SimpLinx

Start Guide

Startup Guide for SimpLinx Remote Connection Devices

06/2020
man-en-remote-access-start-guide
Version 1.1

Legal Notices

Warning Notice System

This document contains alerts and information indications for the safety of you and your devices. The symbols and meanings used to draw your attention to these notifications are listed below.

Danger: Indicates that death or severe personal injury will result if proper precautions are not taken.

Warning: Indicates that death or severe personal injury may result if proper precautions are not taken.

Info: Indicates advice or **information.**

Qualified Personnel

It is assumed that what is described in this document will be applied by qualified personnel for the specific task.

Disclaimer

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency.

The information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Change List (Change Log)

Version	Date	Description
V1.0	06/2020	Draft
V1.1	07/2020	Typos

Preface

Purpose of the Document

This document contains information about the following topics

- Simplinx Remote Connection Solutions
- SMX-RNS02
- SMX-RKY01 / SMX-RKS01
- SMX-N1559
- How to Start?

Required Level of Knowledge

In order to fully understand and apply this document, it is necessary to have knowledge of IT, Automation and Electricity.

Contents

1. Required Hardware and Software

The software and hardware to be used in are listed below.

Hardware

- 1 SMX-RNS02 Module
- 1 SMX-RKY01 or 1 SMX-RKS01
- 1 SMX-N1559 WiFi Module (Optional)
- 1 minimum 1 meter Ethernet Cable (Optional)
- DC Power supply (At least 24V 1A or 12V 2A)
- User PC

Software

- Windows 7 or Windows 10 (32 Bit or 64 Bit) Operating System
- Web Browser (Preferably Google Chrome)
- Administrator rights to install required programs

The SX-Client program installs network and USB drivers, so administrator rights will be required during installation.

Administrator rights will be required because the SX-Client program changes network settings while running.

2. Preparing Hardware

2.1. Electrical Connection of SMX-RNS02 Module

The SMX-RNS02 module has 1 terminal group. The terminal group is called X1. The X1 terminal group has 3 terminals. They are in the following order;

X1		
+	-	Gnd

(+), (-) and GND connect the appropriate terminals.

There are 2 USB ports on the SMX-RNS02. The USB connection requires (-) and GND short circuited as a design fact. For this reason, GND and (-) on SMX-RNS02 are short circuited.

Faulty or incomplete connection may damage you, those around you, or devices.
See the relevant documents and electrical drawings for detailed information.

2.2. Connecting Your Devices for Communication

Complete the setup of your devices to communicate with.

You can connect your devices directly to the relevant ports. Ethernet and USB are communications are directly supported.

See the relevant documentation for other communication options.

Incorrect or incomplete connection may damage you, those around you, or devices.

See the relevant documents and electrical drawings for detailed information.

3. Preparing the User Certificate

There are 2 methods to store the user certificate.

- SMX-RKS01: Soft Certificate. The user can store the certificate on his personal computer or a usb disk. The certificate is protected by password.
- SMX-RKY01: HW Certificate. The user certificate is also stored in the USB that encrypts at the hardware level. The certificate is only valid as long as it is stored on this USB disk. Each certificate is assigned to the USB disks serial number. The USB disk is protected by an external password. USB disk content cannot be displayed unless the password is entered.

If you use SMX-RKS01 as a user certificate, you can jump to the next section.

3.1. Preparation of SMX-RKY01

- Connect the SMX-RKY01 to an empty USB port on your PC.
- The**"Kingston Password"**screen will automatically open. If the password screen does not open automatically, run **"My computer**"->"**DTL+G3**"->"**DTLplus_Launcher.exe**". The password screen will open.
- If you enter your password for the first time, use the pre-defined password.
- After entering your password, press ENTER.
- The relevant USB Disk files can be viewed. You can close the Explorer tabs that are opened.
- Your user certificate is ready for use.

Pre-defined Password is: "**@S123456**"

The SMX-RKY01 certificate is hardware protected with an external password. 10 times incorrect password input or using the "***Reset Password***" option makes your certificate ***invalid***.

For security reasons, it is recommended that you change the pre-defined password in the first use.

See the relevant documentation for detailed information.

3.2. Preparation of SMX-RKS01

If you use SMX-RKY01 as a user certificate, you can skip this section.

- Connect the SMX-RKS01 USB drive to an empty USB port on your PC.
- USB Disk content will appear under the**"My Computer**" tab. USB Drive iscalled**"SXC-*******".**” şeklinde isimlendirilmiştir.
- Copy the "**SXC-*******.sxc**" file from the USB Disk to your hard drive.
- Your user certificate is ready for use.

Pre-defined Password: "**@S123456**"

The SMX-RKS01 certificate is protected by password.

Safe storage of your certificate file and password is critical for you and your customers.

For security reasons, it is recommended that you change the pre-defined password in the first use.

See the relevant documentation for detailed information.

4. Login to the System

SimpLinx remote link user interfaces are completely web-based. The SX-Client program is used to perform functions such as interaction with Windows operating system and driver control.

The SX-Client program installs network and USB drives, so administrator rights will be required during installation.

Administrator rights will be required because the SX-Client program changes network settings while running.

The web browser does **not need** to be run with administrator rights.

4.1. Installing the SX-Client Program and Drivers

The SX-Client program needs to be installed and running during login.

- hardware https://www.simplinx.net on your browser
- Enter "**SX-Client**"
- Download and install the program by following the link on the "**Introduction with Hw Key**"tab.
- Run the program using the SX-Client icon on the desktop after setup.
- When SX-Client runs, Windows will create an information message next to the taskbar.

If you are using Windows 7 and clientnode is installed

- Open ClientNode program.
- Remove the USB driver from the Drivers->USB Drive page
- Restart your PC
- Install SX-Client

4.2. Login to the System with A Certificate

To login:

- Go from your browser to https://www.simplinx.net
- Enter "**SX-Client**"
- Password screen;
  - ✓ If you are using SMX-RKY01;
    - From your browser, press**"HW Key Read**" but. In previous steps, the HW Key certificate was made ready for use. If it's not ready, you can follow the instructions in the relevant section.
    - The HW Key certificate will be read and the system will be logged in.
  - ✓ If you are using SMX-RKS01;
    - Go to the **"Login with SW Key"** tab.
    - Select your certificate and enter your password
    - In previous steps, the **SW Key** certificate was made ready for use. If it's not ready, you can follow the instructions in the relevant section.
    - Press the **"Login"** button
    - SW Key certificates will be read and logged into the system.

5. Registering your SMX-RNS02 Device to the System

After you login from your browser, a **"Welcome"** screen will open. The screen is split in two parts. The left part is the menu and the right part is the content.

In order to use your SMX-RNS02 device, the device must first be registered to the system on behalf of the user.

Each device box contains a **"Register Info"** card. This card has a serial number and a registration password for the device. For example,

Register Info

Model	SMX-RNS02
Serial No.	SRX-XXXXX-XXXXX
Password	XXXXX-XXXXX-XXXXX

- From the Left Menu, go to the "**Remote Node**"--->"**Remote Node-List**" page.
- Your existing devices are listed in a table on the page. If you're logging into the system for the first time, the list will be empty.
- Press the + icon from toolbar. You will be redirected to the "**Add New Device**" page.
- Enter all information from your "**Register Info"** card.
- Press the Save button.
- If all information is correct, the device will be displayed in the list.

If your HW Key or SW Key is a subkey (slave), the new added devices will be saved to the master account.

All information on the "**Register Info"** card is unique and private.
It is recommended that you do not share it with anyone for your safety.

Once the device is registered on, it is recommended that you write your customer name or reference in the relevant section on the "**Register Info**" card and store it for future reference.

6. Preparing SMX-RNS02 for Connectivity

WARNING: Don't power up your device until you get to the relevant step.

6.1. Internet Connection Options

The Internet can be provided in 3 different ways to the SMX-RNS02 device.

- **Wired from WAN Entrance**
  - ✓ Plug the ethernet cable with an Internet connection into your device's WAN port. DHCP or IP settings will be made in the next steps.
- **Phone USB Tethering**
  - ✓ Plug your iPhone or Android phone into your device's USB port with a charging/data cable.
  - ✓ Turn on tethering from phone settings.
  - ✓ After powering up your device **"Ready LED**" is lit, then you may need to turn off and on again the tethering setting from your phone.
- **WiFi Connection**
  - ✓ This option requires the SMX-N1559 module. Read "**Installation of the SMX-N1559 USB WiFi Module**"section.

6.2. Device LEDs and Their Meanings

The front cover of the SMX-RNS02 module has 2 LEDs. These are from the top;

- **Ready LED**
  - ✓ **OFF:** It is not lit when the device is de-energized.
  - ✓ **ON:** When the device has booted and ready, this LED is steady lit.
- **Online LED**
  - ✓ **OFF:** No Internet connection
  - ✓ **ON :** Internet connection ready
  - ✓ **BLINK:** There is currently an active remote link

6.3. Installation of the SMX-N1559 USB WiFi Module (Optional)

- Place and tighten the SMX-N1559 module's antenna.
- Plug the USB WiFi module into an empty USB port of SMX-RNS02.
- Your SMX-N1559 module is ready for use

6.4. Ethernet Connection to your PC (Service IP) (Optional)

There are three methods to setting up the device.

- Connection over WiFi
- Physical connection from the service port with Ethernet Cable
- After a remote connection is made, you can access the web interface

If you have an optional Wi-Fi module and you want to setup via Wi-Fi you can skip this step.

- Connect one end of the Ethernet Cable to the SMX-RNS02 LAN port (one of the 2 ports at the bottom), and the other end to your PC's Ethernet port.
- Go to Ethernet Adapter settings on your PC
- Double-press on your adapter to go to the detail page
- Press the Properties button
- Double-press**" Internet Protocol Version 4 (TCP/IPv4)**" option
- From the drop-down page, select "**Manual IP Adjustment**" and enter the followinginformation
  - ✓ IP : 192.168.169.100
  - ✓ Subnet Mask: 255.255.255.0
- Quit by confirming changes

6.5. Powering up your devices

Turn on the power. Make sure that the devices you will connect are also turned on.

- First powered up **"Ready LED"** will be lit faintly. Approximately 30 s later it will be lit brightly.
- If the Internet connection is ready, "**Online LED**" will lit.
- If you are tethering from your phone, you may need to turn off and on the mobile access setting on your phone when **"Ready LED"** is lit.
- If you want to use the manual IP input option or if you want to provide internet over WiFi, your device will connect to the internet after you set up your device as described in the next section.

Incorrect or incomplete connection may damage you, those around you, or devices.
See the relevant documents and electrical drawings for detailed information.

You need to use a shielded cable on ethernet, USB and other connections.

6.6. Making Basic Settings

If the basic settings will be connected with the SMX-N1559 WiFi module;

- View the WiFi networks around you with the Network Icon at the Bottom Right on your PC.
- The SMX-RNS02 device will be broadcasting WiFi with serial code.
- From the list, select the network in the format "**SRX-XXXXX-XXXXX**" which matches your device's serial number and press "**Connect**"
- Enter wifi password

Predefined WiFi login password "**simplinx**"

If you have a wired or WiFi connection ready;

- Open your browser
- On the Address tab, enter " http://192.168.169.254:3000" and press ENTER
- SimpLinx will open the password home screen for device basic settings.
- Enter your password and press ENTER

Predefined web login password "**simplinx**"

- Enter the required internet settings from the "**WAN**" and **"WirelessSettings"** pages.
- Go to the "**LAN Settings**" page.
  - ✓ To connect to your field devices, your Ethernet field devices and your SMX-RNS02 device must be on the same IP network. Enter the settings correctly.
  - ✓ **Example 1 (Predefined)**
    - IP: 192.168.168.254
    - Subnet Mask: 255.255.255.0
    - IP (PC): 192.168.168.250
    - In this case, you can use all IP addresses in the range of [192.168.168.1-192.168.168.249] and [192.168.168.251 - 192.168.168.253] for your field devices.
  - ✓ **Example 2**
    - IP: 192.168.0.1
    - Subnet Mask: 255.255.255.0
    - IP (PC): 192.168.0.2
    - In this case, you can use all IP addresses in the range [192.168.0.3 - 192.168.0.254] for your field devices.
  - ✓ **Example 3**
    - IP: 10.0.0.1
    - Subnet Mask: 255.255.255.0
    - IP (PC): 10.0.0.2
    - In this case, you can use all IP addresses in the range [10.0.0.3 - 10.0.0.254] for your field devices.

7. Remote Connection

7.1. Device Detail Pages Overview

From the left menu, go to the "**Remote Node**"-->"**Remote Node - List**" page. From the list page, double-click on your device for the device's detail page.

On the Device detail page, you can also access the following pages in the Right Menu;

- **View Information:** You can find the status of your device, the HW and SW versions, and the latest link information on this page.
- **Edit Information**: You can take notes about your device.
- **Log**: You can view the latest remote connection information to the device.
- **Sub device List:** You can create field device lists that are connected toyour device.
- **Send Command :**You can send commands to yourdevice,such as "**Restart**".

There is no limit for connection number to your Ethernet field devices. With the help of an Ethernet Switch, you can connect more devices.

You can connect to only 1 USB field device at a time.

You don't need to register your devices to **"Sub device List"** to see or connect your devices.

This list helps you make connections from a phone or tablet, such as **HTTP** or **VNC.**

It is recommended that you review the SX-Client documents for detailed usage statements.

7.2. Starting a Web Connection

If you are ready to connect to the device, press the "**Connect**" button from the Device Detail home page. The device will change its status to "**Connecting**".

In approx. 12 s the status will change to **"You Can Connect to Your Field Devices**".
You're ready to connect to your field devices!

Approx. 30 s later the entire IP list will be displayed on the screen. If your Ethernet device has HTTP or HTTPS enabled, the **"Connect"** button will appear next to the IP. If you press the button, the web interface of the relevant device will open.

Approx. 30 s later your devices connected to USB ports will be displayed. Simply press the "**Connect"**button next to the USB device you want to connect.

The SMX-RNS02 does not need any USB driver to connect to remote USB devices. All USB devices are emulated/simulated and connected to your PC. Therefore, the driver of the USB device you will connect to must be installed on your PC.

7.3. Service IP Connection Test

You can always use the **"Service IP Ping"** method for testing the connection.

Open the Windows Command Line for this method.

Type to the command line

"**ping 192.168.169.254**"

and press **ENTER.** The result of the ping test will also provide information about your connection speed. For example, if the ping time is 50 ms, that means a data packet from your PC is sent to SMX-RNS02 and it took 50 ms for it to respond to you.

7.4. Ethernet Connection

You can use the ping command for the presence of your Ethernet field devices and connection testing.

Open the Windows Command Line for this method.

Type to command line

"**ping <DEVICE_IP>**"

then press ENTER. After you confirm your connection, you can start using your programs dedicated for the device.

For example,

- If your field device is Siemens S7-1500 PLC, open the TIA Portal program.
- Open your project
- "**Accesible Nodes**"
- Make sure "**PN/IE**" is selected as**"interface"**" olarak “on the pop-up screen
- From the list "**PG/PC Interface**",select the "**Simplinx Adapter V9**" network adapter.
- "**Start Search**"button
- Your PLC will be listed. You can be online by selecting your PLC.

Similarly, you can connect to all your field devices.

As with the case of Siemens TIA Portal, if you have an adapter selection in the program you are using, make sure that "**Simplinx Adapter V9"**is selected.

If the program you are using has a Network Subnet option, make sure that ip and subnet mask are entered that are compatible with your field device.

Because of the remote connection, it is recommended that you increase them if your program has "**Timeout**" options.

7.5. USB Connection

Approximately 30 s after connection, your devices connected to usb ports will be displayed.

Simply press the "**Connect"** button next to the USB device you want to connect to.

The SMX-RNS02 does not need any USB driver to connect to remote USB devices. All USB devices are emulated/simulated and connected to your PC. Therefore, the driver of the USB device you will connect to must be installed on your PC.

Because of the remote connection, it is recommended that you increase them if your program has "**Timeout**" options.

7.6. Connection Statistics

After the connection is established, connection statistics will begin display under the **"Status**" tab.

These statistics are;

- **Incoming Data Size**: Total amount of data from your SMX-RNS02 and your field devices to your PC (KB)
- **Outgoing Data Size**: Total amount of data sent from your PC to Your SMX-RNS02 and your field devices (KB)
- **Data Lap Time (RTT):** The time required for a data packet from your PC to reach SMX-RNS02 and return (ms)

7.7. Termination of connection

When you want to end the connection, simply press the**"Reset"**button.
Connections with all your field devices (Ethernet and USB) will be automatically terminated.

CE

06/2020
MAN-TR-Remote-Access-Start-Guide.docx
Version 1.1

SimpLinx Elektronik Ltd.

Halil Rifat Pasa Mh. Nazli Sk. No:1/5 No:17 Sisli/Istanbul
www.simplinx.com