consoles can be connected to a single IP Gateway, so that a maximum of 1,000 units of Consoles can be connected to a single System Controller.

Roaming Gateway



Figure 2-5 Roaming Gateway

Roaming Gateway is a device for connecting the System Controller of the own system to the System Controller including other system codes.

By using the Roaming Gateway, the communication by roaming to the connected System Controller is possible.

Network Manager

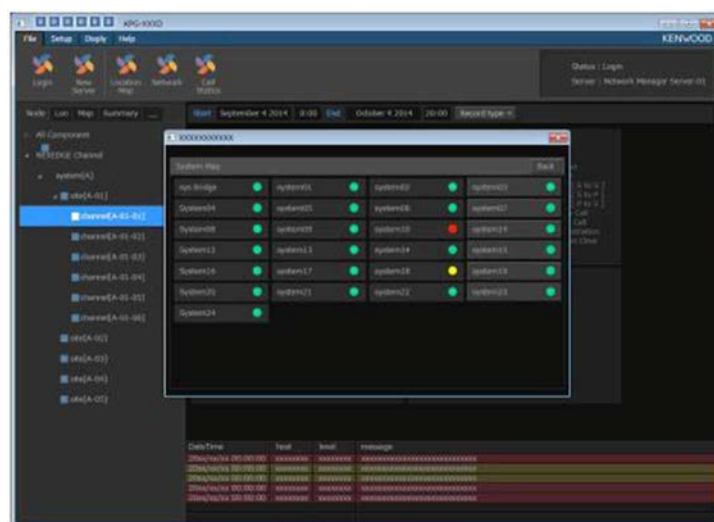


Figure 2-6 Network Manager

Network Manager is a monitoring application which monitors a NEXEDGE 2nd Generation system and notifies when a failure occurs. Network Manager Client and Network Manager Server work together in monitoring. Network Manager can also configure devices, such as repeaters, System Controllers or routers to be monitored. If the number of monitored targets is 100 or less, Network Manager Server can be operated on the same PC as the System Controller. If the number of monitored targets exceeds 100, a Network Manager Server needs to be installed separately. A maximum of 1,000 monitored targets can be specified if Network Manager Server is installed.

2.7

KPG-D2/ KPG-D2N/ KPG-109D/ KPG-109DN

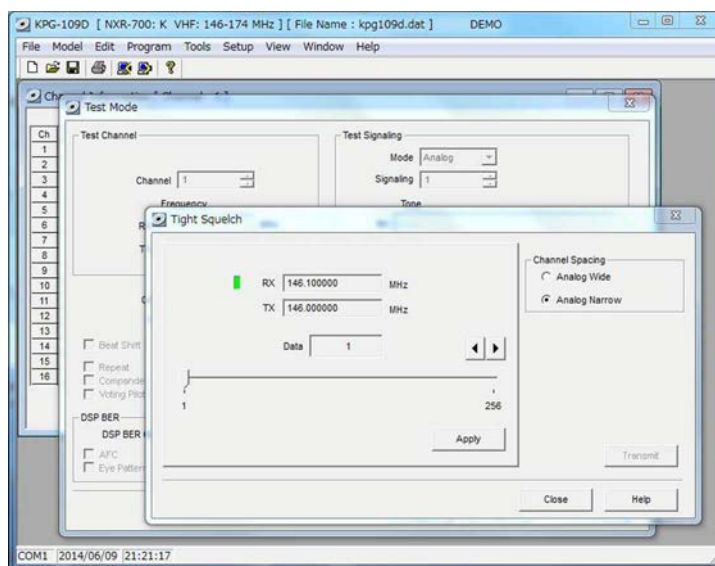
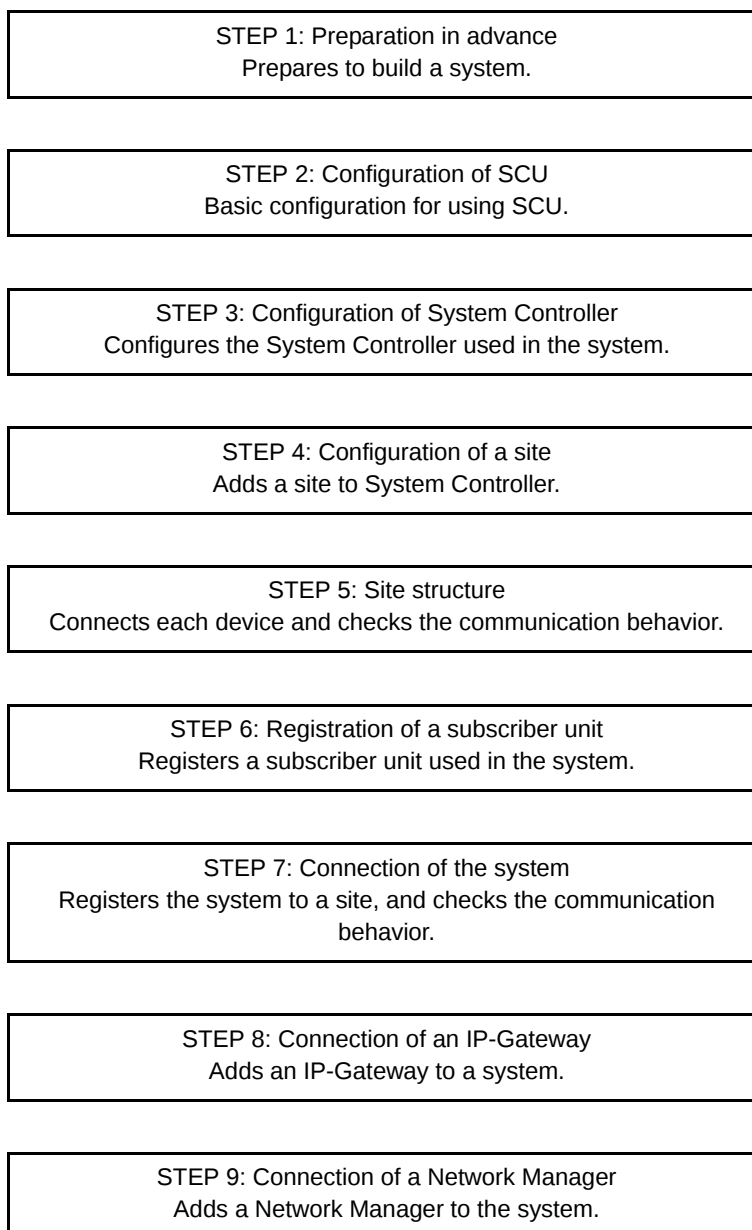


Figure 2-7 KPG-109D (Screen Sample)

The NEXEDGE 2nd Generation system enables the capability to make all configurations on SCU. KPG-D2/ KPG-D2N/ KPG-109D/ KPG-109DN is required only for the adjustment of the repeater and the confirmation of the MAC Address. If the firmware of a NEXEDGE 2nd Generation system is written to the NXR-5700/ NXR-5800/ NXR-5900/ NXR-5901 repeater, KPG-D2/ D2N version 5.20 or later is required. If the firmware of a NEXEDGE 2nd Generation system is written to the NXR-700/ NXR-800/ NXR-900/ NXR-901 repeater, KPG-109D/ DN version 5.00 or later is required.

3.1 System Building Flow

The following is the flow for building the NEXEDGE 2nd Generation system.



3.2 STEP 1: Preparation in Advance

This preparation is to build a system on a repeater or a PC server.

Adjustment of the Repeater

First, adjust the repeater according to the conditions of usage. Adjust by connecting a repeater and a PC with a commercially available USB Type-B cable (NXR-5x00) or a 9-pin serial crossover cable (NXR-x00).

For NXR-5x00, a repeater is adjusted using KPG-D2.

Refer to the service manual or In Depth Manual (CSI edition) for details of adjustment steps.

For NXR-x00, even after migrating to the 2nd generation, the repeater can be readjusted if the repeater is embedded in the system and the firmware is automatically written. After migrating to the 2nd generation, KPG-109D having firmware version 5.00 or later is used.

Refer to the service manual or In Depth Manual (CSI edition) for details of adjustment steps. The adjustment steps remain unchanged from NXR-x00 of the 1st generation.

Note

- As the MAC Address of the repeater is required for site configuration, confirm the MAC Address in **Repeater Information** (KPG-D2) or in **Network Information** (KPG-109D) by using KPG-D2/ KPG-109D.

Overwriting the Firmware of the Repeater

For NXR-x00, the 2nd generation firmware cannot be written to a repeater on which the 1st generation firmware is functioning. Also, the 1st generation firmware cannot be written to a repeater on which the 2nd generation firmware is functioning. For writing firmware, the generation of the repeater can be switched by writing the firmware for migration once. This section describes how to write the firmware for migration from the 1st generation to the 2nd generation required to change from the 1st generation to the 2nd generation. When migrating from the 2nd generation to the 1st generation, only the firmware used for migration differs and the steps are the same. For an NXR-5x00 repeater, switching the generation is not required.

Note

- Different firmware is used as the firmware for migration from the 1st generation to the 2nd generation and as the firmware for migration from the 2nd generation to the 1st generation.

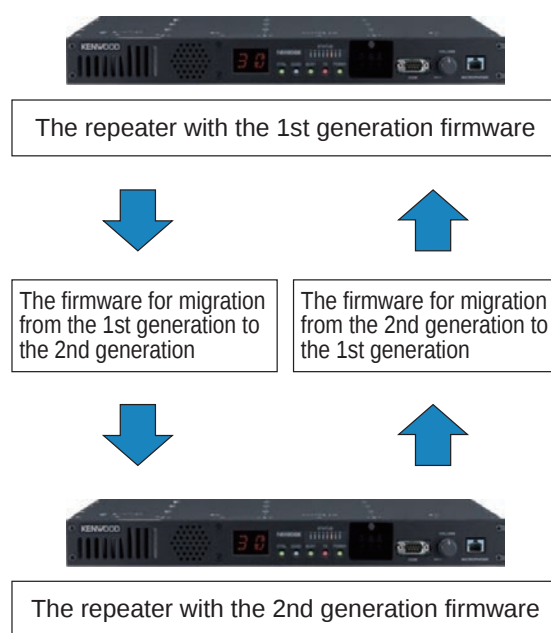


Figure 3-1 Overwriting the Firmware

1 Connect a repeater and a PC with a 9-pin serial crossover cable, and then run Fpro.exe.

The executable file is in the same folder as “kpg109d.exe”.

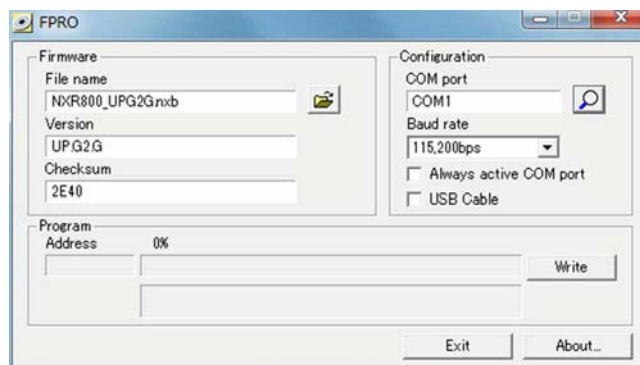


Figure 3-2 Fpro

2 Click the folder icon, select the firmware to be written for migration from the 1st generation to the 2nd generation, and then click the “Write” button.

After building a system, the 2nd generation firmware is automatically written.

Initial Configuration of a PC Server (System Controller/ Site Controller/ IP Gateway)

The initial configuration of a PC server is configured. For the initial configuration, Serial Console is used since Serial Console allows the PC server to be configured even if the network is not configured.

Logging in to Serial Console

1 Connect the PC server to a PC with a 9-pin crossover cable, and connect using terminal software (such as Tera term) via a serial port.

The following are the communication parameters for connecting:

Baud rate: 9600 bps
 Data bit: 8 bit
 Parity: none
 Stop bit: 1 bit
 Flow control: none

2 When the login screen is displayed after pressing the **[Enter]** key, enter the login ID and login password.

Obtain a login ID and login password from the place of purchase of the system.



```
CentOS release 6.5 (Final)
Kernel 2.6.32-431.el6.x86_64 on an x86_64

localhost.localdomain login:
```

Figure 3-3 Serial Console

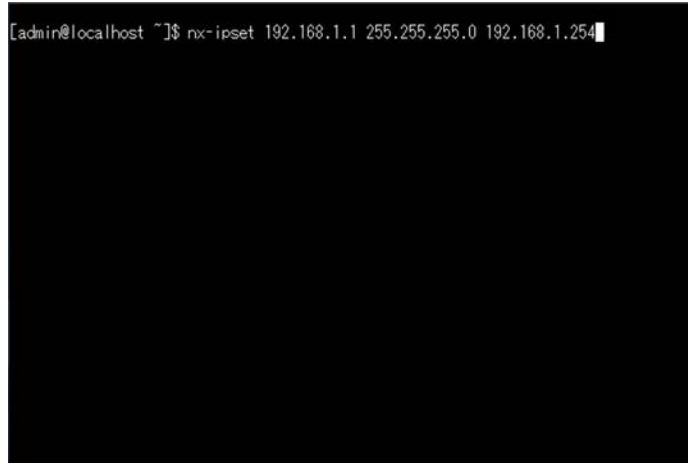
● IP Address Configuration

1 Configure the IP address by using the command for configuring an IP address.

The arbitrary “IP address”, “subnet mask” and “default gateway” are specified as command parameters, and the “primary DNS server address” and “secondary DNS server address” are optionally specified. The items and order of commands and parameters are as follows:

nx-ipset “IP address” “subnet mask” “default gateway” “primary DNS server address (optional configuration)”
“secondary DNS server address (optional configuration)”

Example of command entry: nx-ipset (space) 192.168.1.1 (space) 255.255.255.0 (space) 192.168.1.254 (space)
111.111.111.111 (space) 222.222.222.222



```
[admin@localhost ~]$ nx-ipset 192.168.1.1 255.255.255.0 192.168.1.254
```

Figure 3-4 IP Address Configuration

2 Enter “y” when the confirmation of the configuration appears.

```
[admin@localhost ~]$ nx-ipset 192.168.1.1 255.255.255.0 192.168.1.254
-----
IP Addr =192.168.1.1
Mask =255.255.255.0
Gateway =192.168.1.254
DNS1 =none
DNS2 =none
-----
Are you sure? y/n
y
```

Figure 3-5 IP Address Configuration

3 Enter “y” when the confirmation to restart the network service appears.

```
[admin@localhost ~]$ nx-ipset 192.168.1.1 255.255.255.0 192.168.1.254
-----
IP Addr =192.168.1.1
Mask =255.255.255.0
Gateway =192.168.1.254
DNS1 =none
DNS2 =none
-----
Are you sure? y/n
y
Do you restart network service? y/n
y
```

Figure 3-6 IP Address Configuration

Network services are restarted, and the configuration is applied.

```
[admin@localhost ~]$ nx-ipset 192.168.1.1 255.255.255.0 192.168.1.254
-----
IP Addr =192.168.1.1
Mask =255.255.255.0
Gateway =192.168.1.254
DNS1 =none
DNS2 =none
-----
Are you sure? y/n
y
Do you restart network service? y/n
y
Shutting down interface em1: [ OK ]
Shutting down loopback interface: [ OK ]
Bringing up loopback interface: [ OK ]
Bringing up interface em1: Determining if ip address 192.168.1.1 is already in
use for device em1...
[ OK ]
[admin@localhost ~]$
```

Figure 3-7 Restart of Network Services

● Display of Device ID

1 Display the Device ID by entering the command for displaying a Device ID.

Record the displayed Device ID for use when registering to a system.

The Device ID must be 16-digit characters in readable format.

Example of command entry: "nx-deviceidview"

```
[admin@localhost ~]$ nx-deviceidview  
*123 ABCD EFGH IJKL
```

Figure 3-8 Device ID

● Authentication File (Level License) Installation

1 Install the Authentication File (*.jklfs) in the PC server by using the authentication file (level license) install command.

Install an authentication file (level license) generated from the Device ID in the PC server.

By installing the authentication file (level license), starting services on the PC server is permitted and the services are enabled. Obtain the authentication file (level license) from the place of purchase of the system.

Example of command entry: "nx-lsinst kpg1000.jklfs"

```
[admin@localhost ~]$ nx-lsinst kpg1000.jklfs
```

Figure 3-9 Authentication File (Level License) Installation

Note

- By entering "nx-lsinst --delete", all installed authentication files (level license) can be deleted.

2 Confirm the installed authentication file (level license) by using the authentication file (level license) confirmation command.

Use the “nx-lsview” command to confirm the installed authentication file (level license).

Example of command entry: “nx-lsview”



```
[admin@localhost ~]$ nx-lsview
KPG-1000SY
[admin@localhost ~]$
```

Figure 3-10 Authentication File (Level License) Confirmation

● Authentication File (Upgrade License) Installation

1 Install the Authentication File (*.jklfs) in the PC server by using the authentication file (upgrade license) install command.

Install an authentication file (upgrade license) generated from the Device ID in the PC server.

By installing the authentication file (upgrade license), the upgrade of functions is permitted and enabled on the PC server.

Obtain the authentication file (upgrade license) from the place of purchase of the system.

Example of command entry: "nx-upglsinst kpg1011vp.jklfs"



Figure 3-11 Authentication File (Upgrade License) Installation

Install an authentication file (upgrade license) in the PC server described in the following table.

Table 3-1 PC Server for Authentication File (Upgrade License)

Authentication File (Upgrade License)	PC Server for Installation
KPG-1011VP	KPG-1002GW (IP Gateway)

Note

- By entering "nx-upglsinst --delete", all installed authentication files (upgrade license) can be deleted.
- When installing an authentication file (upgrade license) after starting operation, the PC server needs to be restarted in the SCU to enable an authentication file (upgrade license).

2 Confirm the installed authentication file (upgrade license) by using the authentication file (upgrade license) confirmation command.

Use the “nx-upglsview” command to confirm the installed authentication file (upgrade license). The installed licenses and the number of the licenses are displayed.

Example of command entry: “nx-upglsview”



```
[admin@localhost ~]$ nx-upglsview  
(2x)KPG-1011VP  
[admin@localhost ~]$
```

Figure 3-12 Authentication File (Upgrade License) Confirmation

3.3 STEP 2: Configuration of a System Configuration Utility (SCU)

Connecting to SCU

SCU can be accessed by starting a web browser and entering the IP address of a System Controller as a URL.



Figure 3-13 Connecting to SCU

Login/ Logout

Accessing SCU displays the login screen.

Clicking the "Login" button after entering the user name and password of an Administrator allows you to login. The default configuration of the user name and password of an Administrator is as follows. Since the password is not configured under the default configuration, change the password after login as needed. Refer to [Account Configuration of SCU \(User Add/ User Delete/ User Password/ User Level\)](#) on page 20 for how to change the password.

User Name	admin
Password	(blank)

The screenshot shows the 'Login' screen of the SCU. It features two input fields: 'User Name' and 'Password', both outlined in red. Below these fields is a 'Login' button, also outlined in red. The background is a light gray.

Figure 3-14 Login

After logging in to SCU, clicking the logout icon displayed at the top right of each screen allows you to log out.



Figure 3-15 Logout

Basic Screen Layout of SCU

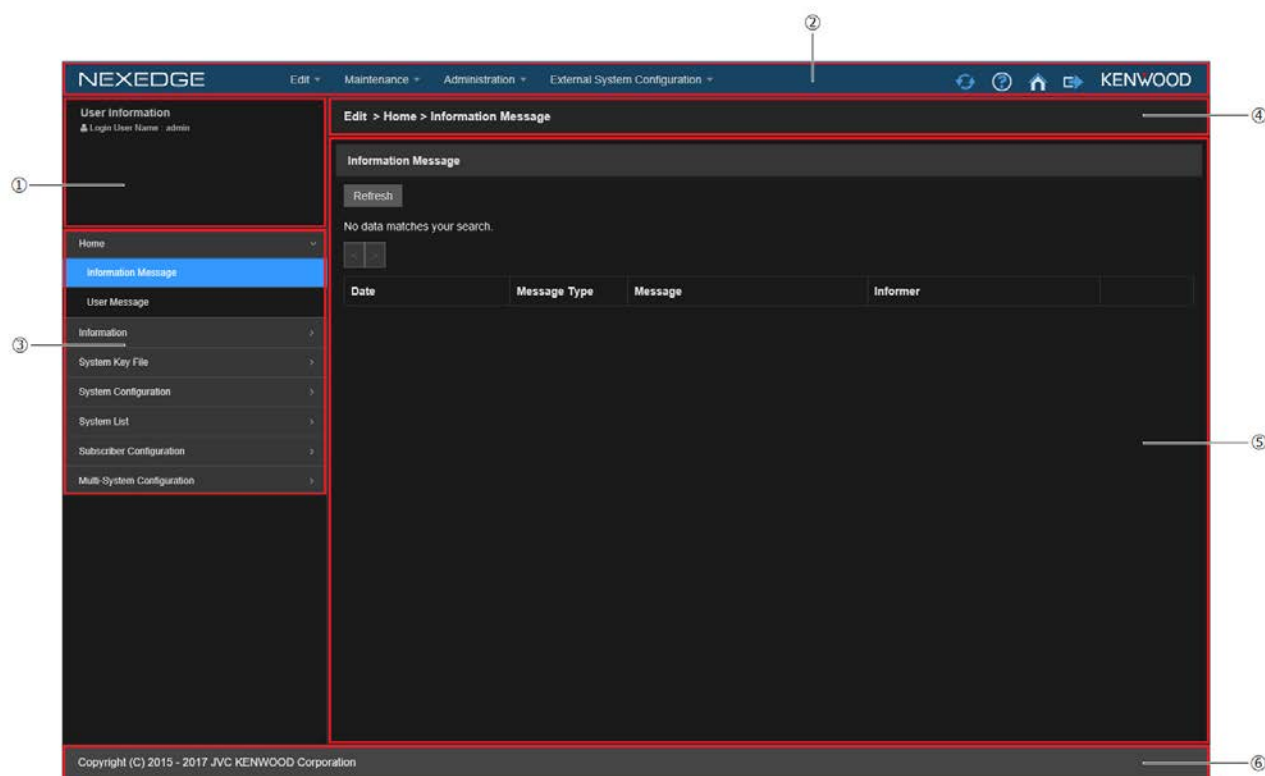


Figure 3-16 Basic Screen Layout of SCU

Table 3-2 Basic Screen Layout of SCU

No.	Name	Function
①	User information	Login information and update information of each configuration page are displayed.
②	Header	This field is commonly displayed in every page. Links to main configuration menus, etc. are displayed.
③	Navigation	Links to detailed menus related to the displayed page are displayed.
④	Main window	The hierarchy is displayed sequentially from the top page to the displayed page.
⑤	Main text	This field displays the main text of each page.
⑥	Footer	This field is commonly displayed in every page. The copyrights appear.

Reading an Activation File

By opening **Edit > Information** of SCU, license information of the system read from an Activation File can be confirmed. The Activation File can be changed by clicking the “Browse...” button and then selecting an Activation File. The configuration range and functions of the system which can be built by SCU are restricted according to the parameters in the Activation File.

The Activation File is a data file with license information required for building the system. Obtain the file from the place of purchase of the system.

Figure 3-17 Information

Generating a System Key File

In **Edit > System Key File** of SCU, by entering the License ID and System Name of the FPU to configure the subscriber unit, and then clicking the “Create” button to specify the save location, a System Key File (extension: .skf) is created at the specified save location. The System Name is the name used when selecting a System Key File on the FPU of the subscriber unit. The System Name can be entered as a maximum of 16 alphanumeric characters and symbols.

A System Key File must be provided to a FPU user because the trunking cannot be configured for the subscriber unit on the FPU of the subscriber unit if no System Key File exists.

Figure 3-18 System Key File

Account Configuration of SCU (User Add/ User Delete/ User Password/ User Level)

The SCU account for configuration and operation of a system can be configured in **Administration > System Administrators** of SCU. The configured accounts can be confirmed in the list. Clicking the “Add” button adds an account, and clicking the “Delete” button deletes an account other than the Administrator account.

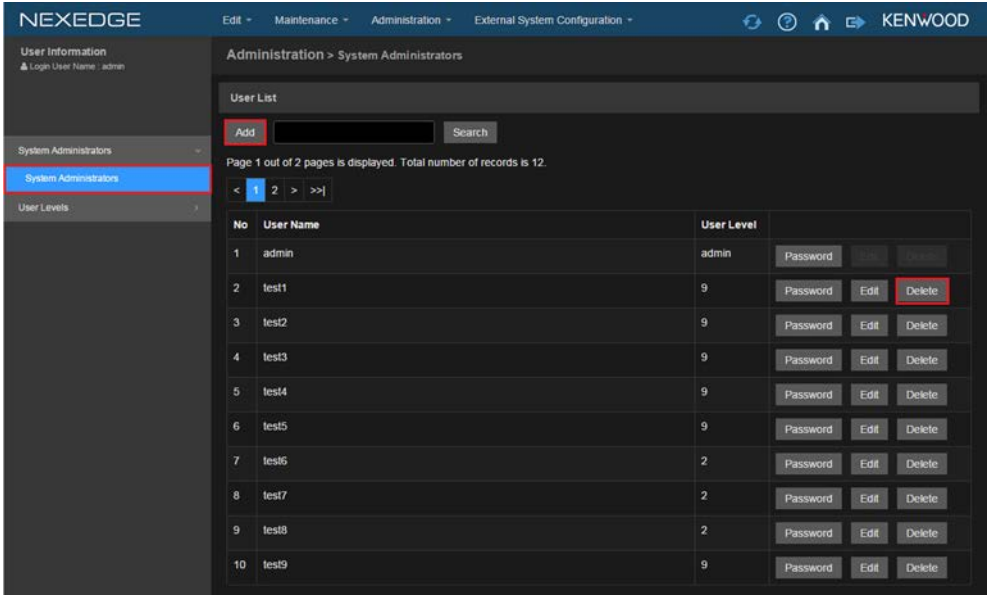


Figure 3-19 System Administrators

Clicking the “Add” or “Edit” button in **Administration > System Administrators** displays **System User**, and the user level of the account can be configured. The User Name can be entered as a maximum of 64 alphanumeric characters and symbols.

Click the “Save” button after configuration.

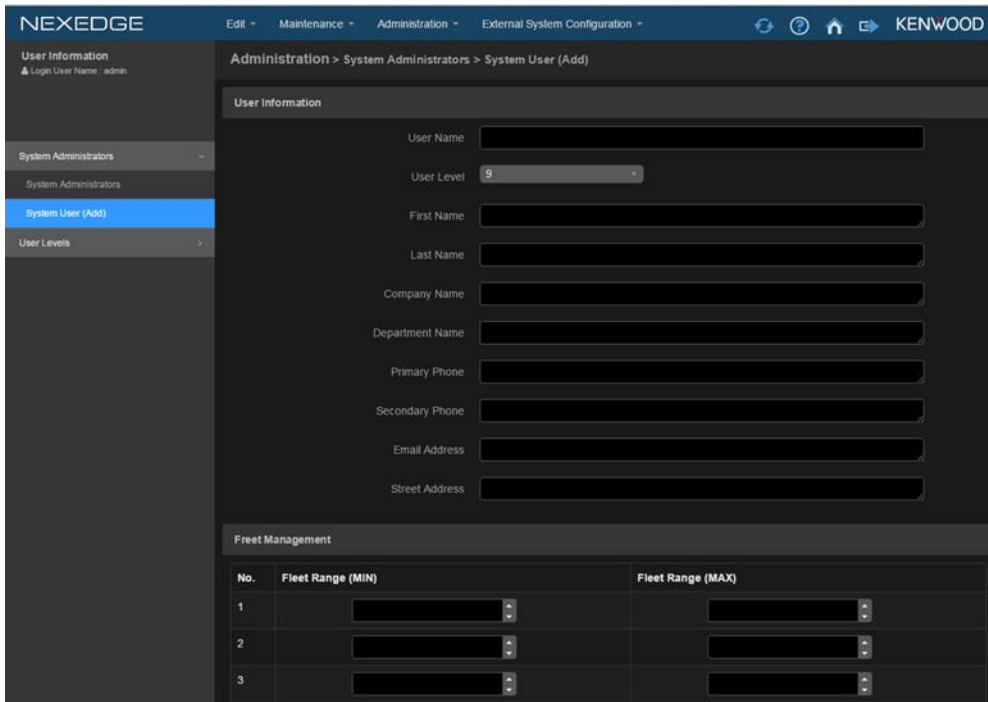


Figure 3-20 System User

3.3 STEP 2: Configuration of a System Configuration Utility (SCU)

Clicking the “Password” button in **Administration > System Administrators** displays **System User Password**, and the password of the account can be entered or changed. The password can be entered as a maximum of 64 alphanumeric characters and symbols.

The password is not configured by default. After configuration, click the “Save” button.

The screenshot shows the 'System User Password' configuration page in the NEXEDGE interface. The sidebar on the left has 'System User Password' highlighted. The main content area is titled 'Administration > System Administrators > test1: System User Password'. It contains three input fields: 'Current Password' (empty), 'New Password' (containing 'xxxxxxxx'), and 'New Password (Confirm)' (containing 'xxxxxxxx'). A 'Save' button is located at the bottom left of the form area.

Figure 3-21 System User Password

Clicking the “Edit” button in **Administration > System Administrators** and clicking **Site Management** in the navigation displays **Site Management**. Clicking the Edit button in **Site Management** allows you to configure a site that the account is permitted to manage in a system. For the site to be permitted, configure “ON” in **Valid** to remain as default. After configuration, click the “Save” button.

The screenshot shows the 'Site Management' configuration page in the NEXEDGE interface. The sidebar on the left has 'General (Edit)' highlighted. The main content area is titled 'Administration > System Administrators > test1: Site Management > System Number1: General (Edit)'. It contains a table with the following data:

No.	Site Number	Valid
1	1	ON
2	2	ON
3	3	ON
4	4	ON
5	5	ON
6	6	ON
7	7	ON

At the bottom of the table, there are 'Save', 'Cancel', and 'Back' buttons.

Figure 3-22 Site Management

In **Administration > User Levels** the user level can be confirmed in the list.

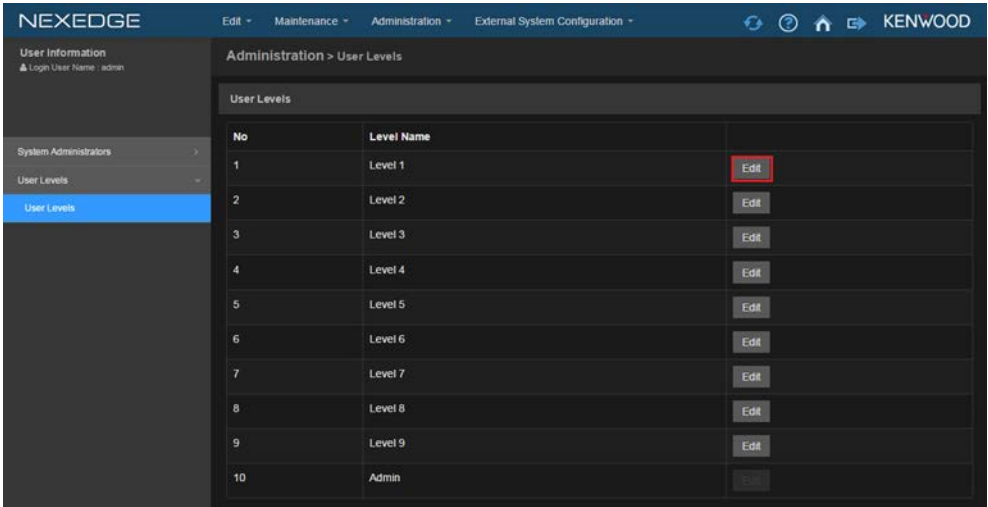


Figure 3-23 User Levels

Clicking the “Edit” button in **Administration > User Levels** displays **User Level**, and the permitted operations for the user level can be configured.

Level Name can be entered and edited as a maximum of 32 alphanumeric characters and symbols.

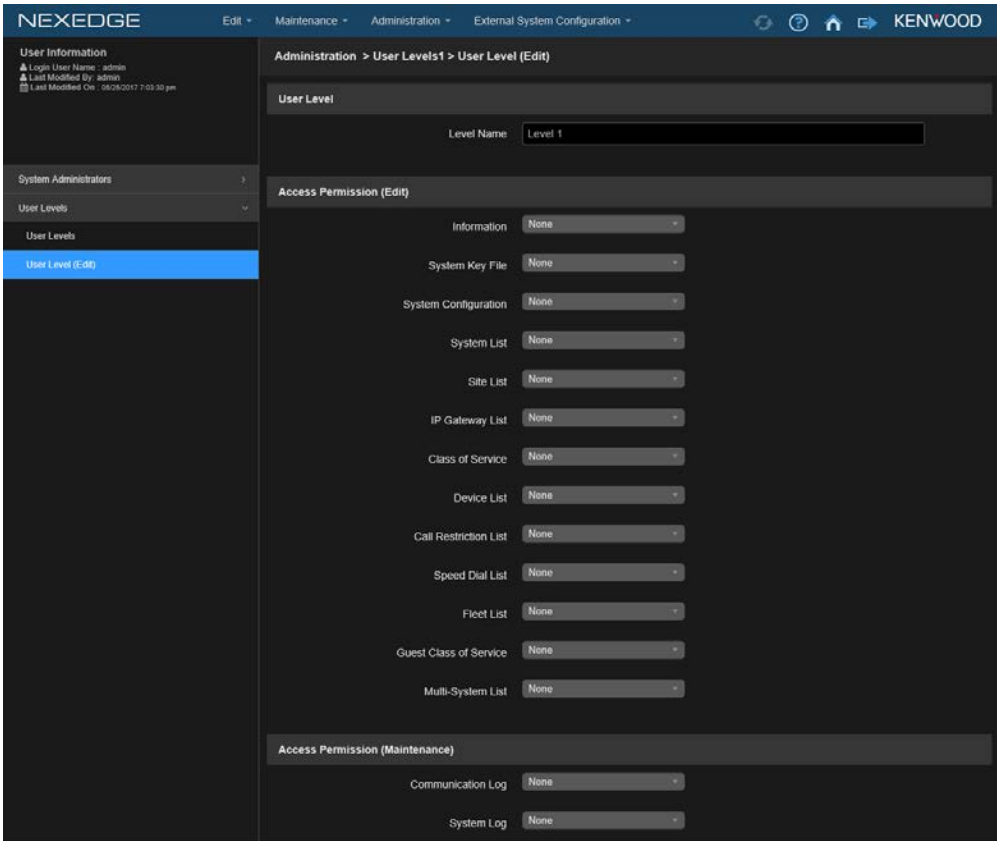


Figure 3-24 User Level

About Reflecting Configuration Changes in System Behavior

As for the configuration items in the **Edit** and **External System Configuration** menus, a series of editing must be collectively reflected in system behavior, so that reflecting in the system behavior is suspended until the “Update” button displayed in the header area is clicked. However, the reflection in the system behavior is automatically executed if logged out without clicking the “Update” button or if timed out due to no activity. The “Update” button is active only if an edited item requiring the reflection in the system behavior exists.

Other users cannot edit the same item until the reflection in the system behavior is executed after saving the edited data. This status can be viewed in the user information area.

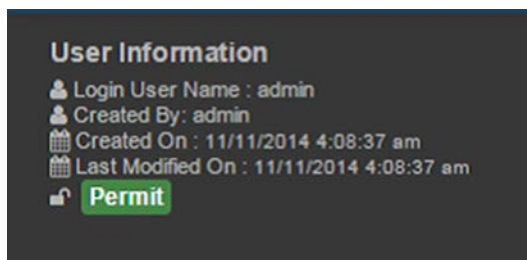


Figure 3-25 Unedited Items (Editable)

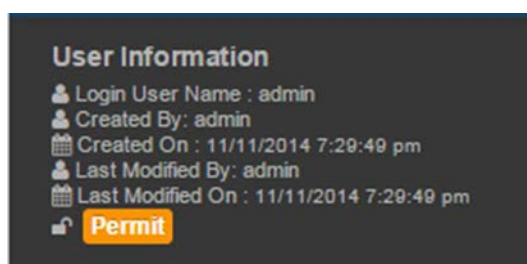


Figure 3-26 Items Edited by the User, but Not Reflected in the System Behavior (Editable)

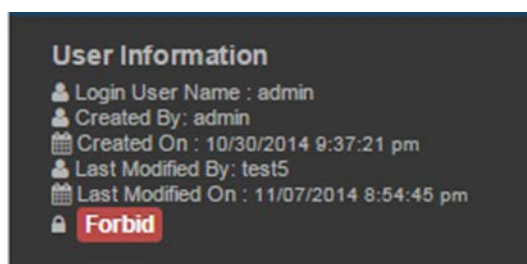


Figure 3-27 Items Edited by Other Users, but Not Reflected in the System Behavior (Not Editable)

As for the configuration items in the **Maintenance** and **Administration** menus, operation is determined at the time of clicking the “Save” button, etc. and the “Update” button is not used.

About Simultaneous Access from Multiple Users

SCU can be logged in simultaneously by multiple accounts. Basically, the data written later is reflected in the configuration as the final data. However, the data written later may not become the final data according to Last Modified On (the last modification date) in the screen that the user is editing.

Conditions Under Which the Data Written Later Does Not Become the Final Data

- If another user clicks the “Save” button first in the same screen as the screen a user is simultaneously editing, the update failure message appears in the user's screen.
- If another user clicks the “Save” button first in the same list screen as the list screen a user is adding an item by clicking the “Add” button, the warning message appears in the user's screen when the “Save” button is clicked if another user registers the same item which is not permitted to be redundantly configured.
- If another user deletes the data while a user is editing the data after clicking the “Edit” button in the list screen, the update failure message appears, and then the list screen appears.

The user, including other users, cannot conduct other operations while Reboot, Firmware Update, Restore, or Factory Reset is executed. Also, the other logged-in users cannot continue operation after these operations are completed. Any attempt to operate displays an error screen, and then the login screen appears.

3.4 STEP 3: Configuration of a System Controller

Configurations of Frequency Tables

The range for frequencies and the bandwidth for a channel (digital) required for configuring frequencies of the repeater can be configured in **Edit > System Configuration > Channel Table > Frequency Allocation**. After configuration, click the “Save” button.

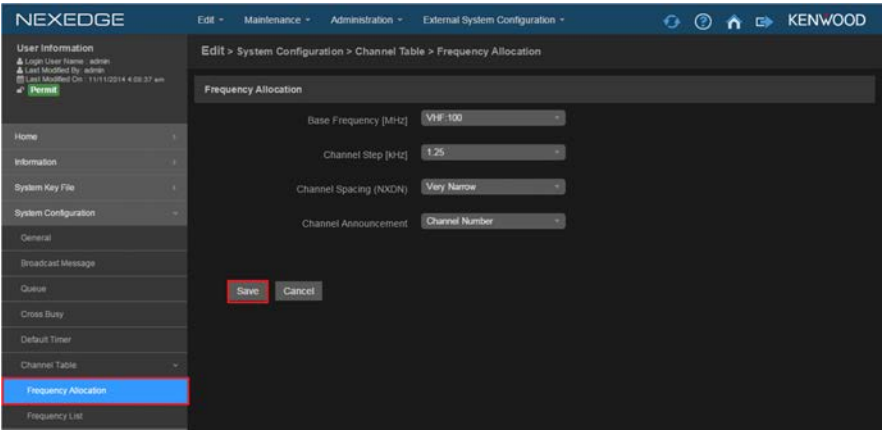


Figure 3-28 Frequency Allocation

The frequencies of the repeater can be configured in **Edit > System Configuration > Channel Table > Frequency List**. By configuring the **Frequency Number** allocated by **Basic Frequency** and **Channel Step** configured here for each channel in **Channel List**, the frequencies of the repeater can be allocated. **RX/TX Frequency** is automatically corrected according to **Base Frequency** and **Channel Step** configured in **Frequency Allocation**. After configuration, click the “Save” button.

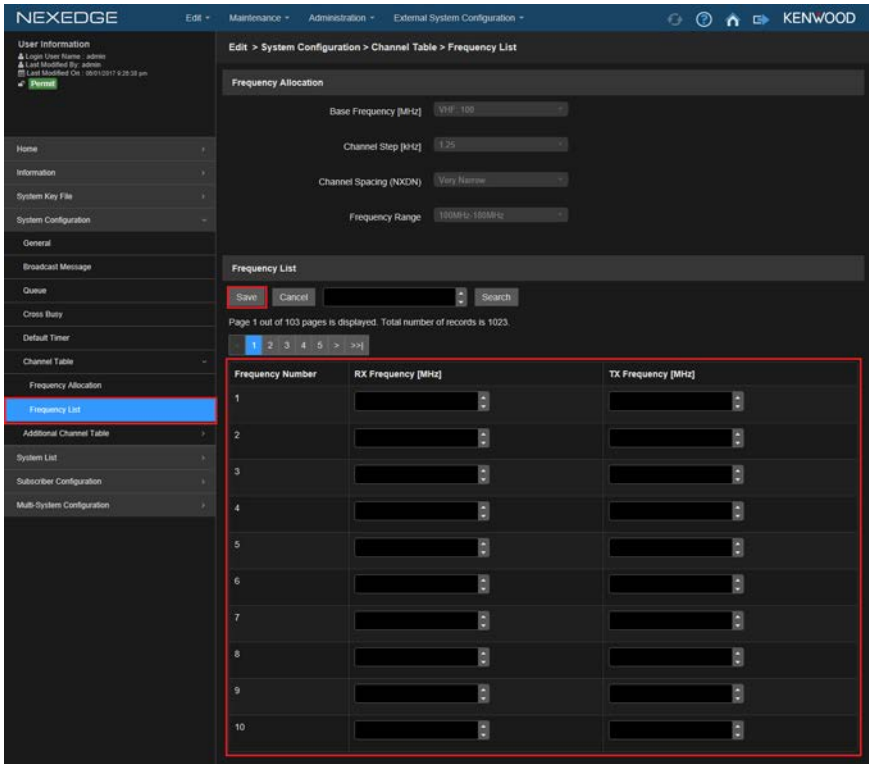


Figure 3-29 Frequency List

Selecting Trunking Mode

Trunking Type can be configured in **Edit > System Configuration > General**.

Message Trunked:

To start transmitting from the receiving subscriber unit as well as from the transmitting subscriber unit at the time of starting communication, “Message Trunked” must be configured. As for ending the communication, basically, the system releases the traffic channel when the subscriber unit disconnects, but the system also releases the traffic channel when the **Hold Timer** expires.

Transmission Trunked:

To start transmitting only from the transmitting subscriber unit at the time of starting communication, “Transmission Trunked” must be configured. As for ending the communication, basically, the system automatically releases the traffic channel when the **Hold Timer** expires after the **PTT** switch of the subscriber unit is released.

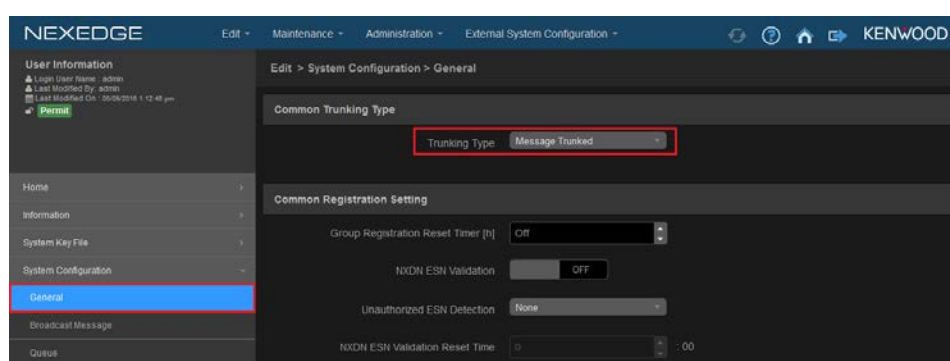


Figure 3-30 Trunking Type

Trunking Type of the system and that of the subscriber unit must be the same configuration. If the configurations differ, the Individual Call communication may be unavailable.

3.5 STEP 4: Site Configuration

Configuration of a Site Controller

Adding a Site to a System Controller

- 1 Select **System List** on the navigation menu, and then click the “Edit” button for the System in the displayed screen.

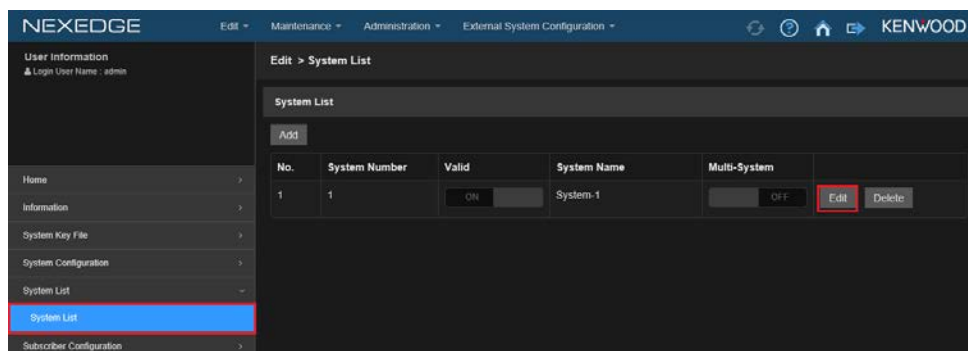


Figure 3-31 System List

- 2 **System Information** is displayed. Click Site List on the navigation menu.

Configure the **IP Address**.

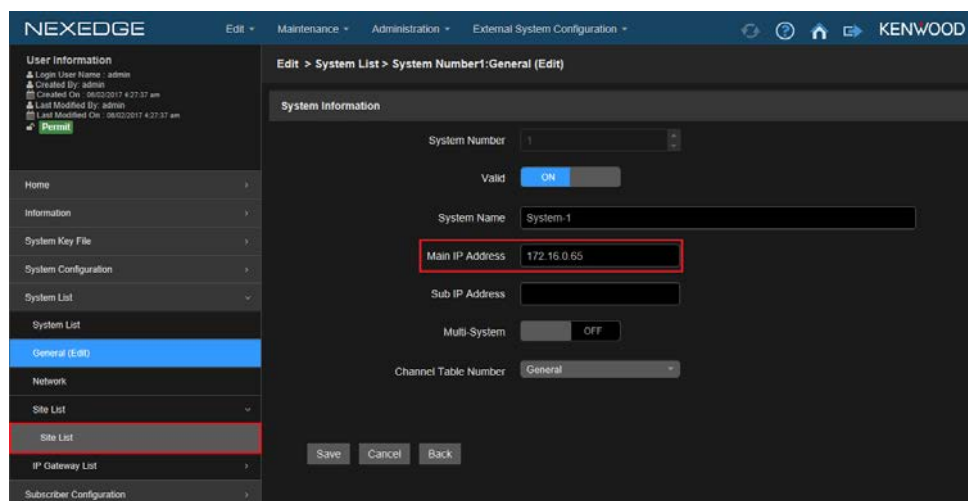


Figure 3-32 System Information

3 Site List is displayed. Click the “Add” button to newly create a site.

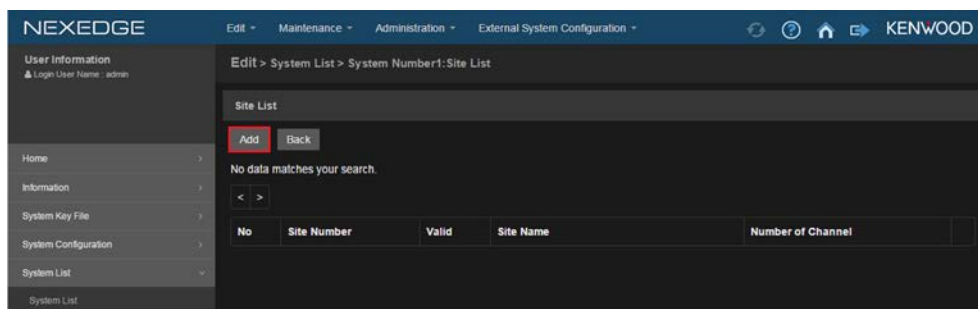


Figure 3-33 Site List

4 Configure the parameters of the site to be newly created in Edit > System List > System Numberxx:Site List > General (Add).

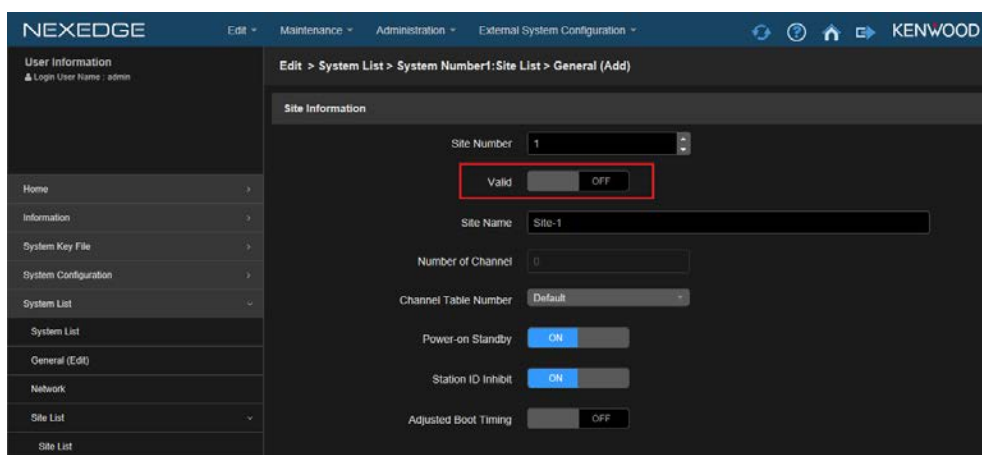


Figure 3-34 General (Add)

Configure “OFF” in **Valid** to remain as default to test the connection of the site alone as instructed in [Communication Confirmation in Site Trunking Mode on page 45](#).

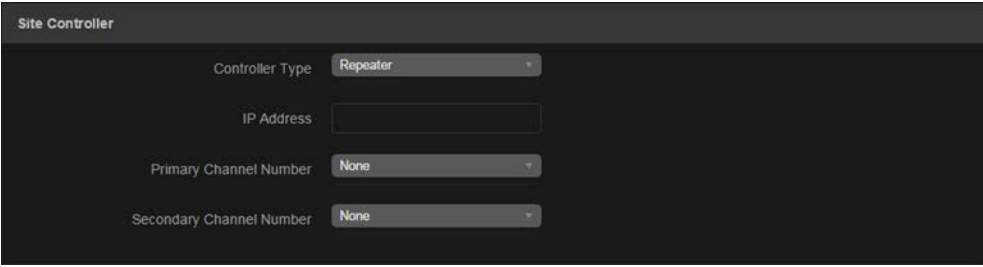
Site Name can be entered as a maximum of 32 alphanumeric characters and symbols.

To structure a site for NXR-x00 and NXR-5x00 to coexist, configure “ON” in **Adjusted Boot Timing**.

Adjusted Boot Timing is the function to delay the startup time of NXR-5700/ NXR-5800. Since the length of time to stabilize the external reference frequency varies depending on the repeater if a system is operated in a site where different types of repeaters coexist, a channel can become available by the same timing as NXR-700/ NXR-800 that is slow to stabilize the external reference frequency by delaying the startup time of NXR-5700/ NXR-5800.

Note

- For NXR-5900/ NXR-5901, the startup time is not extended even if "ON" is configured in this function. Configuring "5min" in **Startup Delay** allows the timing of startup to match NXR-900/ NXR-901.

A screenshot of a 'Site Controller' configuration window. The window has a dark header bar with the title 'Site Controller'. Below the header, there are four configuration items, each with a label and a control element: 'Controller Type' with a dropdown menu showing 'Repeater', 'IP Address' with a text input field, 'Primary Channel Number' with a dropdown menu showing 'None', and 'Secondary Channel Number' with a dropdown menu showing 'None'.

Site Controller	
Controller Type	Repeater
IP Address	
Primary Channel Number	None
Secondary Channel Number	None

Figure 3-35 Site Controller

As each item in Site Controller must be configured as instructed in [Configuring Site Controller Items of the Site to be Added on page 35](#), leave them at the default.

The following other configurations remain as default.

Control Channel Parameters

Non-dedicated Control Channel

None

Automatic Rollover

OFF

Rollover Time

1

: 00

Rollover Interval Timer [h]

24

Figure 3-36 Control Channel Parameters

GPS Report Channel Parameters

Maximum Report Channel Number

0

Transmission Occupancy Rate [%]

12.5

Rollover Interval Timer [h]

Off

Maximum Available Channel Number

0

Figure 3-37 GPS Report Channel Parameters

Sync

Primary Channel Number

None

Secondary Channel Number

None

Figure 3-38 Sync

Time Settings

System Default

ON

Time Zone

UTC

Daylight Saving Time

OFF

Start Date

Start Time

: 00

End Date

End Time

: 00

Figure 3-39 Time Settings

5 Click the “Save” button to save after input is completed.

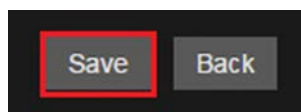


Figure 3-40 Save

Confirm that adding the site is completed and that the added site is displayed in **Site List**.

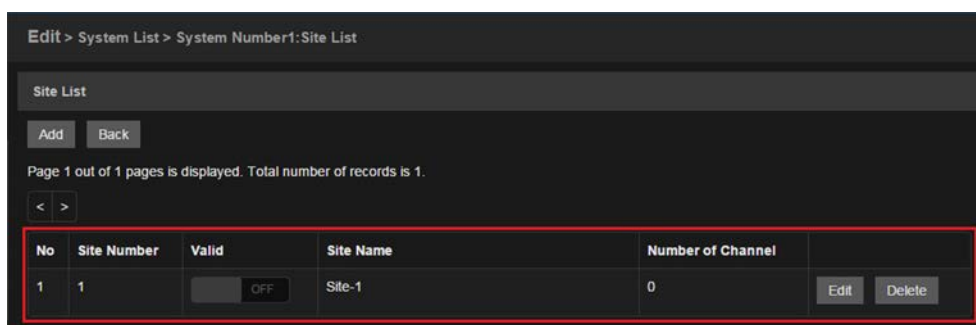


Figure 3-41 Site List

Adding a Channel to the Added Site

A channel is added to the Channel List of the added site.

- 1 Click the “Edit” button of the site to be edited in **Site List**.

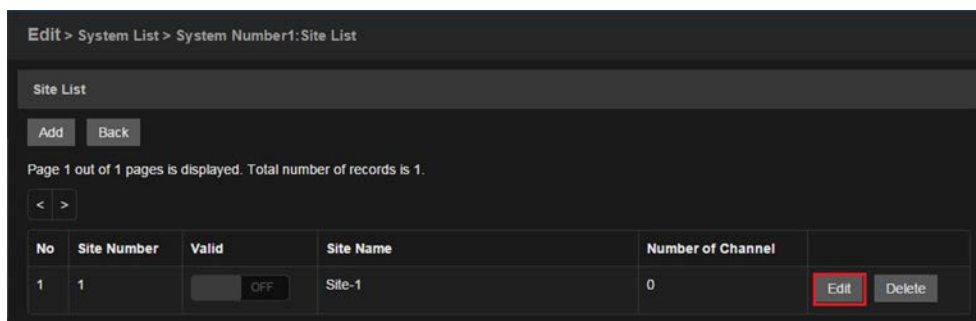


Figure 3-42 Site List

- 2 Click the **Channel List** on the navigation menu.

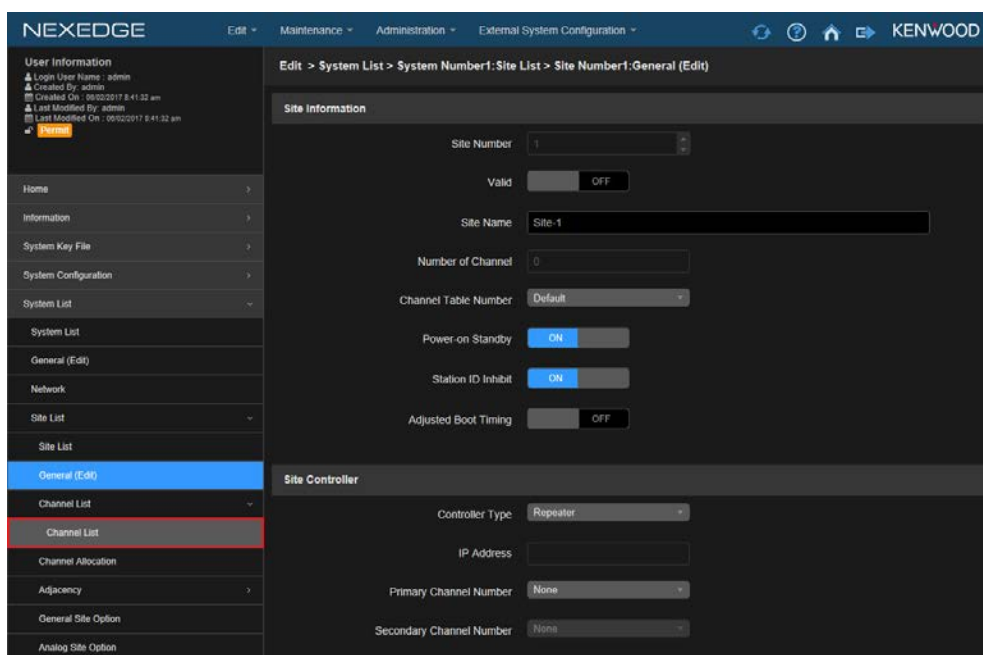


Figure 3-43 Site List

- 3 Click the “Add” button in the **Channel List**.

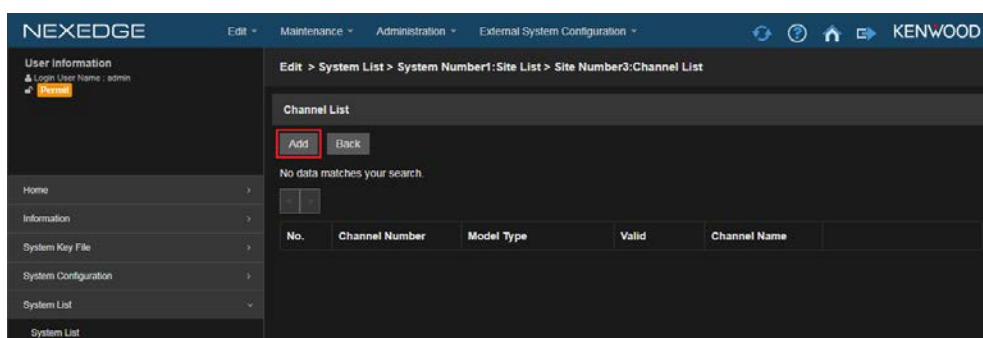


Figure 3-44 Channel List

4 Enter the items required for the channel to be added.

Edit > System List > System Number1:Site List > Site Number3:Channel List > General (Add)

Channel Information

Channel Number

Model Type

Valid ☒

Frequency Number

RX Frequency

TX Frequency

Channel Type

Channel Mode

GPS Report Channel ☐

Channel Name

Cross-busy Input Trigger

Failsafe Mode ☐

Station ID

Station ID Transmit Interval Timer [min]

Station ID Type

Transmit Power

Beat Shift 1 ☐

Beat Shift 2 ☐

Beat Shift 3 ☐

Beat Shift 4 ☐

Beat Shift 5 ☐

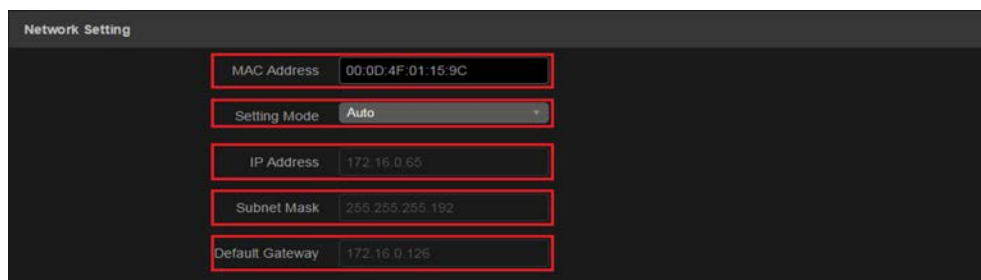
50 Ohm Termination ☐

Startup Delay

Fan Action

Figure 3-45 Channel Information

- Select the repeater type from "NXR-700/ NXR-800/ NXR-900/ NXR-901" and "NXR-5700/ NXR-5800/ NXR-5900/ NXR-5901" in **Model Type**.
- In **Frequency Number**, select the Frequency Number of the repeater configured in **Edit > System Configuration > Channel Table > Frequency List**.
- Select "NXDN" from **Channel Type**.
- Select "Control Channel" or "Traffic Channel" from **Channel Mode** according to the channel mode planned in the site structure.
- Enter an arbitrary distinguishable channel name in **Channel Name**. **Channel Name** can be entered as a maximum of 2 alphanumeric characters and symbols.
- **Station ID** can be entered as a maximum of 32 alphanumeric characters and symbols.
- Select "ON" in **50 Ohm Termination** in order to input an external reference signal and configure the termination resistor by using NXR-5x00.
- Configure in **Startup Delay** the input of an external reference signal by using NXR-5x00. Configure according to the oscillation source of the external reference signal to be inputted.



Network Setting

MAC Address: 00:0D:4F:01:15:9C

Setting Mode: Auto

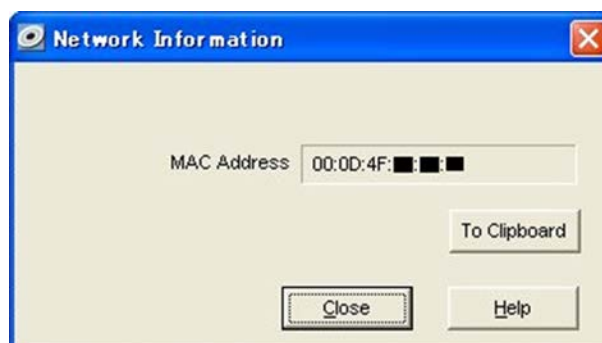
IP Address: 172.16.0.65

Subnet Mask: 255.255.255.192

Default Gateway: 172.16.0.126

Figure 3-46 Network Setting

- Enter the **MAC Address**. Use KPG-D2/ KPG-109D to confirm the MAC Address of the channel, and configure the value acquired in serial communication via **Repeater Information** (KPG-D2) or **Network Information** (KPG-109D).



Network Information

MAC Address: 00:0D:4F:■■■■

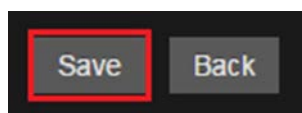
To Clipboard

Close Help

Figure 3-47 Network Information

- In **IP Address**, **Subnet Mask**, and **Default Gateway**, configure the network configuration to be allocated for the repeater which has the configured **MAC Address**. Also, the default is automatically calculated from the site number and channel number, and then entered in the edit box. Change the **IP Address**, **Subnet Mask**, or **Default Gateway** by selecting "Manual" as required in **Setting Mode**.

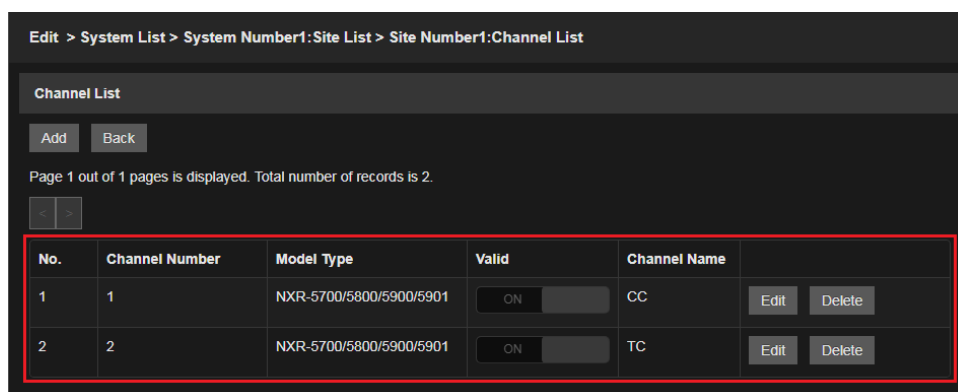
5 Click the "Save" button to save after input is completed.



Save Back

Figure 3-48 Save

Repeat the add operation as many times as the number of channels used in the site.
Confirm that the added channel is registered in the Channel List.



Edit > System List > System Number1:Site List > Site Number1:Channel List

Channel List

Add Back

Page 1 out of 1 pages is displayed. Total number of records is 2.

No.	Channel Number	Model Type	Valid	Channel Name	
1	1	NXR-5700/5800/5900/5901	ON	CC	Edit Delete
2	2	NXR-5700/5800/5900/5901	ON	TC	Edit Delete

Figure 3-49 Channel List

Configuring Site Controller Items of the Site to be Added

Finally, the Site Controller items are configured.

- 1 Click the **Site List** on the navigation menu.

Site List appears.

- 2 Click the “Edit” button of the site to be edited.

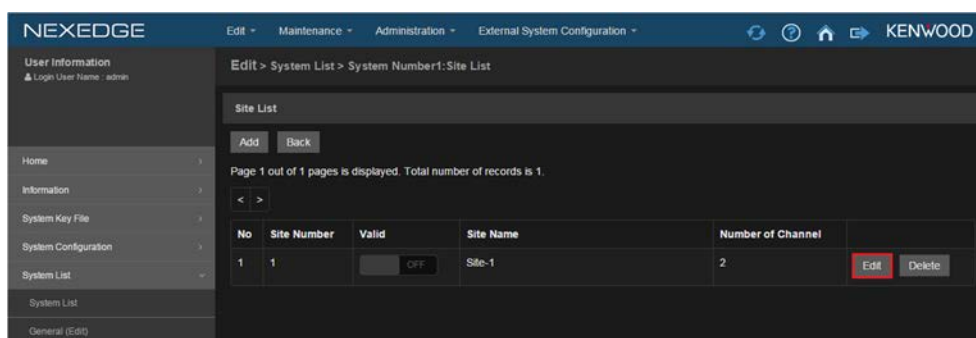


Figure 3-50 Site List

- For configuring “Dedicated Server” in Controller Type

For using a PC server as a Site Controller, select “Dedicated Server” from **Controller Type**.

For **IP Address**, configure the IP address configured for the Site Controller of the corresponding site in ● [IP Address Configuration on page 11](#).

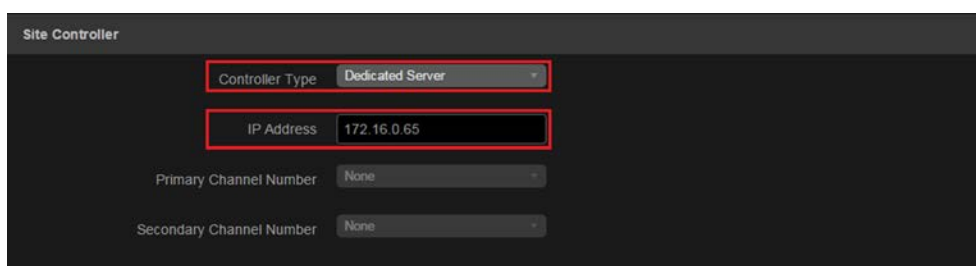


Figure 3-51 Site Controller

● **For configuring “Repeater” in Controller Type**

For using a repeater as a Site Controller, select “Repeater” from **Controller Type**.

Configure the channel number of the repeater to behave as a Site Controller in **Primary Channel Number**. Configure the channel number of the repeater to behave as an alternative Site Controller in case of failures occurred in this channel in **Secondary Channel Number**.

If a site where NXR-x00 and NXR-5x00 coexist is structured, only NXR-5x00 can behave as a Site Controller.

Therefore, if 1 NXR-5x00 unit exists, only the channel of the NXR-5x00 unit can be selected in **Primary Channel Number**. If 2 NXR-5x00 units or more exist, only the channels of the NXR-5x00 units can be selected in **Primary Channel Number** and **Secondary Channel Number**.

Figure 3-52 Site Controller

Configure the channel number of the repeater to transmit a synchronization signal to synchronize the repeaters in the site in **Primary Channel Number** and **Secondary Channel Number** of **Sync**.

If a site where NXR-x00 and NXR-5x00 coexist is structured, only NXR-5x00 can behave as a repeater to transmit a synchronization signal. Therefore, if 1 NXR-5x00 unit exists, only the channel of the NXR-5x00 unit can be selected in **Primary Channel Number**. If 2 NXR-5x00 units or more exist, only the channels of the NXR-5x00 units can be selected in **Primary Channel Number** and **Secondary Channel Number**.

Figure 3-53 Sync

3 Click the “Save” button to save after input is completed.

Figure 3-54 Save

Repeat the adding site operation as many times as the number of sites to be installed.

The basic configuration is completed by the above procedure. Change the detailed configurations of the site and channel as needed.

3.6 STEP 5: Structure of a Site

After configuration of System Controller, Repeater and System Controller are connected and a site is constructed. Refer to In Depth Manual (Function Reference Edition) about the handling of OCXO, and the details of the device connection method.

Connection of an OCXO Unit

Use KXK-3M2 or KXK-3M3 if one of the following 3 conditions applies for using NXR-x00 or NXR-5x00:

- If a legal requirement for frequency stability exists in your region
- If you wish to use a system on a frequency that is stable long-term
- If you wish to use trunking (Synchronization is required of the frequencies of the control channel repeaters and the communication channel repeaters.)

Attaching an OCXO unit to all site channels is not required. The OCXO reference frequency can be shared with another channel through the 10 MHz signal interface on the exterior panel.

Refer to the following table and reliably connect each channel:

Table 3-3 OCXO

	Repeater Model	Frequency accuracy
Internal TCXO	NXR-700/ NXR-800	1.0 ppm at 19.2 MHz
	NXR-900/ NXR-901	0.5 ppm at 19.2 MHz
	NXR-5700/ NXR-5800 NXR-5900/ NXR-5901	0.5 ppm at 20 MHz
OCXO (KXK-3M2)	Option board	1.0 ppm at 10 MHz
OCXO (KXK-3M3)	Option board	0.1 ppm at 10 MHz

Attention

From the REF OUT connector, NXR-900/ NXR-901 can output a 10 MHz standard signal phase locked to a standard signal from a built-in VCTCXO of NXR-900/ NXR-901, or from a standard oscillator externally connected to NXR-900/ NXR-901, and not only from KXK-3. If structuring an NXDN Trunking system, phase lock to the standard signals of all repeaters regardless the mode, such as Very Narrow and Narrow (Digital). If the combination of NXR-5x00 and NXR-x00 is used, KXK-3 needs to be embedded in the NXR-x00 repeater.

The diagram below shows the standard method of attaching KXK-3.

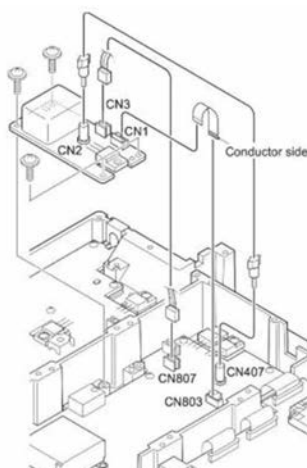


Figure 3-55 How to Attach KXK-3

Condition and Format of a Frame Synchronization Cable

The diagram below shows the required conditions related to Frame Sync of a 4-channel NEXEDGE Digital Trunking system mounted with KXK-3.

As a requirement, a Frame Sync cable must be installed if using 2 or more repeaters in a Trunking system.

Frame Sync Cable and Frequency Sync Cable

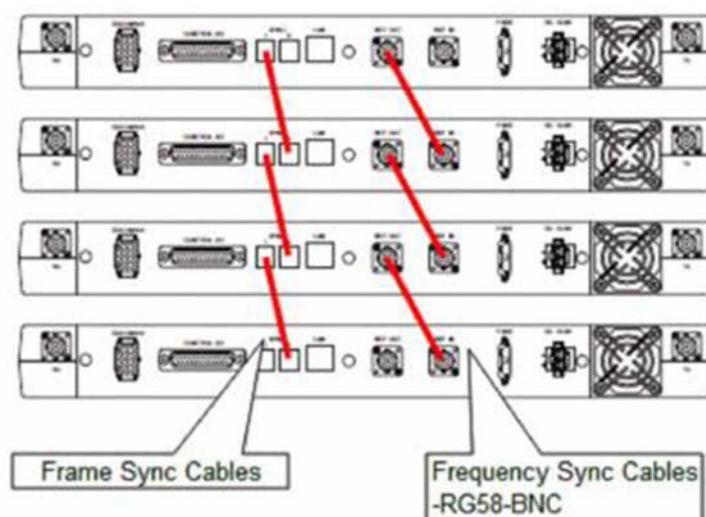


Figure 3-56 Frame Sync Cable and Frequency Sync Cable

A user must pay attention to the connection of REF OUT to REF IN if attaching KXK-3 to a repeater and connecting 12 repeaters or more. Also, use the Frame Sync cable included with NXR-5x00/ NXR-x00. Refer to In Depth Manual (Function Reference Edition) for details.

Startup Delay

In **Startup Delay**, the wait time until the frequency stabilizes by the type of external reference signal input of NXR-5x00 is configured.

To input an external reference signal based on the OCXO to NXR-5x00, configure "5min" in **Startup Delay** by using SCU.

This configuration switches the length of the startup display blinking time when NXR-5x00 is turned on.

50 Ohm Termination

For NXR-5x00, configuring "ON" in **50 Ohm Termination** by using SCU can terminate the impedance of the end of the cable that distributes an external reference signal at a 50 ohm termination in a repeater.

Connection of the system structured only with NXR-5x00

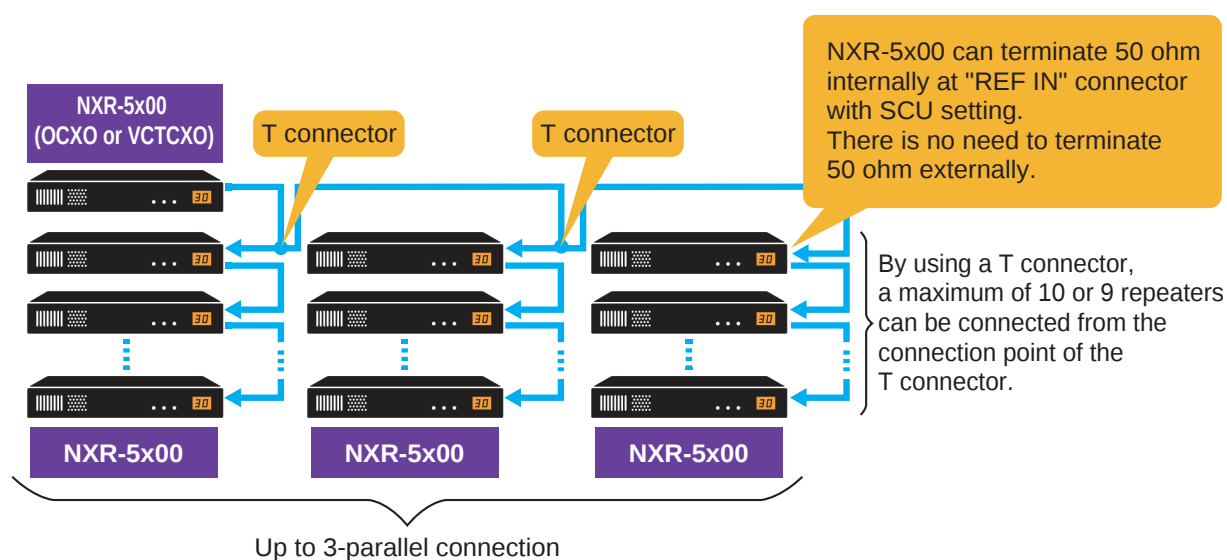


Figure 3-57 Connection of Path for Providing External Reference Signals (Site Structure of NXR-5x00 Only)

Precautions for a site where the combination of NXR-5x00 and NXR-x00 is used

- 1) To add NXR-5x00 to an existing site structured with NXR-x00, connect NXR-5x00 to the output terminal of NXR-x00 for the external reference signal connection. Do not connect NXR-x00 to the output terminal of NXR-5x00.

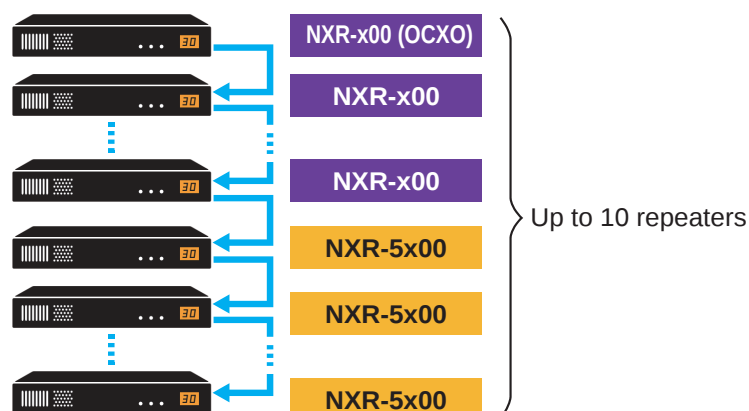
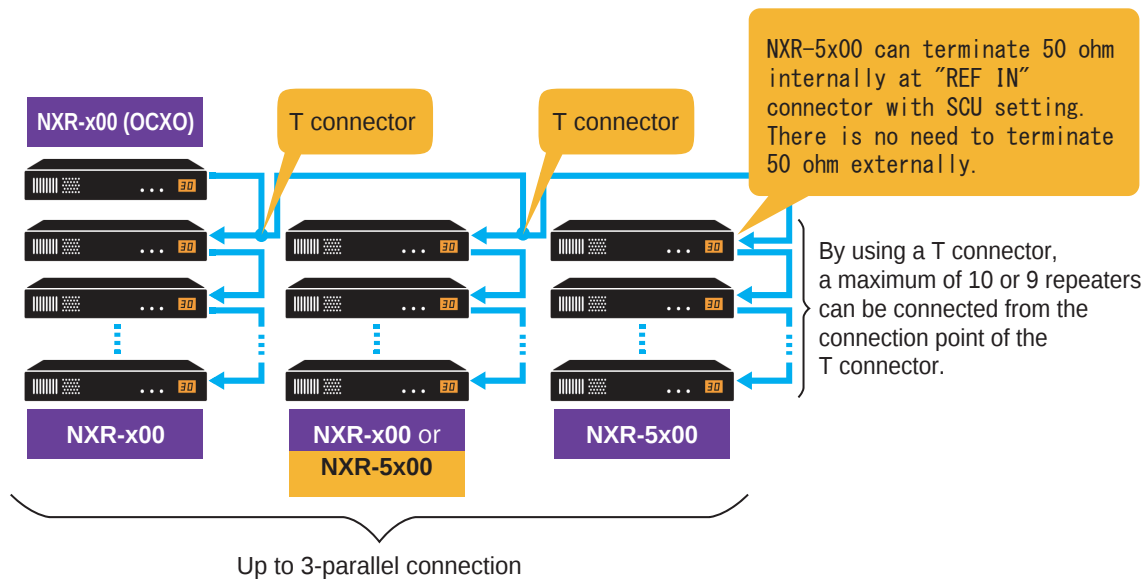


Figure 3-58 Connection of Path for Providing External Reference Signals (Site Structure Where NXR-x00 and NXR-5x00 Coexist)

- 2) To add NXR-5x00 to a site that uses 11 NXR-x00 units or more, the 2nd or 3rd repeater to be connected by using a T connector needs to be NXR-5x00. For NXR-5x00, configuring "ON" in **50 Ohm Termination** by using SCU can terminate the "REF IN" connector at a 50 ohm termination in a repeater. In a system structured with NXR-x00, if a 50 ohm termination exists outside a repeater, the external terminator can also be used.



**Figure 3-59 Connection of Path for Providing External Reference Signals
(Site Structure Where NXR-x00 and NXR-5x00 Coexist) (11 or more)**

- 3) To structure a site for NXR-x00 and NXR-5x00 to coexist, configure "ON" in **Adjusted Boot Timing** by using SCU.
Start NXR-5x00 by the timing to start NXR-x00.

Note

- For NXR-5900/ NXR-5901, the startup time is not extended even if "ON" is configured in this function. Configuring "5min" in **Startup Delay** allows the timing of startup to match NXR-900/ NXR-901.

- 4) If the frequency of each repeater is not synchronized and if Digital Narrow mode is configured in a site structured only with NXR-x00, connect NXR-5x00 as shown in the diagram below:

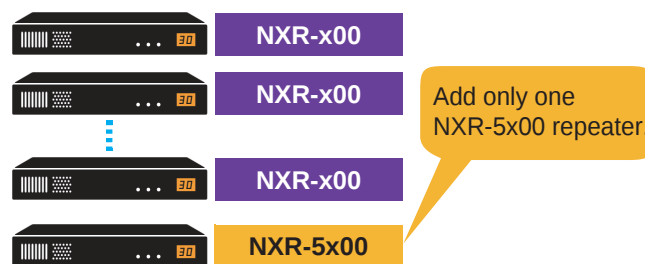


Figure 3-60 Connection in Digital Narrow Mode (if adding a single NXR-5x00 unit)

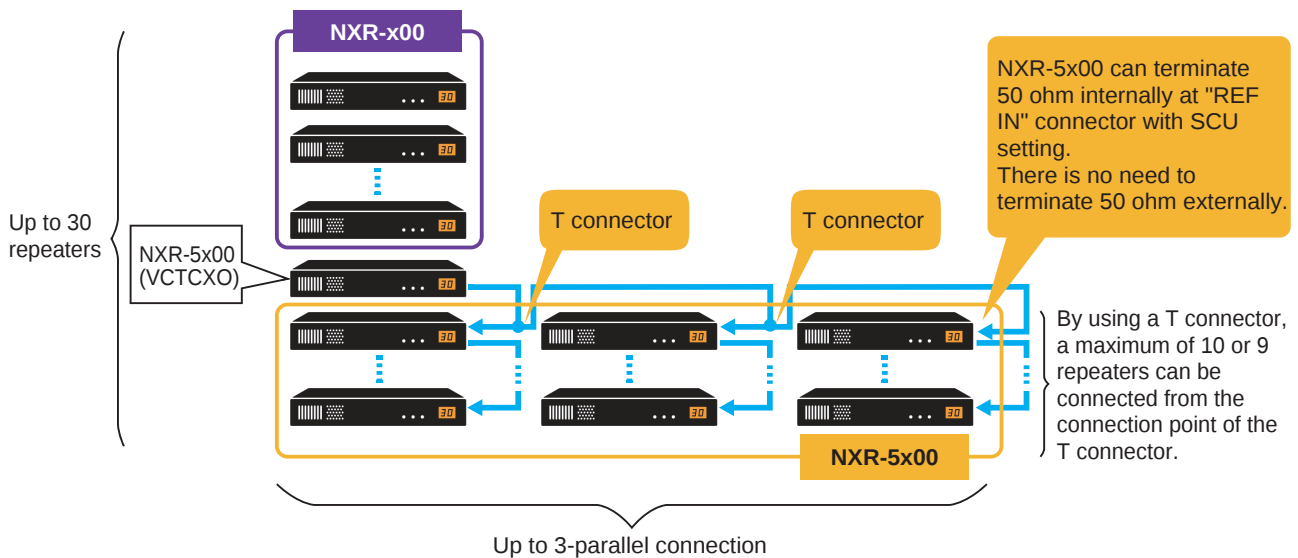


Figure 3-61 Connection in Digital Narrow Mode
(the connection of external reference signals if adding multiple NXR-5x00 units)

If NXR-5x00 is added in Digital Narrow mode, the first part of a communication may not be communicated in a weak electric field. Therefore, adding the OCXO to NXR-x00 and synchronizing the frequency of all repeaters, including the frequency of the NXR-5x00 to be added, is recommended. If installation of OCXO is difficult, synchronizing the frequency of all repeaters by the VCTCXO of NXR-5x00 like Figure 3-57 is recommended. If frequency synchronization for the existing NXR-x00 is difficult, always add NXR-5x00 to a site after frequency synchronization for all NXR-5x00 units.

Note

- Frequency synchronization is not required if only a single NXR-5x00 unit is to be added to a site structured with NXR-x00.
- If multiple NXR-5x00 units are to be added to a site structured with NXR-x00, always synchronize the frequency of all NXR-5x00 units to be added. The built-in VCTCXO of NXR-5x00 is used as the external reference signal for synchronizing the frequency.
- Refer to [Connection of the system structured only with NXR-5x00 on page 39](#) for the procedure to connect the external reference signal of multiple NXR-5x00 units.

Connection of a LAN Cable

A repeater or controller in a site connects with a Ethernet cable (CAT5 or better) via a hub.

Use a 100BASE-TX switching hub for the hub. Use a port of the switching hub to be connected to NXR-5x00/ NXR-x00 by enabling Auto-negotiation.

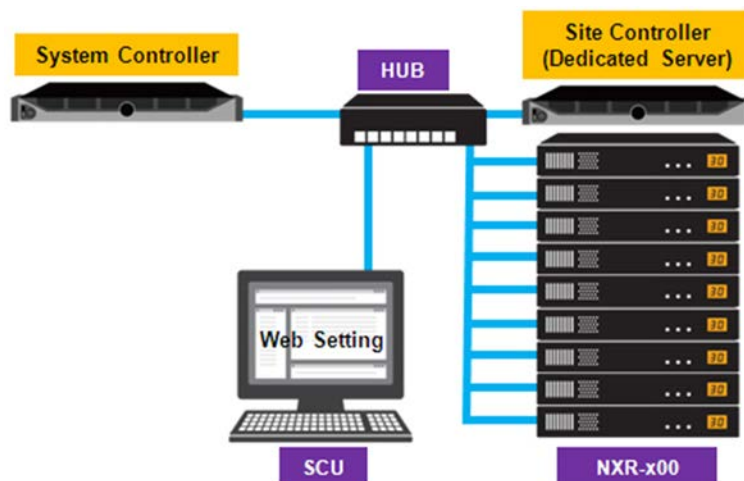


Figure 3-62 Connection of a LAN Cable

About CompactFlash Card (NXR-x00 Only)

To use the SNMP function for NXR-x00, a CompactFlash card needs to be attached to each repeater by following the procedure below. Also, firmware V1.40.00 or later is required for the repeater to use the SNMP function.

Note

- To use the SNMP function for NXR-5x00, the attachment of a CompactFlash card is not required.

1 Prepare the CompactFlash card.

Prepare 1 CompactFlash card for 1 NXR-x00 repeater using the SNMP function.

2 Confirm the format of the CompactFlash card.

From the properties screen of the Removable Disk (the CompactFlash card drive) on Windows, confirm that the CompactFlash card is formatted in the FAT format or FAT32 format.

If the CompactFlash card is not formatted, or if the CompactFlash card is formatted in a format other than the FAT/FAT32 format, format the CompactFlash card in the FAT/FAT32 format.

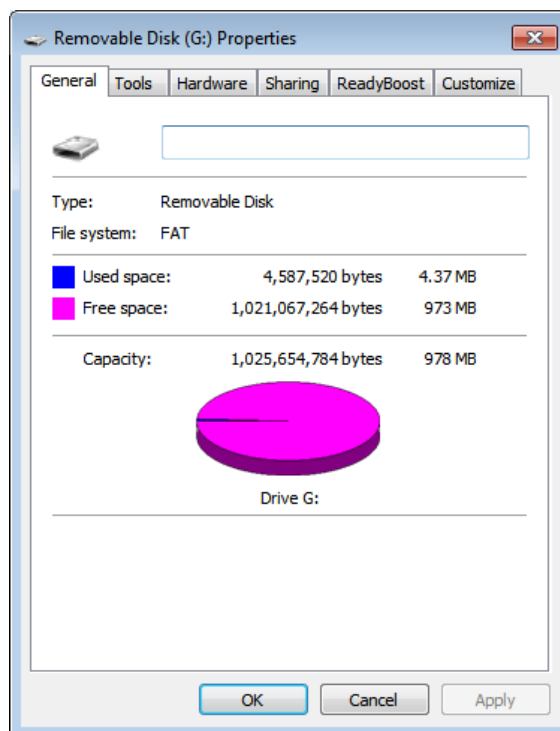


Figure 3-63 Removable Disk Properties

3 Copy the files to the CompactFlash card.

On the drive such as on the desktop, extract the CompactFlash card image file that supports SNMP, and copy the “etc”, “usr”, and “var” folders to Removable Disk.

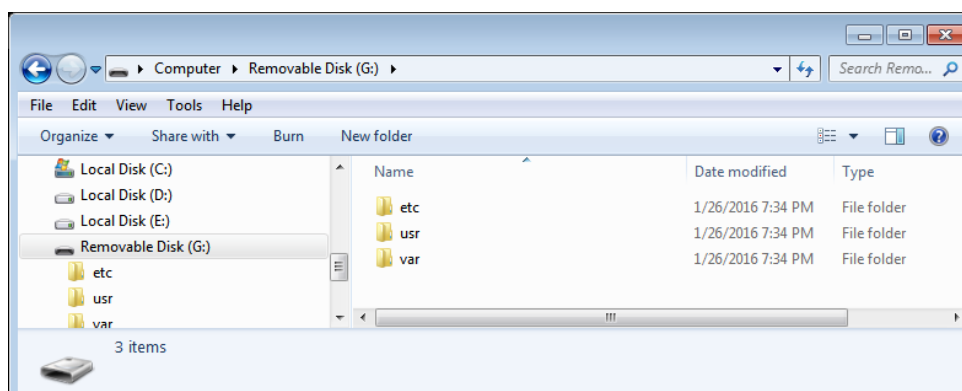


Figure 3-64 Removable Disk

4 Attach the CompactFlash card to the repeater.

Refer to NXR-x00 In Depth Manual (CSI Edition) for how to attach a CompactFlash card.

Note

- Information, such as communication records, is managed centrally by System Controller in a NEXEDGE 2nd Generation system. Therefore, attaching a CompactFlash card to each repeater (site) is not required if the SNMP function is not used.

Communication Confirmation in Site Trunking Mode

Connection of a Device

A repeater and a Site Controller connects to the same network as System Controller.

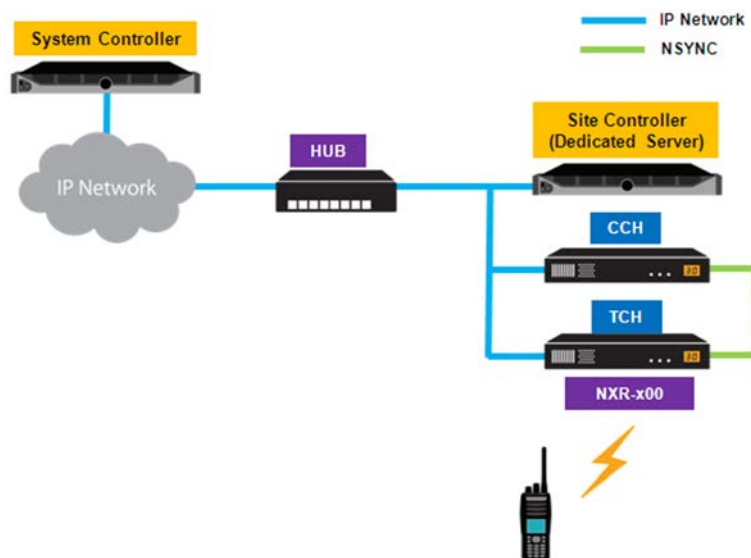


Figure 3-65 Connection of a Device

Operation of a Site

After connecting to a System Controller, overwriting of firmware for Site Controller and repeater and overwriting of configuration data automatically occurs as required, and then the site starts the site behavior. If “Off” is configured in **Valid** in **Site Information** of SCU, this site functions in Site Trunking Mode.

Connectivity Test of a Subscriber Unit

Checking communication with a subscriber unit in this state, the connection amongst a System Controller, Site Controller and repeater is checked.

Beforehand, a subscriber unit must be configured to match the site configuration.

● Control Channel Configuration

Start a subscriber unit, and check whether Registration is successful with a Site Number configured in Control Channel and behaving normally.

If not behaving normally, check the configurations of frequency tables and Channel Spacing, the configuration related to the control channel hunt for a subscriber unit, and the radio environment.

● Traffic Channel Configuration

In Maintenance Mode, check whether communication is enabled on the channel configured as the communication channel. Check that sequential communication is assigned to all channels by repeatedly communicating from a subscriber unit.

If unable to communicate, check the configurations of frequency tables and Channel Spacing, and the radio environment.

If **Trunking Type** is “Message Trunked”, check that communication in **Hold Timer** is completed before repeating the next communication.

3.7 STEP 6: Registration of a Subscriber Unit

A subscriber unit is registered in the following steps: First, Class of Service defined with the functionality permitting use of a UID or GID registered in a system is configured. Next, the Fleet that is the assembly of UIDs and GIDs is added. Afterwards, UIDs and GIDs used in a system are registered to the Fleet. Class of Service can be individually configured to a Fleet unit, and each specific UID or GID.

Registration of COS

The following Class of Service (COS) required for regular functionality to occur are configured:

- UID COS
- GID COS
- All Groups Call COS

The following COS are configured considering whether a site cannot connected to a System Controller, such as with a disconnected IP address.

- Secondary UID COS
- Secondary GID COS

Configuration of UID COS

UID COS defined with the functionality permitting use of a UID is added.

- 1 Click **UID COS List** on the navigation menu, and then click the “Add” button.

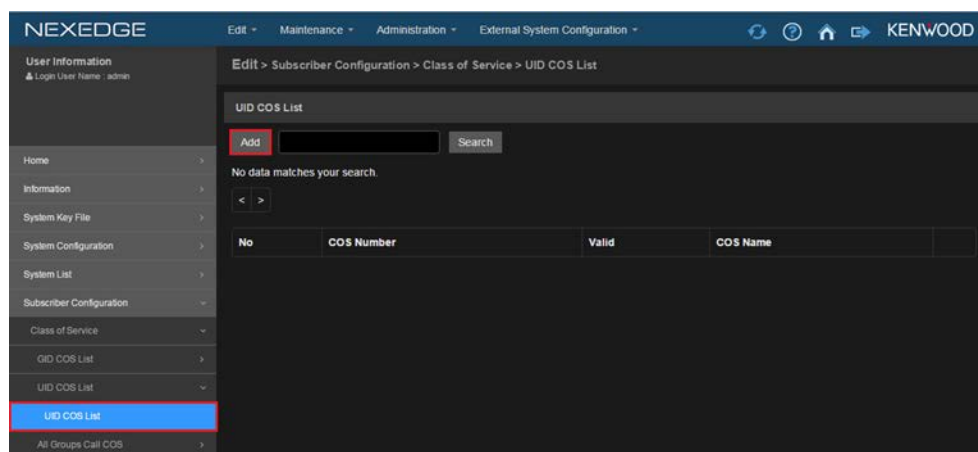


Figure 3-66 UID COS List

General (Add) appears.

2 Configure the following in **General (Add)**:

- Select a random value in **COS Number**.
- Configure **Valid** "ON".
- By entering a random text string in **COS Name**, the added COS can be named. **COS Name** can be entered as a maximum of 32 alphanumeric characters and symbols.

General

COS Number 2

Valid ON

COS Name UID COS 2

Comment

Late Entry ON

Queue Level 8

Time-out Timer [s] 60

Individual Call Response Type (Voice) Response

Individual Call Response Type (Data) Response

Figure 3-67 General (Add)

3 In **Available Calls**, enable communication permitted to use a UID.

Available Calls

Group Call ON

Individual Call ON

Voice Call ON

Status Call ON

Short Data Call ON

Long Data Call ON

All Groups Call ON

Figure 3-68 Available Calls

The preceding is the basic configuration in a UID COS addition. Configure other functions as needed. Click the "Save" button after configuration.

All Groups Call ON

Telephone

Queue Level 8

Incoming Call from Telephone Line OFF

Outgoing Call to Telephone Line OFF

Save Back

Figure 3-69 Save

Clicking the “Save” button to save the configuration restores the **UID COS List**. Check that the added UID COS is shown. Also, check that **Valid** is configured “ON”.

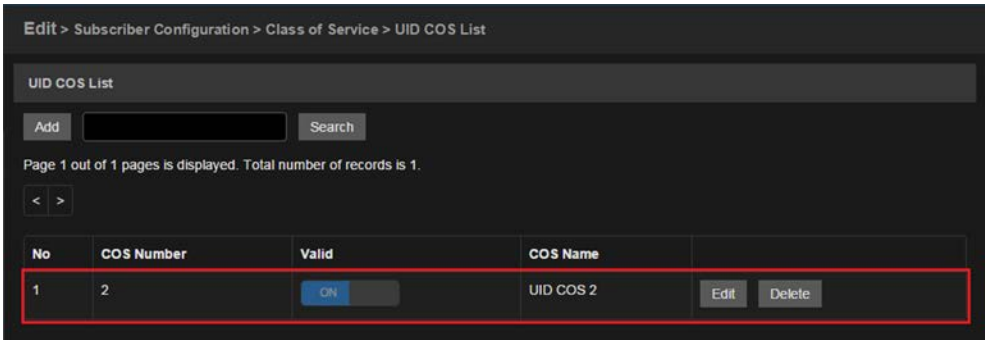


Figure 3-70 UID COS List

Configuration of GID COS

GID COS defined with a function permitted to use a GID is added. After adding GID COS, Intersite Call is configured for selecting a site that uses GID.

- 1
- Click **GID COS List** on the navigation menu, and then click the “Add” button.

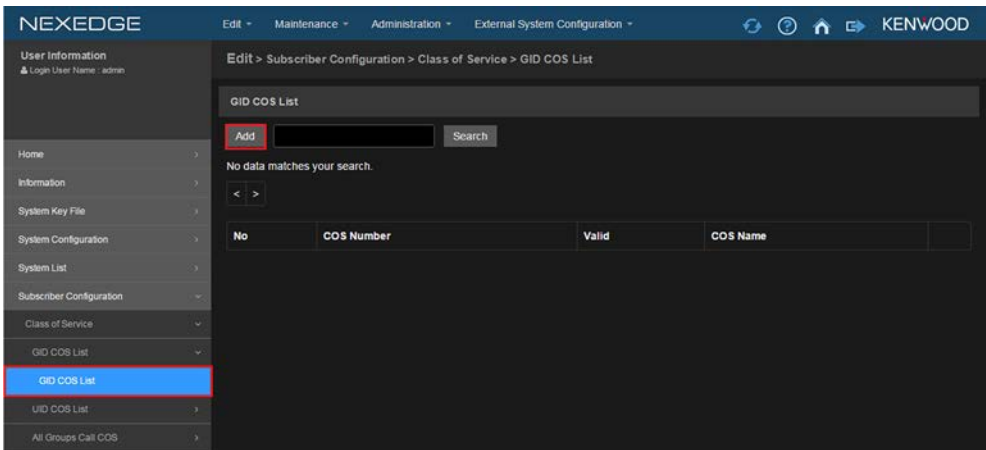


Figure 3-71 GID COS List

General (Add) appears.

2 Configure the following in **General (Add)**:

- Select a random value in **COS Number**.
- Configure **Valid** "ON".
- By entering a random text string in **COS Name**, the added COS can be named. **COS Name** can be entered as a maximum of 32 alphanumeric characters and symbols.

Figure 3-72 General (Add)

3 In **Available Calls**, enable communication permitted to use a GID.

Figure 3-73 Available Calls

The basic configuration in a GID COS addition is above. Configure other functions as needed. Click the "Save" button after configuration.

Figure 3-74 Save

3.7 STEP 6: Registration of a Subscriber Unit

Clicking “Save” to save the configuration restores the **GID COS List**. Check that the added GID COS is shown. Also, check that **Valid** is configured “ON”. Next, Intersite Call is configured.

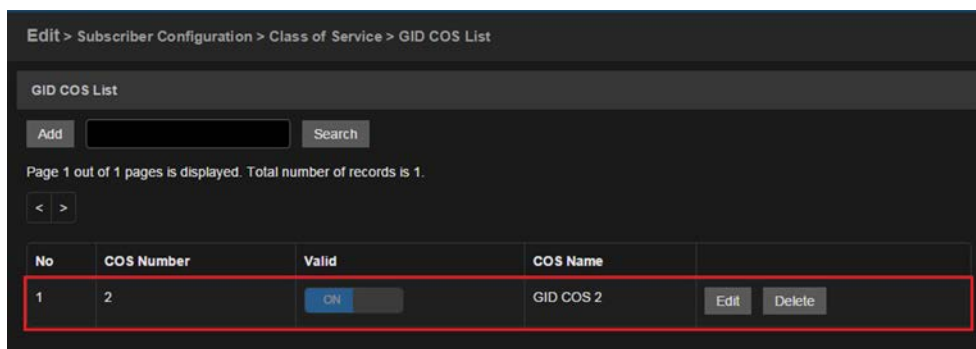


Figure 3-75 GID COS List

4 Click the “Edit” button in **GID COS List**.

5 Click **Intersite Call List** on the navigation menu.

Intersite Call List appears.

6 Select the system to configure Intersite Call, and then click the “Edit” button.

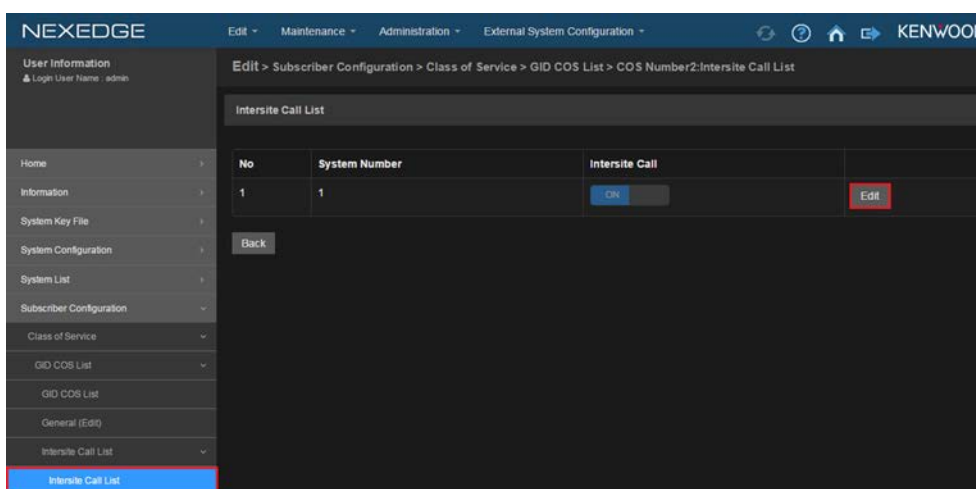


Figure 3-76 Intersite Call List

The configuration screen of **Intersite Call** appears.

7 Configure **Intersite Call** “ON” if permitting communications between sites.

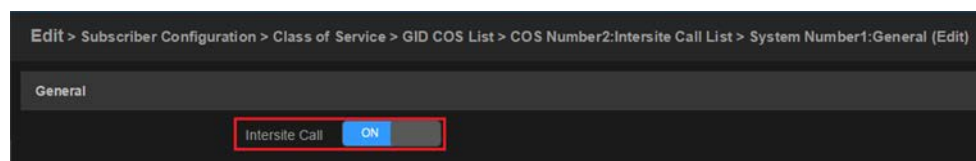


Figure 3-77 Intersite Call

8 In **Available Sites**, configure the sites to use GID.

If **Intersite Call** is enabled, a Group Call is delivered to sites configured in **Available Sites**. If **Dynamic Allocation** is enabled, an Intersite Call can be undelivered to a site when no subscriber unit is in the Registration of the corresponding GID, even if the site uses GID.

No.	Site	Dynamic Allocation
1	None	OFF
2	None	OFF
3	None	OFF
4	None	OFF
5	None	OFF
6	None	OFF
7	None	OFF
8	None	OFF
9	None	OFF

Figure 3-78 Available Sites

Configure other functions as needed.

9 Click the “Save” button after configuration.

26	None	OFF
27	None	OFF
28	None	OFF
29	None	OFF
30	None	OFF

Save Cancel Back

Figure 3-79 Save

Configuration of All Groups Call COS

In the UID COS configuration, the configuration of All Groups Call COS is required if the use of All Groups Call is to be permitted.

1 Click **All Groups Call COS** > **General** on the navigation menu.

2 In **Available Calls**, enable communication permitted to be used in an All Groups Call.

Configure other functions as needed.

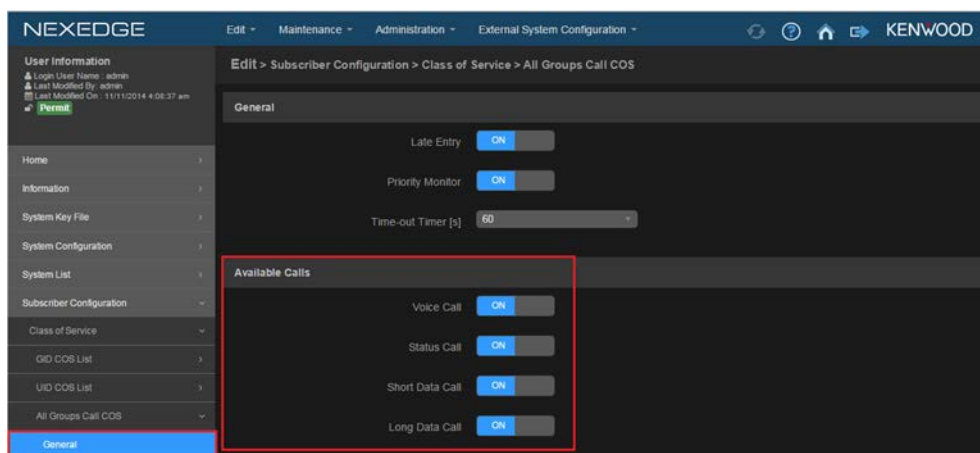


Figure 3-80 Available Calls

3 Click the “Save” button after configuration.

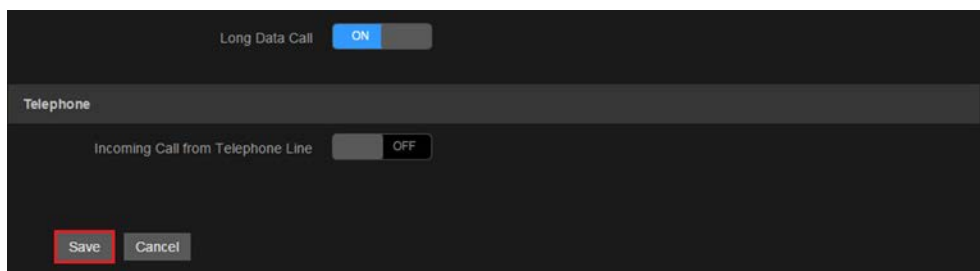


Figure 3-81 Save

Next, Intersite Call in an All Groups Call is configured.

4 Click **Intersite Call List** on the navigation menu.

Intersite Call List appears.

5 Select the system to configure Intersite Call, and then click the “Edit” button.

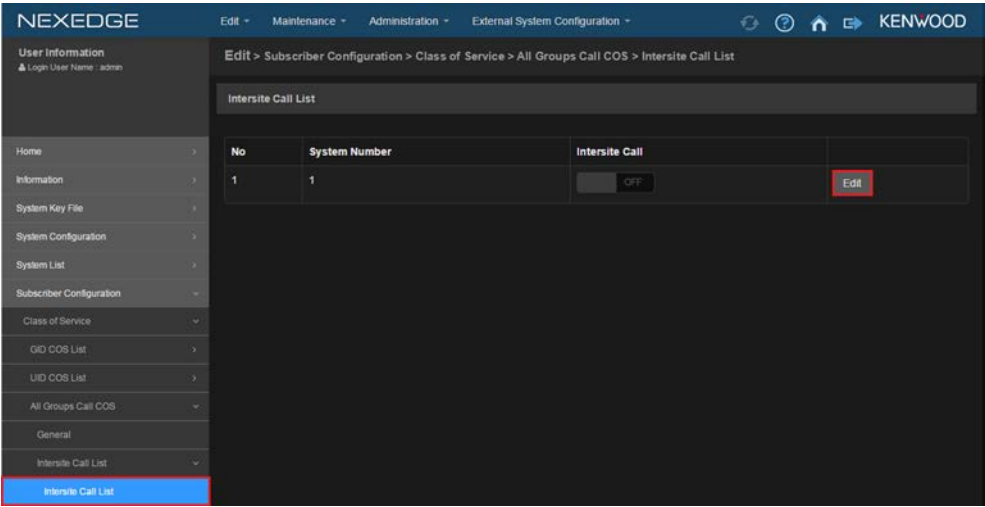


Figure 3-82 Intersite Call List

The configuration screen of **Intersite Call** appears.

6 Configure **Intersite Call** “ON” if permitting All Groups Call communications between sites.

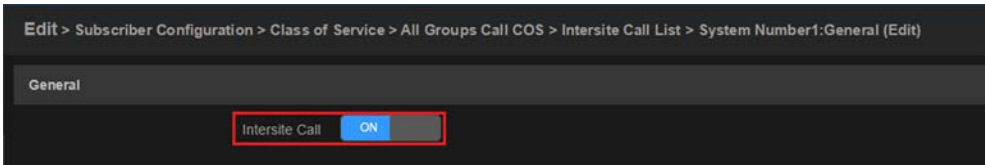


Figure 3-83 Intersite Call

7 In **Available Sites**, configure the sites to use All Groups Call.

If **Intersite Call** is enabled, an All Groups Call is delivered to sites configured in **Available Sites**.

No.	Site
1	None
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None
11	None

Figure 3-84 Available Sites

Configure other functions as needed.

8 Click the “Save” button after configuration.

27	None
28	None
29	None
30	None

Save Cancel Back

Figure 3-85 Save

Configuration of Secondary UID COS

Secondary UID COS configures a function permitted to use a UID when a site is in a state where the site cannot connect to System Controller.

- 1 Click **Secondary UID COS** on the navigation menu.

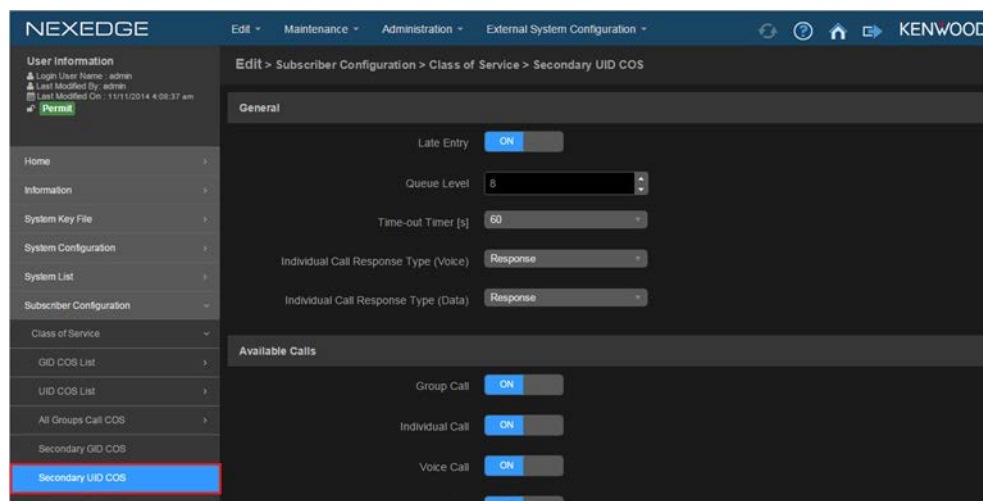


Figure 3-86 Secondary UID COS

- 2 In **Available Calls**, enable the communication permitted to use a UID when a site is in a state where the site cannot connect to System Controller.

Configure other functions as needed.

- 3 Click the “Save” button after configuration.

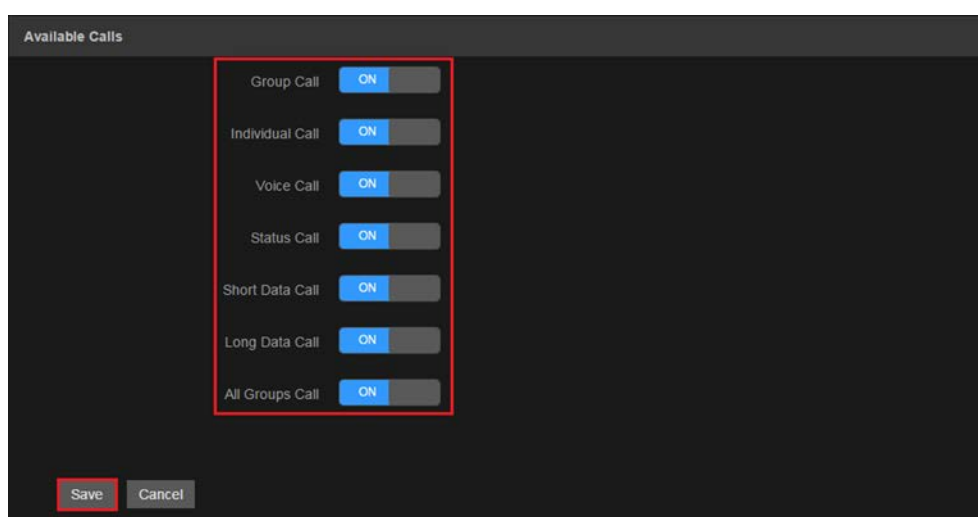


Figure 3-87 Save

Configuration of Secondary GID COS

Secondary GID COS configures a function permitted to use a GID when a site is in a state where the site cannot connect to System Controller.

- 1 Click **Secondary GID COS** on the navigation menu.

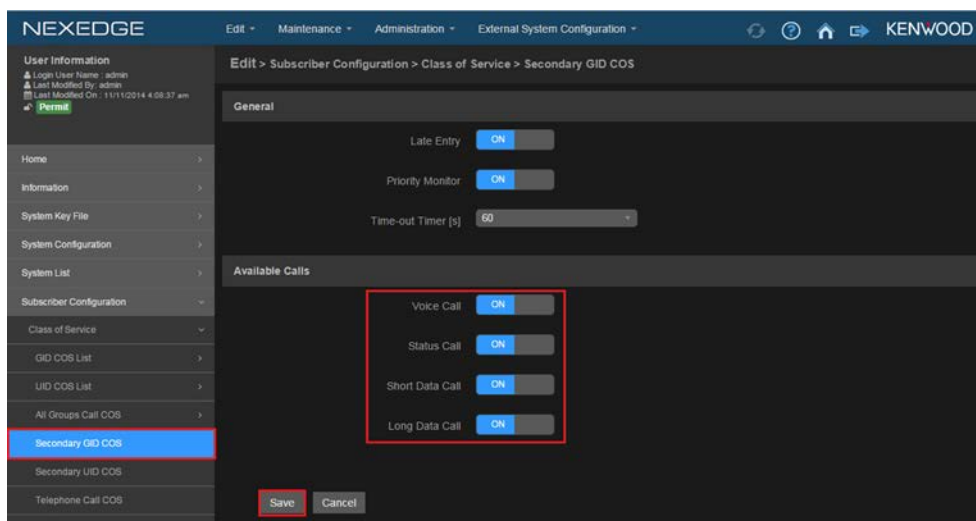


Figure 3-88 Secondary GID COS

- 2 In **Available Calls**, enable the communication permitted to use a GID when a site is in a state where the site cannot connect to System Controller.

Configure other functions as needed.

- 3 Click the “Save” button after configuration.

Registration of Fleet

Configurations related to Fleet that is the assembly of UID and GID is configured. UID and GID are managed as Fleet units. Therefore, UID and GID always belong to one of the Fleet.

Addition of Fleet

Fleet is added.

- 1 Click **Fleet List** on the navigation menu, and then click the “Add” button.

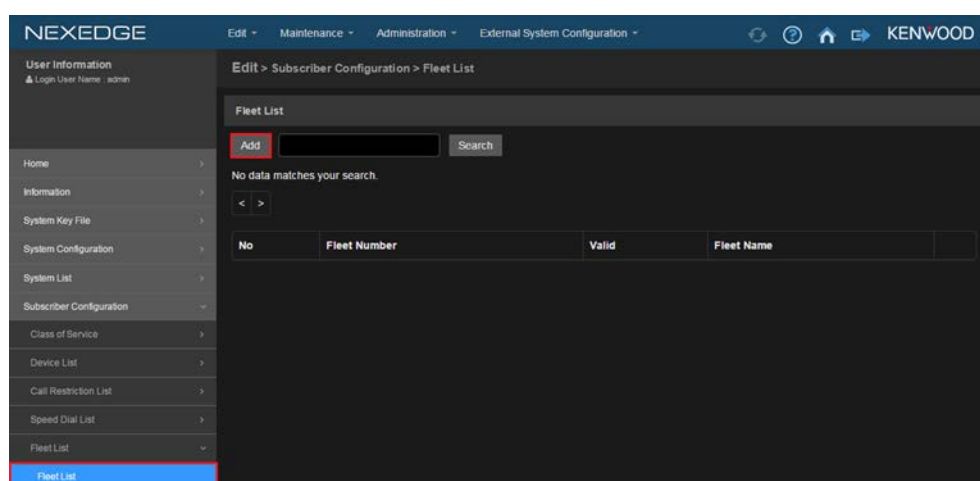


Figure 3-89 Fleet List

General (Add) appears.

- 2 Configure the following in General (Add):

- Select a random value in **Fleet Number**.
- Configure **Valid** “ON”.
- By entering a random text string in **Fleet Name**, the added Fleet can be named. **Fleet Name** can be entered as a maximum of 32 alphanumeric characters and symbols.
- Configure the **Home System**. Configuring the System Controller mainly used as the subscriber unit in Fleet as the **Home System** is recommended.
- The default GID COS assigned a GID registered to Fleet is selected in **Common Class of Service (GID)**.
- The default UID COS assigned a UID registered to Fleet is selected in **Common Class of Service (UID)**.

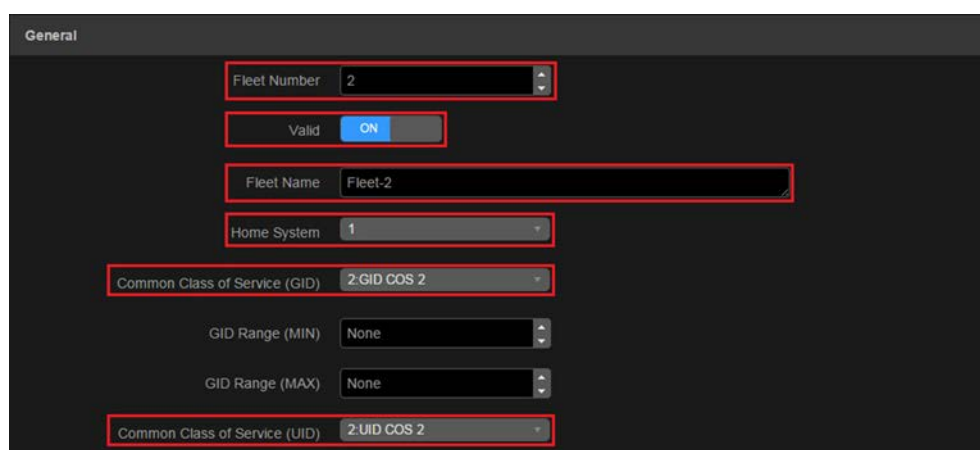


Figure 3-90 General (Add)

If “Default” is selected for the following **General** items, a system behaves in accordance to configurations in **Edit > System Configuration**. Only if each Fleet is to behave differently from the configuration of **System Configuration**, change the following items to a configuration other than “Default”:

- Trunking Type
- Group Registration Reset Timer
- NXDN ESN Validation
- Unauthorized ESN Detection
- NXDN ESN Validation Reset Time

Configure other functions as needed.

3 Click the “Save” button after configuration.

A screenshot of a configuration interface with a dark background. Several dropdown menus are highlighted with red rectangles: 'Trunking Type' (Default), 'Group Registration Reset Timer [h]' (Default), 'NXDN ESN Validation' (Default), 'Unauthorized ESN Detection' (Default), and 'NXDN ESN Validation Reset Time' (Default). Other fields include 'Call Restriction Table Number' (None), 'Speed Dial Table Number' (None), 'Customer Name', 'Customer Address', 'Customer Phone', 'Channel Allocation' (None), 'GPS Report Format' (None), 'GPS Report Interval [s]' (384), and 'Priority Subscriber Class' (General). At the bottom, the 'Save' button is highlighted with a red rectangle, next to 'Cancel' and 'Back' buttons.

Figure 3-91 Save

Clicking the “Save” button to save the configuration restores the **Fleet List**. Check that the added Fleet is shown.

A screenshot of the 'Fleet List' interface. At the top, it says 'Edit > Subscriber Configuration > Fleet List'. Below is a header 'Fleet List' and an 'Add' button. A search bar is present. Below the search bar, it says 'Page 1 out of 1 pages is displayed. Total number of records is 1.' There are navigation arrows. A table with 5 columns is shown: 'No', 'Fleet Number', 'Valid', 'Fleet Name', and an empty column. The first row is highlighted with a red rectangle and contains: '1', '2', 'ON' (with a toggle switch), 'Fleet-2', and 'Edit' and 'Delete' buttons.

No	Fleet Number	Valid	Fleet Name	
1	2	ON	Fleet-2	Edit Delete

Figure 3-92 Fleet List

Registration of UID

UIDs used in a system are registered to the Fleet.

- 1
- Select the Fleet to register a UID from [Edit > Subscriber Configuration > Fleet List](#), and then click the “Edit” button.

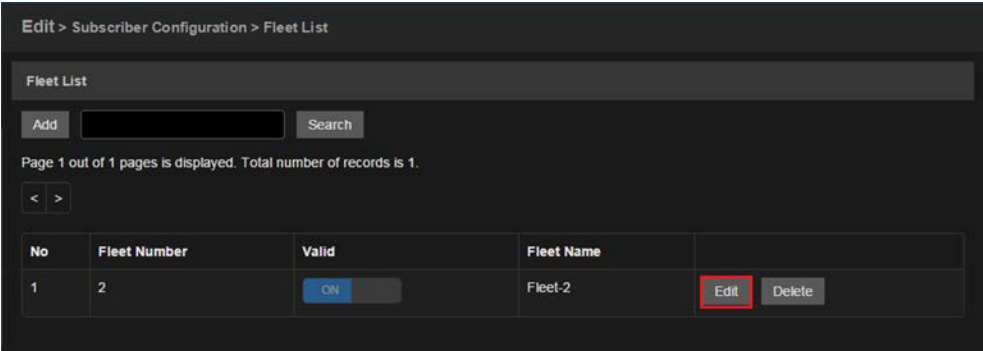


Figure 3-93 Fleet List

- 2
- Click [UID List](#) on the navigation menu, and then click the “Add” button.

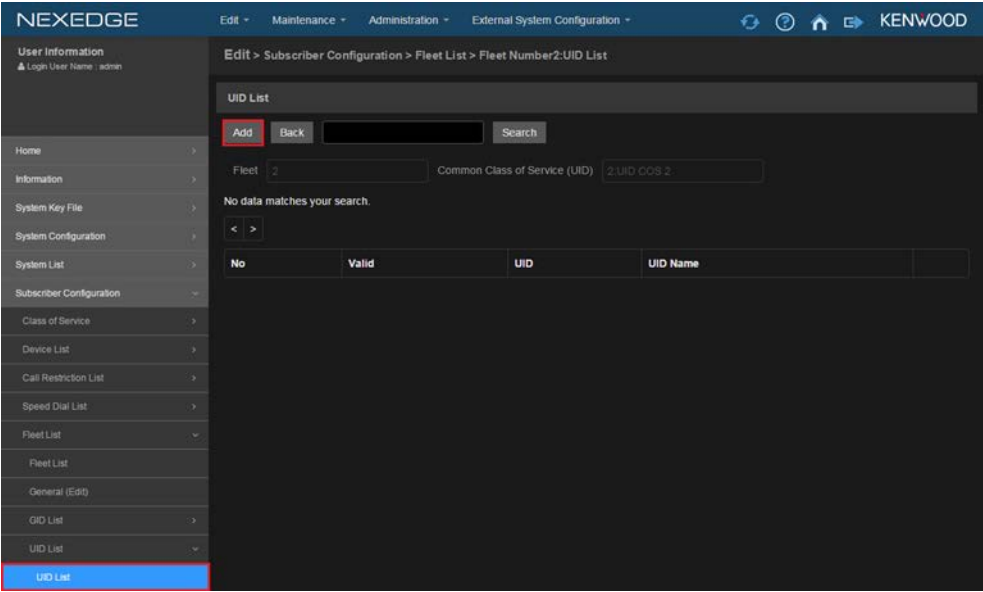


Figure 3-94 UID List

General (Add) appears.

3 Configure the following in **General (Add)**:

- Configure **Valid** “ON”.
- Select the ID number to be registered in **UID**.
- By entering a random text string in **UID Name**, the registered UID can be named. **UID Name** can be entered as a maximum of 32 alphanumeric characters and symbols.

If “Common” is selected in **UID Class of Service**, the function permitted by **Common Class of Service (UID)** configured in Fleet can be used in the corresponding UID. Only when permitting the function different from **Common Class of Service (UID)** for a specific UID, change **UID Class of Service** to a configuration other than “Common”. Configure other functions as needed.

4 Click the “Save” button after configuration.

Figure 3-95 Save

Clicking the “Save” button to save the configuration restores the **UID List**. Check that the added UID is shown.

Figure 3-96 UID List

If further registering a UID, click the “Add” button again and repeat the steps above. Register the required number of UIDs.

Registration of GID

GIDs used in a system are registered to the Fleet.

- 1
- Select the Fleet to register a GID from **Edit > Subscriber Configuration > Fleet List**, and then click the “Edit” button.

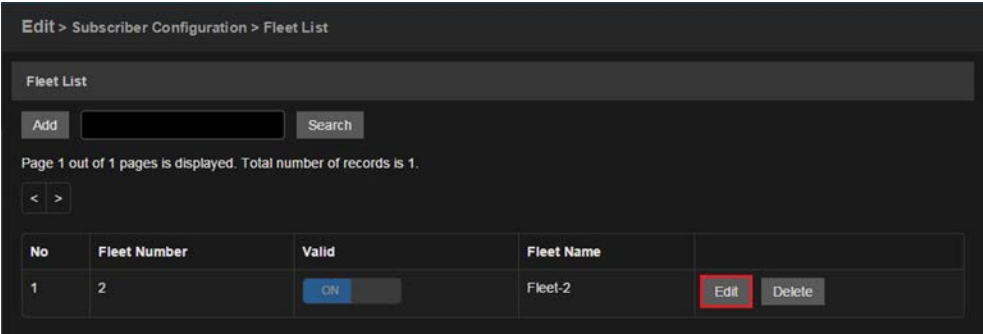


Figure 3-97 Fleet List

- 2
- Click **GID List** on the navigation menu, and then click the “Add” button.

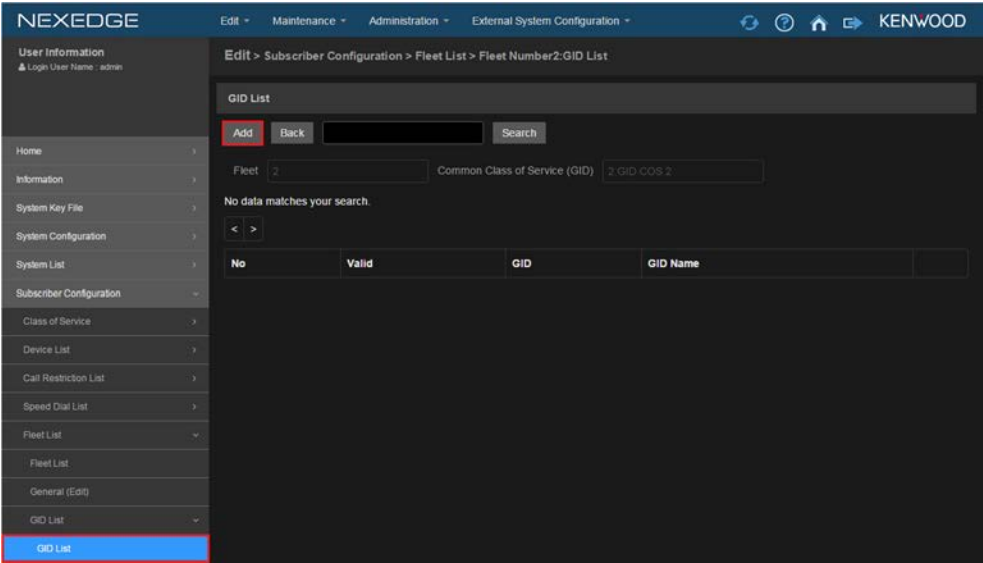


Figure 3-98 GID List

General (Add) appears.

3 Configure the following in **General (Add)**:

- Configure **Valid** “ON”.
- Select the ID number to be registered in **GID**.
- By entering a random text string in **GID Name**, the registered GID can be named. **GID Name** can be entered as a maximum of 32 alphanumeric characters and symbols.

If “Common” is selected in **GID Class of Service**, the function permitted by **Common Class of Service (GID)** configured in Fleet can be used in the corresponding GID. Only when permitting the function different from **Common Class of Service (GID)** for a specific GID, change **GID Class of Service** to a configuration other than “Common”.

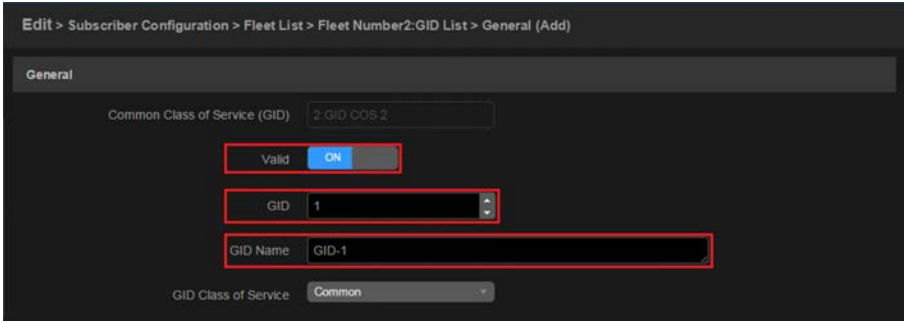


Figure 3-99 General (Add)

Configure other functions as needed.

4 Click the “Save” button after configuration.

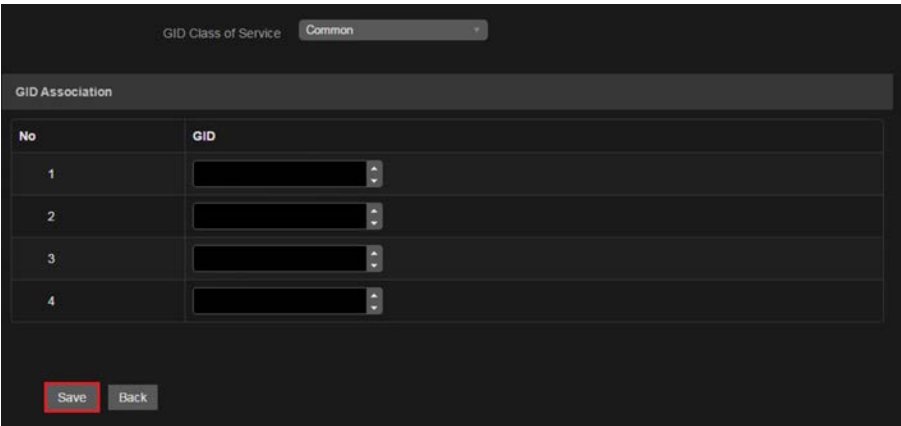


Figure 3-100 Save

Clicking the “Save” button to save the configuration restores the **GID List**. Check that the added GID is shown.

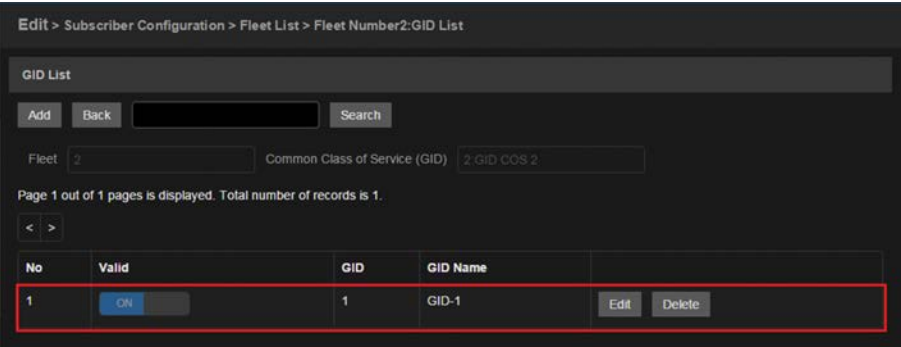


Figure 3-101 GID List

If further registering a GID, click the “Add” button again and repeat the steps above. Register the required number of GIDs.

3.8

STEP 7: Connection of the System

Participation of a Site in System Controller

First, connect the added site to the network, and then enter the site in a state to be able to communicate with System Controller. After this, configurations are changed to enable the added site in a system.

- 1
- Select the system added with the site from [Edit > System List](#), and then click the “Edit” button.

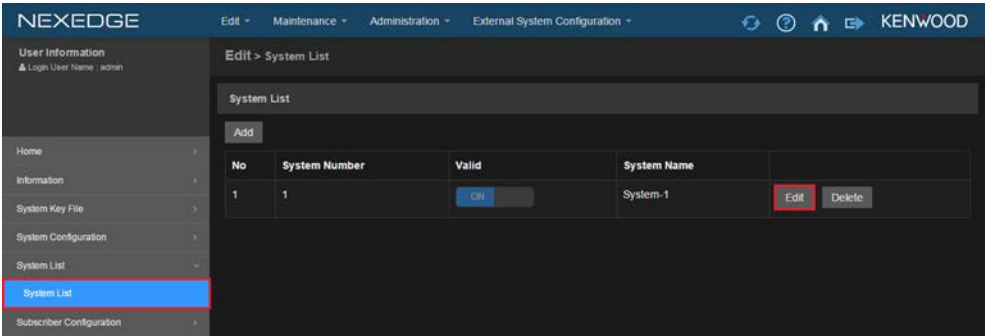


Figure 3-102 System List

- 2
- Click [Site List](#) on the navigation menu, select the added site, and then click the “Edit” button.

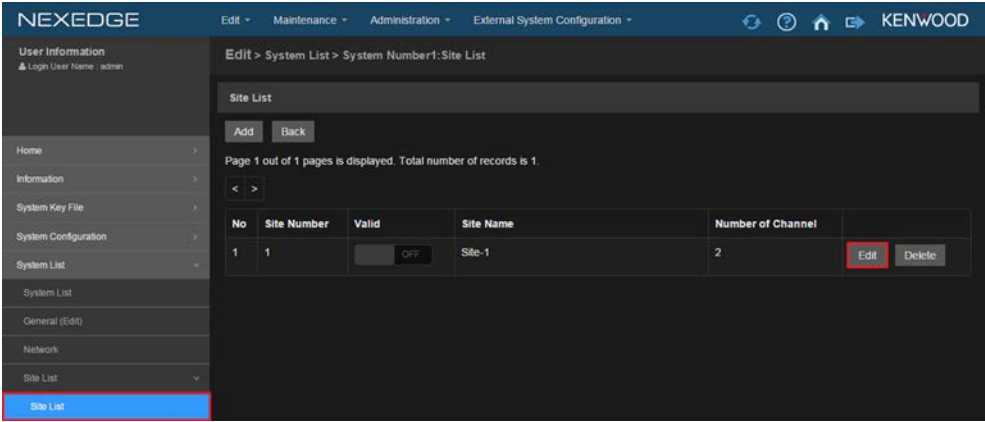


Figure 3-103 Site List

The configuration screen of a site appears.

3 Configure **Valid** “ON” in **Site Information**.

Site Information

Site Number: 1

Valid: **ON**

Site Name: Site-1

Number of Channel: 2

Channel Table Number: Default

Power-on Standby: **ON**

Station ID Inhibit: **ON**

Adjusted Boot Timing: OFF

Figure 3-104 Site Information

4 Click the “Save” button.

Secondary Channel Number: 2

Time Settings

System Default: **ON**

Time Zone: UTC

Daylight Saving Time: OFF

Start Date:

Start Time: : 00

End Date:

End Time: : 00

Save Cancel Back

Figure 3-105 Save

After the configuration changes above, participation of the added site in System Controller is checked by a communication test.

Communication Test

A communication test is initiated to confirm that the added site is being recognized by System Controller. Check regarding the following items:

- Registration of registered UID and GID for the added site.
- Communications permitted in UID COS and GID COS, such as Voice Call and Long Data Call, are enabled for the added site.
- If use of Intersite Call is permitted, communications are enabled from the added site to other sites, and from other sites to the added site.

If there are no problems with the behaviors noted above, the added site can correctly participate with System Controller.

If the behavior of a subscriber unit in the added site is not as intended, a configuration may have been missed or the network connection to System Controller may not be correct. In this case, re-examine the configurations and check the network connection.

3.9 STEP 8: Connection of an IP Gateway

Configuration of an IP Gateway

Adding an IP Gateway to System Controller

- 1
- Click the “Edit” button of the System from Edit > System List, and then click IP Gateway List on the navigation menu.

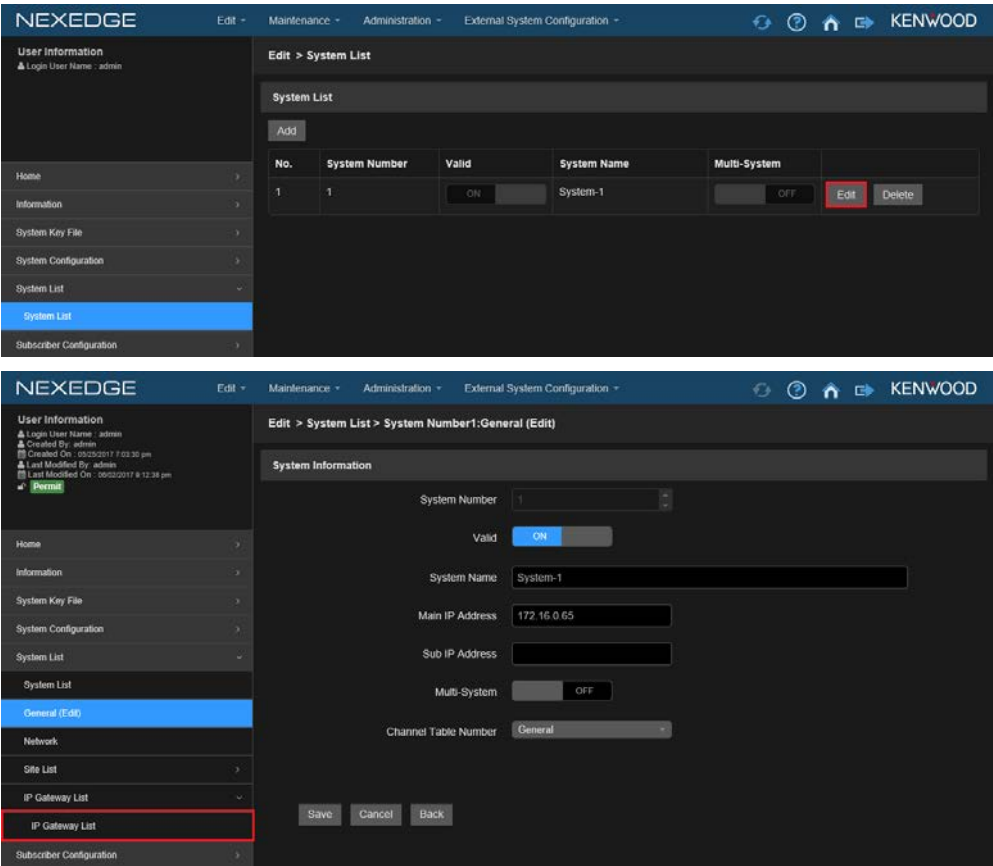


Figure 3-106 System List

- 2
- Click the “Add” button of IP Gateway List, and create a new IP Gateway.

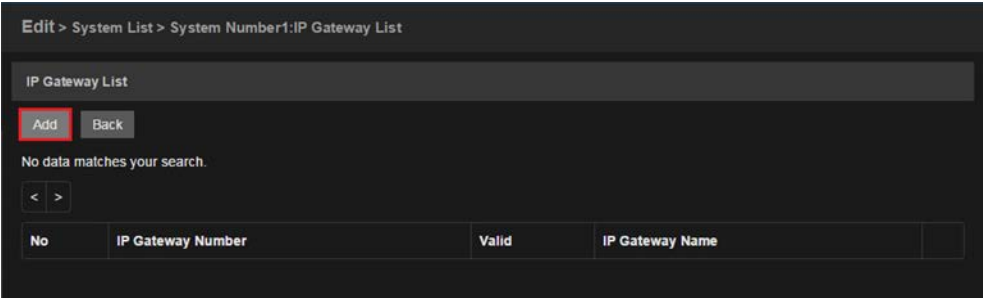


Figure 3-107 IP Gateway List

Detailed Configuration of an IP Gateway

When creating a new IP Gateway, the details of the IP Gateway are configured in **Edit > System List > System Numberxx:IP Gateway List > General (Add)**.

- 1** Enable **Valid** of the device.
- 2** In **IP Address**, enter the IP address of the IP Gateway Server.
- 3** In **IP Gateway Number**, enter the IP Gateway Server number.
 Although a number from 1 to 240 can be configured when creating a new IP Gateway in **IP Gateway Number**, configure an **IP Gateway Number** from 1 to 48 if continuing to use a device developed until now in a NEXEDGE 1st Generation system (such as KAS-10/ OTAP/ KTI-4).
IP Gateway Name can be entered as a maximum of 32 alphanumeric characters and symbols.
- 4** Click the “Save” button after input is completed.

Figure 3-108 General (Add)

A newly created IP Gateway is displayed in **IP Gateway List**.

No	IP Gateway Number	Valid	IP Gateway Name	
1	1	ON	IP Gateway-1	Edit Delete
2	2	ON	IP Gateway-2	Edit Delete

Figure 3-109 IP Gateway List

If further registering an IP Gateway, click the “Add” button again and repeat the steps above. Register the required number of IP Gateways.

Configuration of Device List

Add a Device to Device List

Newly create a device by clicking the “Add” button of **Edit > Subscriber Configuration > Device List**.

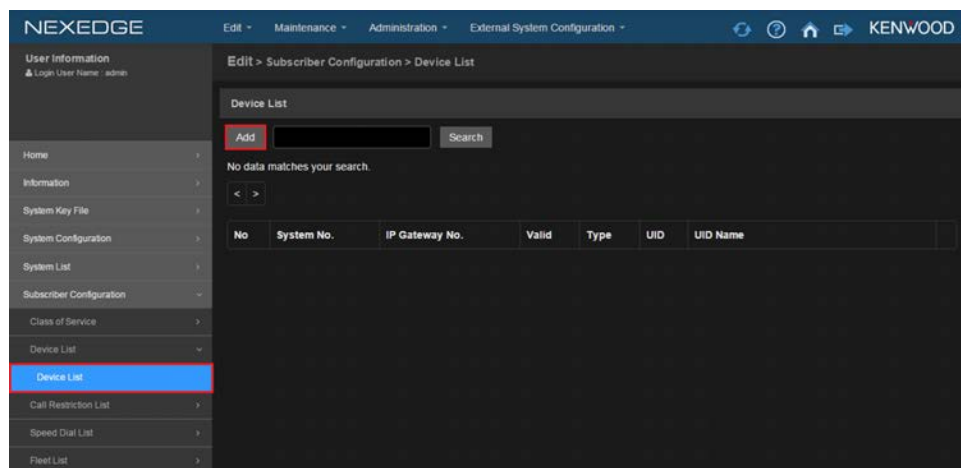


Figure 3-110 Device List

Detailed Configuration of Device

When creating a new device, the details of the device are configured in **Edit > Subscriber Configuration > Device List > General (Add)**.

- 1 Depending on the type of device to be connected, select “Console” or “Telephone” in **Type**.
- 2 Add the IP Gateway to System Controller.
- 3 In **UID**, configure the UID of the device to be connected to the IP Gateway.
- 4 Enable **Valid** of the device.

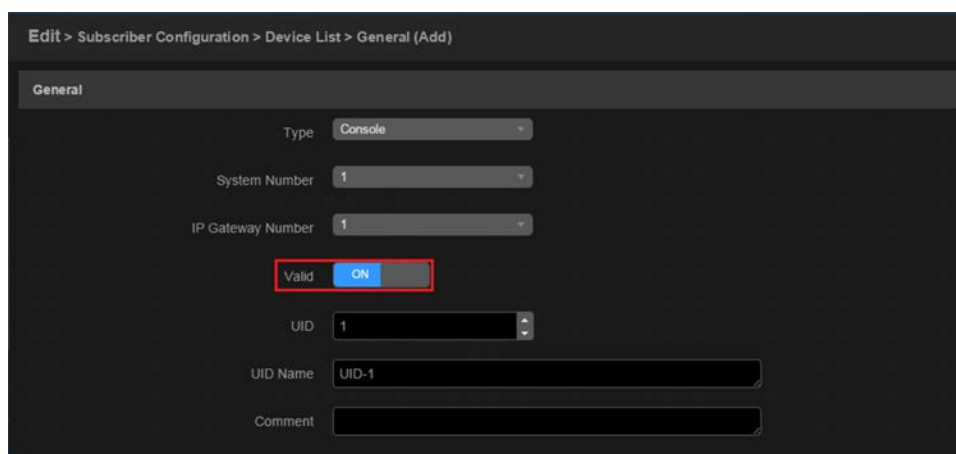


Figure 3-111 General (Add)

UID Name can be entered as a maximum of 32 alphanumeric characters and symbols.

● If Device Type is “Console”:

The arbitrary COS registered in [Configuration of UID COS on page 47](#) is configured.

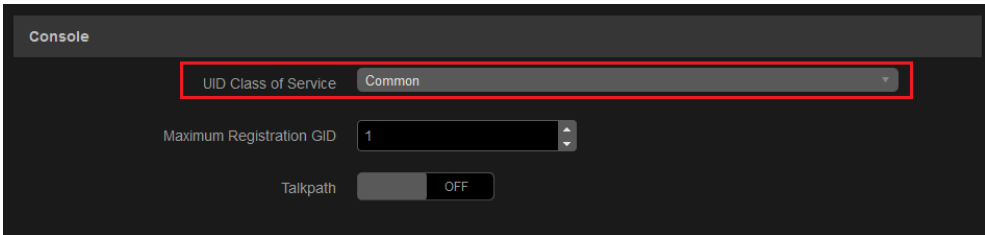


Figure 3-112 Console

● If Device Type is “Telephone”:

Enable **Bi-directional Use**.

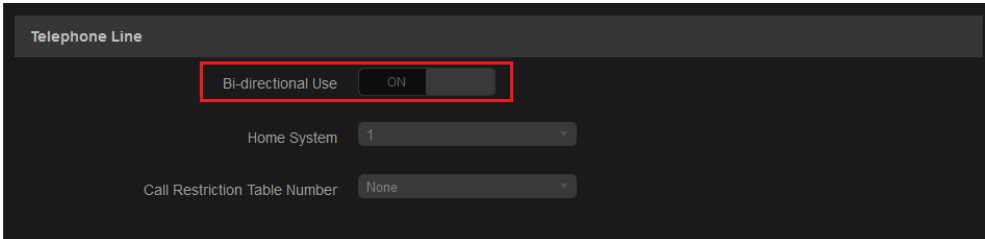


Figure 3-113 Telephone

5 Click the “Save” button after input is completed.

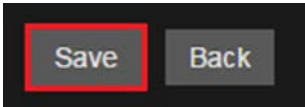
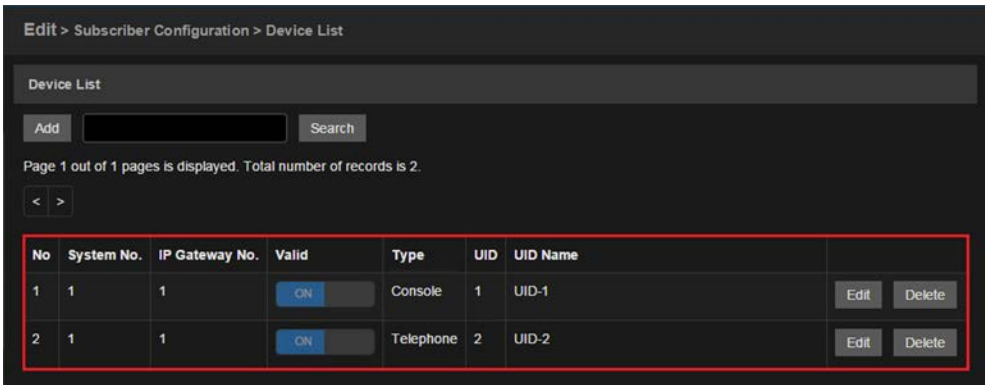


Figure 3-114 Save

A newly created device is displayed in **Device List**.



No	System No.	IP Gateway No.	Valid	Type	UID	UID Name	
1	1	1	☒	Console	1	UID-1	Edit Delete
2	1	1	☒	Telephone	2	UID-2	Edit Delete

Figure 3-115 Device List

If further registering a device, click the “Add” button again and repeat the steps above. Register the required number of devices.

Registration of Fleet

The UID of a device to be connected is registered in Fleet.
Refer to [Registering a Console UID in Fleet on page 70](#) if registering a Console UID in Fleet.
Refer to [Registering a Telephone UID in Fleet on page 72](#) if registering a Telephone UID in Fleet.

Registering a Console UID in Fleet

- 1 Click the “Edit” button of the arbitrary Fleet from the Fleet List preregistered in [Registration of Fleet on page 58](#), and then click [Console List](#) on the navigation menu.

Refer to [Registration of Fleet on page 58](#) if creating a new Fleet.

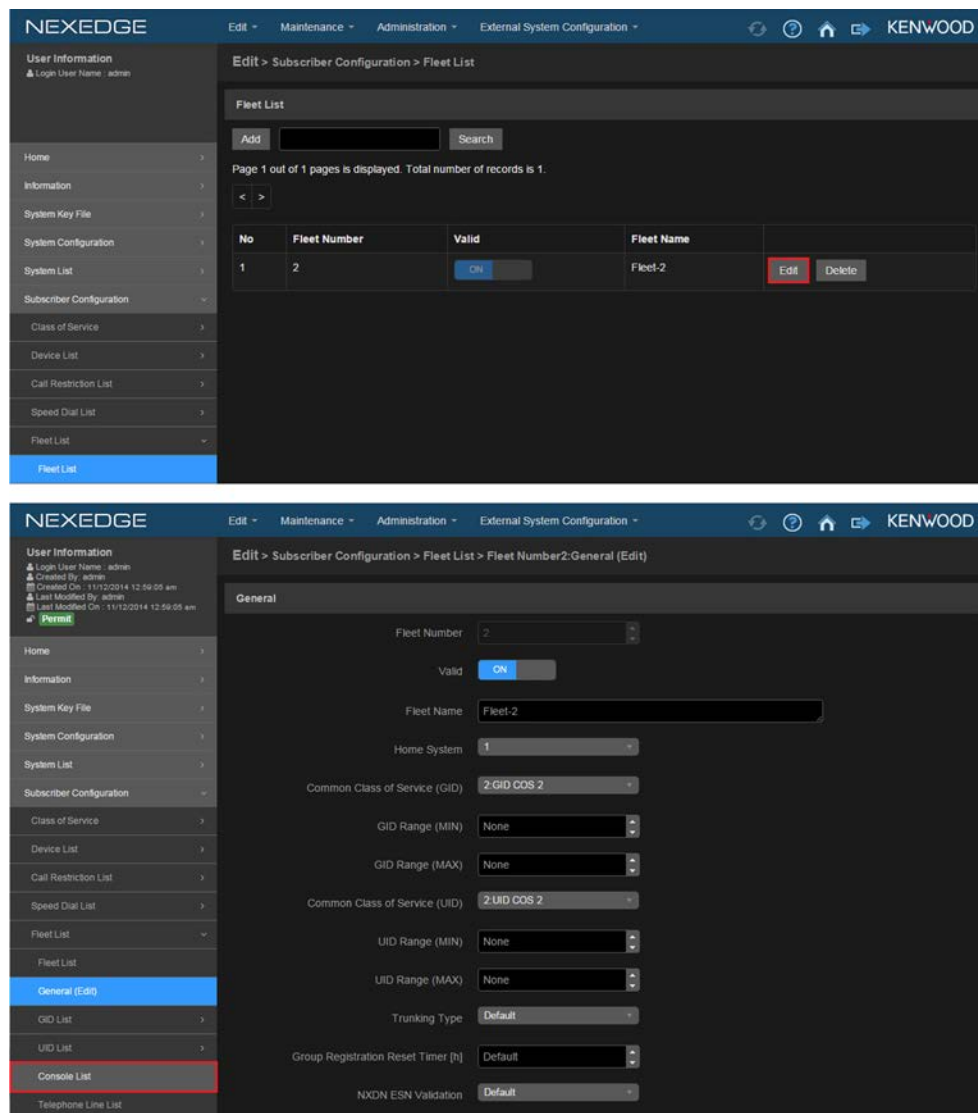


Figure 3-116 Fleet List

2 Select the Console UID registered by **Configuration of Device List** on page 68 in **Edit > Subscriber Configuration > Fleet List > Fleet Numberxx:Console List**.

3 Click the “Save” button after input is completed.

A Console UID registered in Fleet is displayed in **Console List**.

If multiple IP Gateways are added, an **IP Gateway Number** and Console UID are selected depending on the operation.

No.	System Number	IP Gateway Number	UID	Valid	UID Class of Service
1	1	1	1	ON	Common
2	1	1	Name	OFF	
3	1	1	Name	OFF	
4	1	1	Name	OFF	
5	1	1	Name	OFF	
6	1	1	Name	OFF	
7	1	1	Name	OFF	
8	1	1	Name	OFF	
9	1	1	Name	OFF	
10	1	1	Name	OFF	

Figure 3-117 Console List

Registering a Telephone UID in Fleet

- 1 Click the “Edit” button of the Fleet on the **Fleet List** preregistered in **Registration of Fleet** on page 58, and then click **Telephone Line List** on the navigation menu.

Refer to **Registration of Fleet** on page 58 if creating a new Fleet.

The top screenshot shows the NEXEDGE web interface with the 'Fleet List' table. The table has columns: No., Fleet Number, Valid, and Fleet Name. There is one row with No. 1, Fleet Number 1, Valid ON, and Fleet Name Fleet-1. The 'Edit' button is highlighted in red.

The bottom screenshot shows the 'Fleet Number1:General (Edit)' configuration page. The 'General' tab is selected. The settings are as follows:

Field	Value
Fleet Number	1
Valid	ON
Fleet Name	Fleet-1
Home System	1
Common Class of Service (GID)	1:GID COS 1
GID Range (MIN)	None
GID Range (MAX)	None
Common Class of Service (UID)	1:UID COS 1
UID Range (MIN)	None
UID Range (MAX)	None
Trunking Type	Default
Group Registration Reset Timer [h]	Default
NXDN ESN Validation	Default
Unauthorized ESN Detection	Default
NXDN ESN Validation Reset Time	Default

Figure 3-118 Fleet List

- 2 Select the Telephone UID registered by **Configuration of Device List** on page 68 in **Edit > Subscriber Configuration > Fleet List > Fleet Numberxx:Telephone Line List**.

3 Click the “Save” button after input is completed.

A Telephone UID registered in Fleet is displayed in **Telephone Line List**.

If multiple IP Gateways are added, an **IP Gateway Number** and Telephone UID are selected depending on the operation.

The screenshot shows the NEXEDGE web interface. The left sidebar contains a navigation menu with options like Home, Information, System Key File, System Configuration, System List, Subscriber Configuration, Class of Service, Device List, Call Restriction List, Speed Dial List, Fleet List, Fleet List, General (Edit), Timers, GID List, UID List, Console List, Telephone Line List (highlighted), Voice Logger, and Multi-System Configuration. The main content area is titled 'Edit > Subscriber Configuration > Fleet List > Fleet Number1: Telephone Line List'. It shows a 'Telephone Line List' table with 10 rows. The first row is highlighted with a red box around the 'UID' column, which contains '2 UID-2'. Below the table are 'Save', 'Cancel', and 'Back' buttons.

No.	System Number	IP Gateway Number	UID	Valid
1	1	1	2 UID-2	ON
2	1	1	None	OFF
3	1	1	None	OFF
4	1	1	None	OFF
5	1	1	None	OFF
6	1	1	None	OFF
7	1	1	None	OFF
8	1	1	None	OFF
9	1	1	None	OFF
10	1	1	None	OFF

Figure 3-119 Telephone Line List

Communication Test

A communication test is initiated to confirm that IP Gateway is being recognized by System Controller.

Check regarding the following items:

- Devices (Console or Telephone) registered in Device List are connected to IP Gateway, and communications permitted in UID COS and GID COS, such as Voice Call and Long Data Call, are enabled.

If there are no problems with the behaviors noted above, IP Gateway can participate with System Controller.

If the behavior of a device connected to IP Gateway is not as intended, the following may be causes:

Re-examine the configurations and check the network connection.

- No normal network connection between IP Gateway and a device
- Missing a configuration of a device connecting to IP Gateway
- Missing configuration or no normal network connection to System Controller in SCU

Console Communication Test

A Console is connected to an IP Gateway and checked.

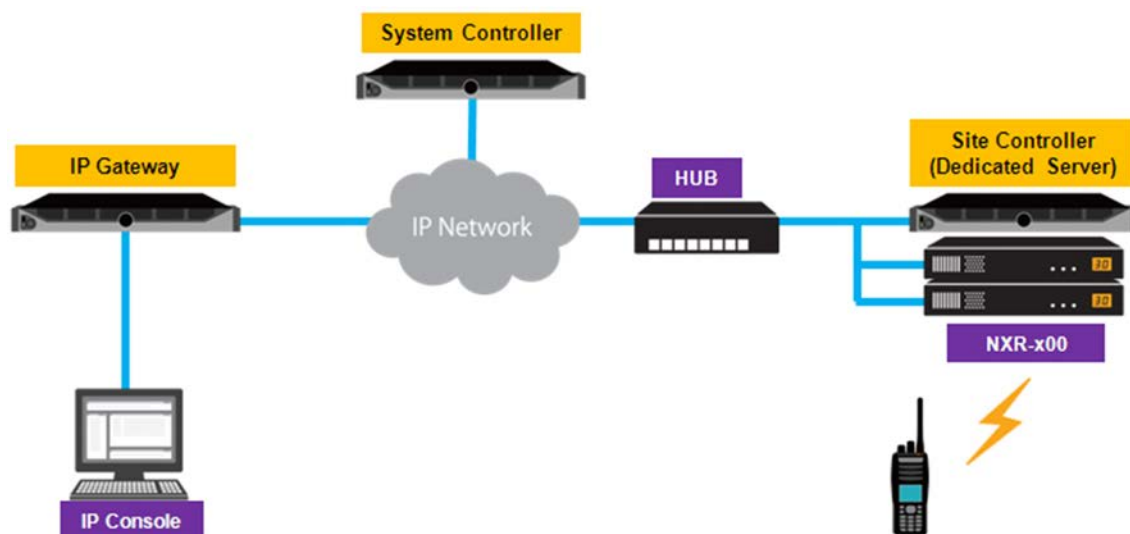


Figure 3-120 Console Communication Test

The following are the steps if KAS-10 AVL/ Dispatch Software is used in Console.

Refer to Basic Operations_XX.pdf included with KAS-10 AVL/ Dispatch Software for the detailed configuration of KAS-10 AVL/ Dispatch Software.

- 1 Start KAS-10 AVL/ Dispatch Software and configure **IP Network** to “NEXEDGE (Digital): Trunking” in **Signaling Format (Protocol) Options**, and then click the “OK” button.

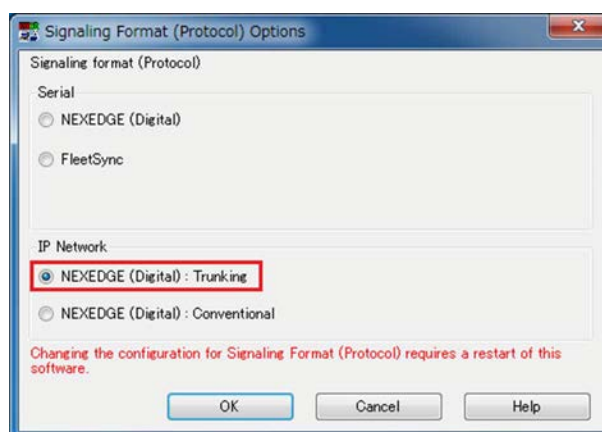


Figure 3-121 Signaling Format (Protocol) Options

- 2** Open **IP Network Options 1** and configure various configurations to match the configuration of a repeater, and then click the “Registration” button.

IP Network Options 1

Adapter(B): 172.16.1.81 : Local Area Connection

Base Station Name: BASE

Base Station ID: 00100

Default GID: 00001

System Information

Network Category: Local

System Code: 1

Home Site Number: 1

Home Site IP Address: 172 . 16 . 1 . 180

Channel Spacing: Very Narrow

Time-out Timer

Common Command: 11 [s]

Long Data Message (4,096 bytes): 180 [s]

Priority Monitor ID

Priority	GID
1	None
2	None
3	None
4	None

Encryption Key Data

No.	Key Data
1	
2	
3	
4	
5	
6	

Encryption Type: Type 2

Resume Time: 3 [s]

Emergency Display Suppress Time: None [min]

Inactivity Threshold Time (Mobile Stations List): 30 [min]

Registration(W) OK Cancel Help

Figure 3-122 IP Network Options 1

- 3** Confirm the status bar icon at the bottom of the screen of KAS-10 AVL/ Dispatch Software is green and registration is successful, and then click the “OK” button.

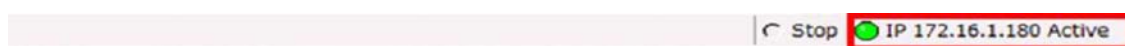


Figure 3-123 Status Bar

If not activated, re-check the configuration of KAS-10 AVL/ Dispatch Software.

4 Completing registration, open **Mobile Station Setting** and enter the GID/ UID to check communication, and then click the “OK” button.

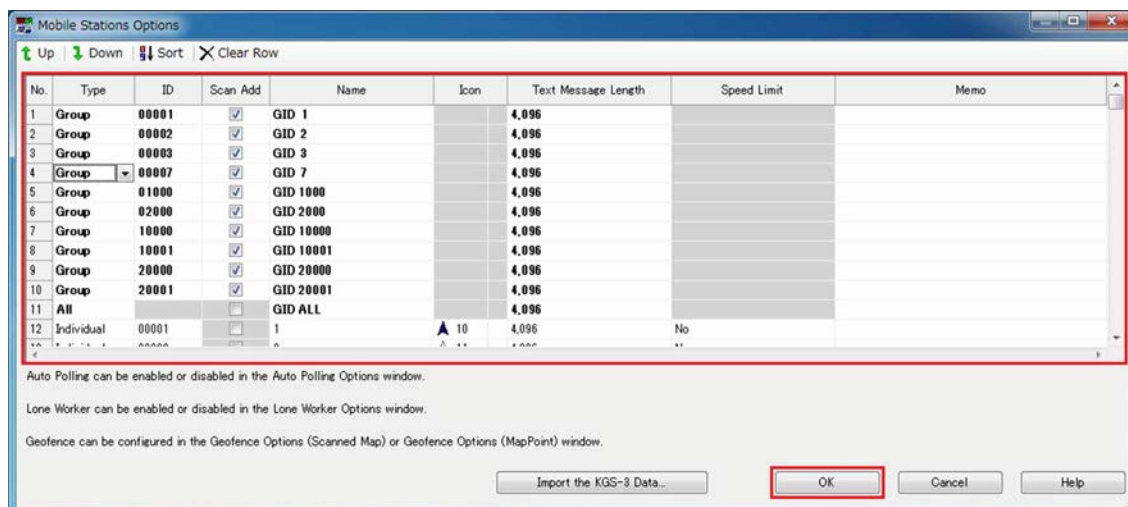


Figure 3-124 Mobile Station Setting

5 In **Call and Dispatch**, after confirming that the status is Standby, select GID or UID, and then click the “Call” button.

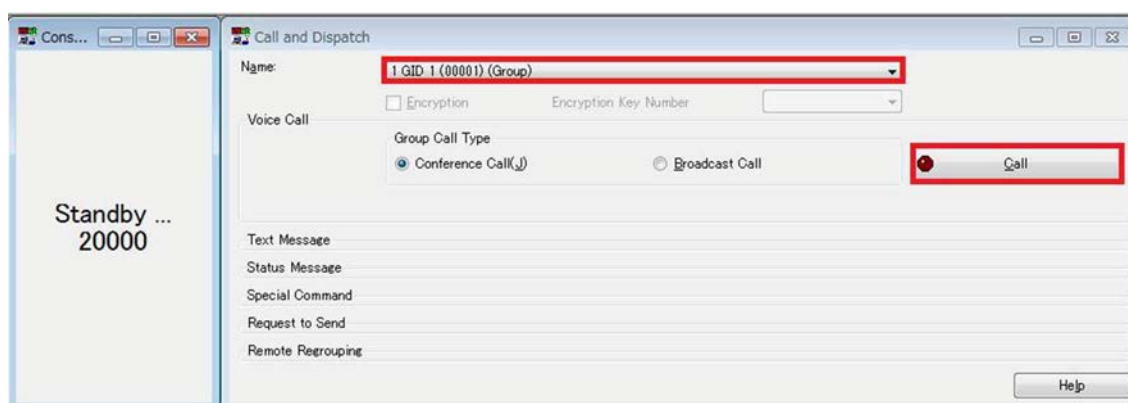


Figure 3-125 Call and Dispatch

After a call properly completes, confirm audio is emitted from a subscriber unit as the status changes from Standby to Connecting, and “Call” changes to “Terminate”.

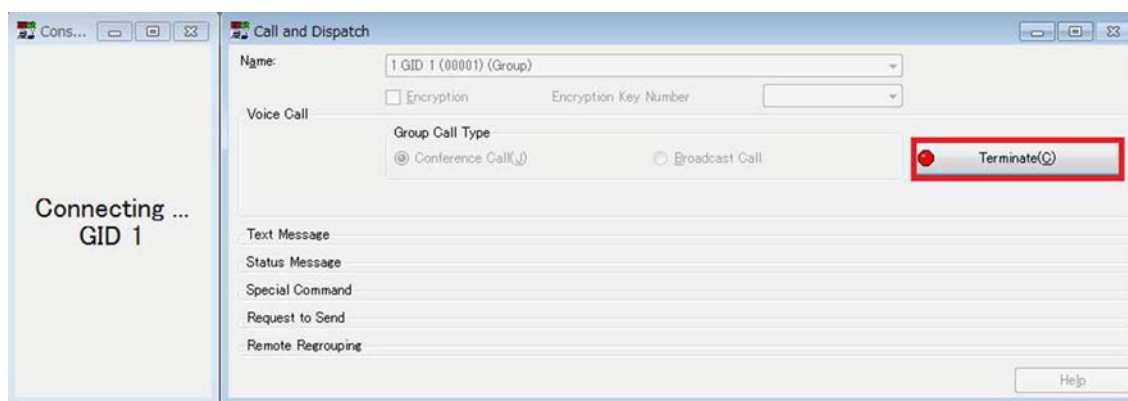


Figure 3-126 Call and Dispatch

If a call from a subscriber unit to KAS-10 AVL/ Dispatch Software, confirm Standby status changes to Receiving status, the caller ID appears, and voice is outputting from a PC running KAS-10 AVL/ Dispatch Software,

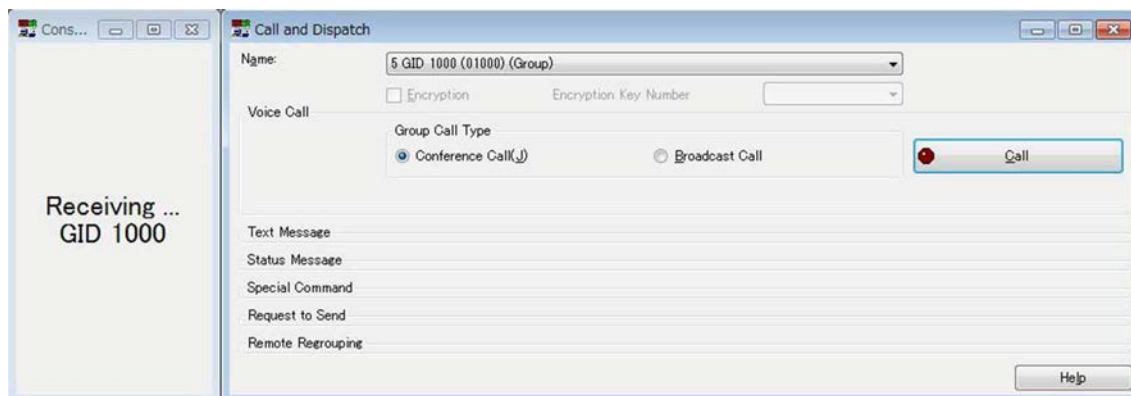


Figure 3-127 Call and Dispatch

If voice is not outputting normally, confirm whether USB-3000 is connected to a PC running KAS-10 AVL/ Dispatch Software, check the configuration of KAS-10 AVL/ Dispatch Software and other configurations.

Telephone Line Communication Test

Connect the Interconnect Adapter (KTI-4), and then connect a telephone line, such as PSTN or PABX, using a telephone punch-down and check.

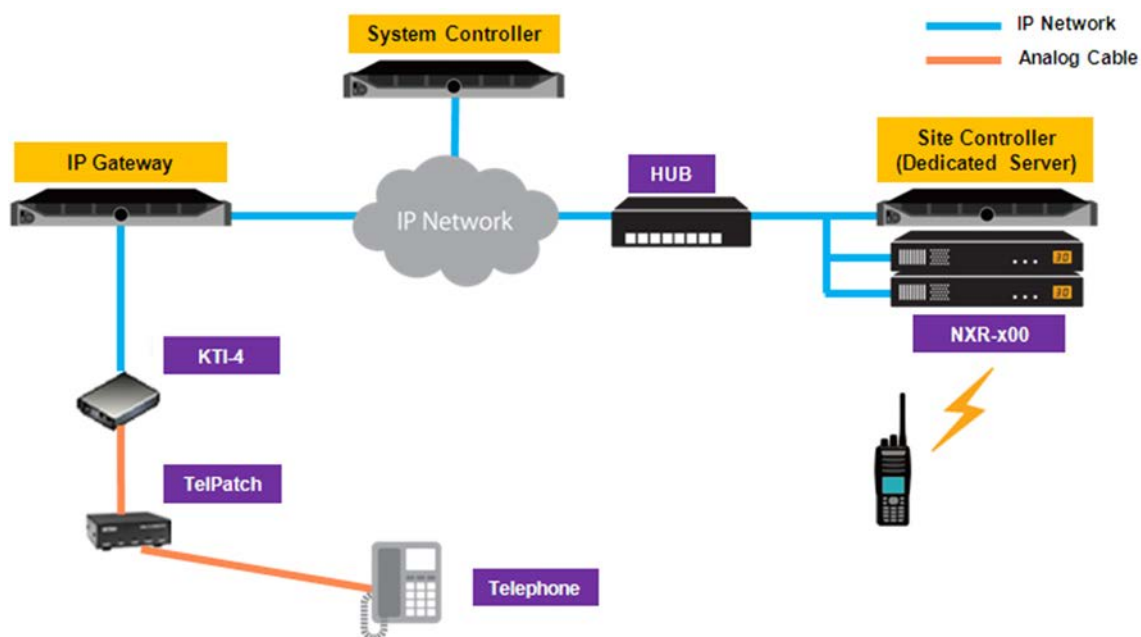


Figure 3-128 Telephone Line Communication Test

Refer to the KTI-4 Installation Guide about the connection method and KTI-4 configuration.

3.10 STEP 9: Connection of Network Manager

SCU is accessed by starting a web browser and entering the IP address of a System Controller.

Configuring Network Manager Server in SCU

IP Address is configured in **External System Configuration > Network Manager**.

1 In **IP Address**, enter the IP address of the Network Manager Server.

If using System Controller for Network Manager Server, configure External Network Server to remain “OFF”. Network Manager Server behaves as the same IP address as System Controller.

If using a specific PC server for Network Manager Server, change External Network Manager Server to “ON” and configure the IP address.

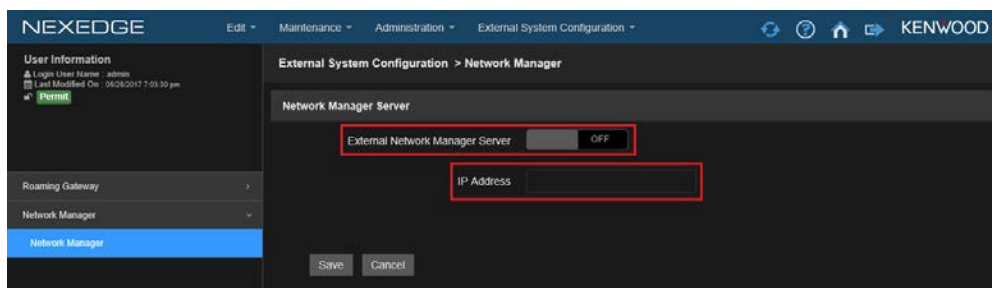


Figure 3-129 Network Manager

2 Click the “Save” button after input is completed.

Confirmation of Connection to a System Controller

The connection of a System Controller to Network Manager Server is checked.

Network Manager Monitor behaving in the Windows OS is used for the connection test.

Refer to Basic Operations about the specifications of Network Manager Monitor.

4.1 Firmware Update

If a firmware version update exists, the firmware can be updated as required in the **Firmware Update** menu of the SCU. Click **Firmware Update** from the **Maintenance** menu.

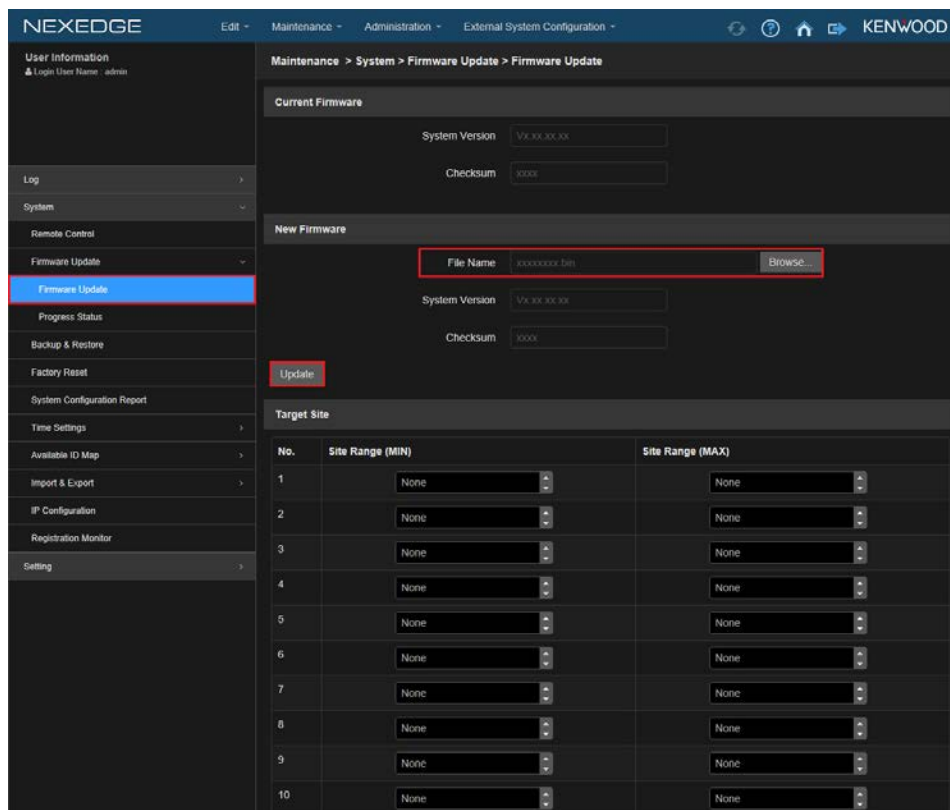


Figure 4-1 Firmware Update

The version and checksum of the firmware currently used are displayed in **Current Firmware**.

If updating the firmware is required, select the firmware file by a click of the “Browse...” button in **New Firmware**. The version number and checksum of the selected firmware appear. Checking the displayed contents, click the “Update” button if the contents are correct.

The required part of the firmware uploaded (①) to System Controller is transferred to Site Controller (②), and from Site Controller to a repeater (③). Various firmware is automatically updated, and behavior resumes once updating is completed.

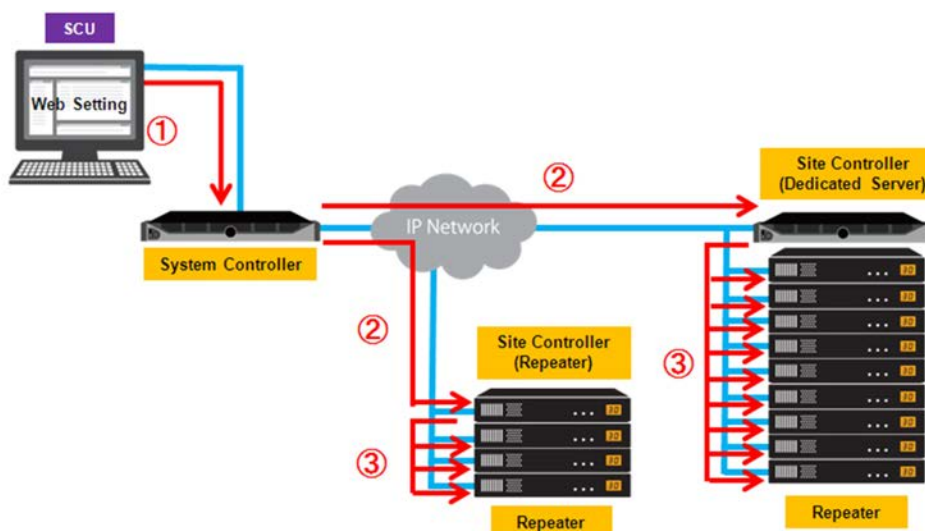


Figure 4-2 Firmware Update

4.2 Acquiring a Log File

A Communication Log or System Log can be downloaded in the CSV format.

Click **Communication Log** or **System Log** from the **Maintenance** menu.

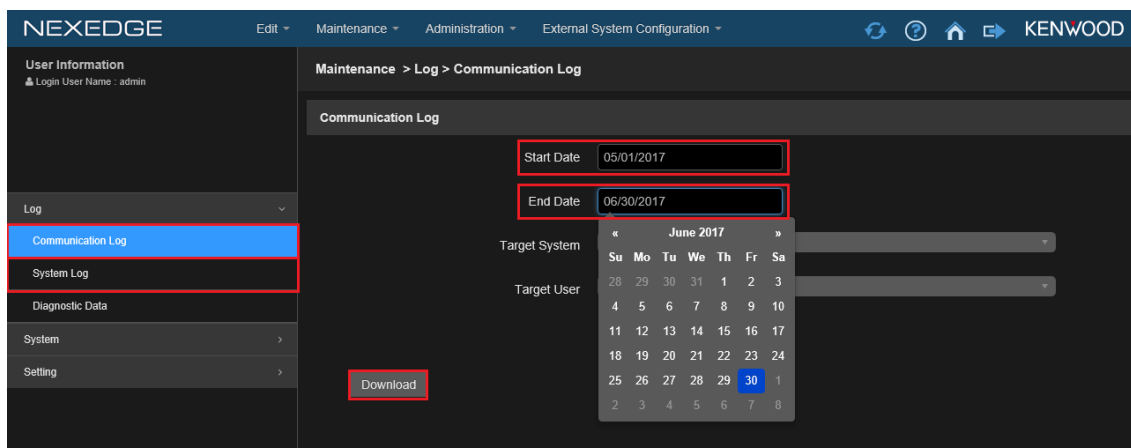


Figure 4-3 Communication Log/ System Log

The period of a log to be downloaded can be configured by clicking **Start Date** or **End Date**, and then selecting a date from the calendar that appears. The log of the configured period downloads by a click of the “Download” button. The steps for saving vary depending on the browser.

The contents of the downloaded file can be checked in software such as Excel, as the file is in the CSV format.

4.3 Factory Reset

If a factory reset of the PC server is executed via a command from the serial console, such as when logging in is not possible because the SCU login account is not known, defaults are restored for all configurations and information except the following items:

- Firmware
- The Activation information in Edit > Information
- The NTP Server configuration in Maintenance > System > Time Setting > General
- The IP configuration in Maintenance > System > IP Configuration

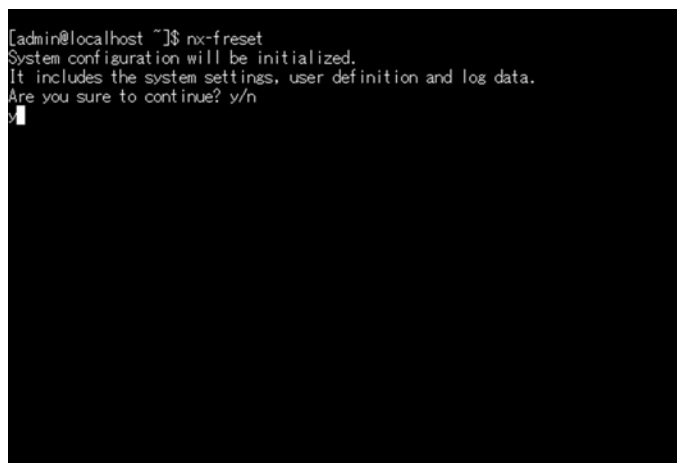


Figure 4-4 Factory Reset

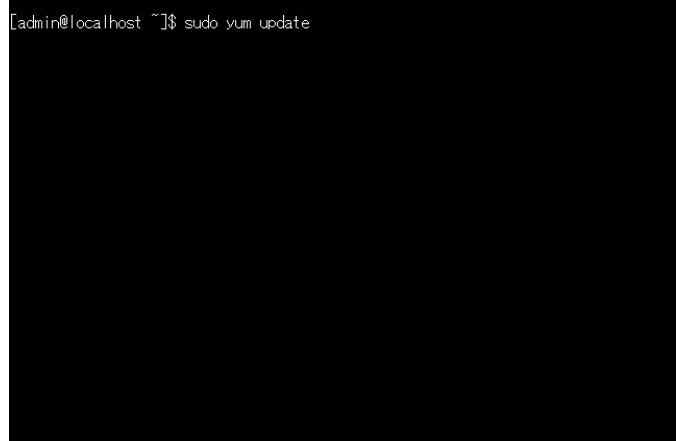
As whether a factory reset can be executed is asked, enter “y”.

4.4 Security Update

The following commands can be executed using sudo.

- rpm
- up2date
- yum

Example of use:



```
[admin@localhost ~]$ sudo yum update
```

Figure 4-5 Security Update

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