





### [1] SAFETY PRECAUTIONS

#### – Before use, read the following safety precautions. –

This instruction manual explains how to safely use your new USB communication unit, LCR-USB2. Before use, please read this manual thoroughly. After reading it, keep it together with the product so you can refer to it when necessary.

#### ⚠ WARNING

- Read through the instruction manual of LCR700/LCR701 too, and use the instrument correctly and safely.
- Please note that we are not responsible for any outcome of the operation of the product.

## [2] APPLICATIONS AND FEATURES

### 2-1 Applications

This product allows you to transfer measurement data and date/time information to your PC by connecting the LCR700/LCR701 handy LCR meter to the LCR-USB2 and using the dedicated LCRLink software.

### 2-2 Features

- Event recording available.
- Acquisition interval adjustable from the shortest to 59 minutes.
- Handling the saved data (CSV format) by a spread sheet application makes drawing graphs easy.

### [3] INSTALLATION OF LCRLink

#### 3-1 System Requirements

CPU: 1.6 GHz or faster, 2 GB or more RAM  
Supported OS: Windows 10 and Windows 11

- Microsoft and Windows are registered trademarks of Microsoft Corporation in the USA and other countries. The other company names and product names in this manual are registered trademarks or brands of each company.

#### 3-2 Preparation for Installation

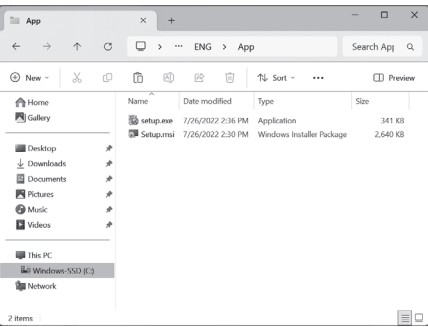
- Prepare a PC that meets the system requirements (see section 3-1).
- Download the dedicated LCRLink software (free of charge) from our website and save it to the PC. The software package includes an installer and device driver.

Contents	Folder and file names	Description
Installer	\\ENG\\App\\setup.exe	
Device driver	\\ENG\\Driver	For Windows 10 and Windows 11

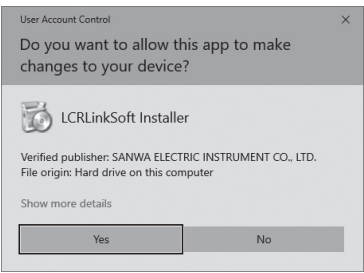
- Make sure your user account on your PC is an administrator.

#### 3-3 Installation Procedure

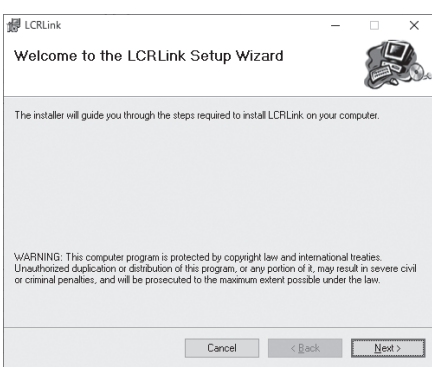
- 1) Double-click the application "setup.exe" in the folder of "App\\ENG" for English.



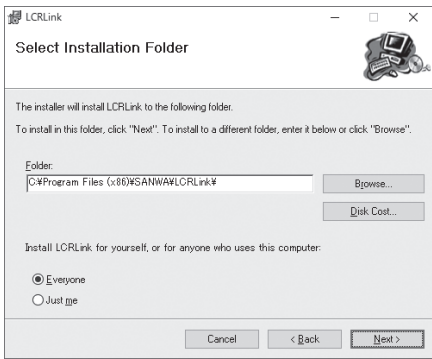
- 2) The User Account Control window will appear. Click "Yes".



#### 3) The Setup Wizard window will appear. Click "Next".



- 4) If you do not need to change the folder, click "Next".



#### 5-3 If Communication with LCRLink Fails

- Ensure that the LCR-USB2 is properly connected to the LCR700/LCR701.
- Ensure that the USB connector of the LCR-USB2 is properly connected to your PC's USB port.
- Verify that the port number set in LCRLink matches the port number (COMx) in the device driver.
- Check Device Manager to confirm that the device driver is properly installed.
- If using a USB hub, use a self-powered USB hub.
- Ensure that the PC transfer function on the LCR700/LCR701 is active.
- Check that the battery of the LCR700/LCR701 is not depleted.

## [6] MAINTENANCE

#### ⚠ WARNING

1. The following instructions are very important for safety. Read them thoroughly to ensure correct maintenance.
2. Before use, inspect the instrument to ensure safety.

#### 6-1 Maintenance and Inspection

- 1) Appearance:
  - Is the instrument damaged due to falling or other cause?
- 2) Cables:
  - Are the cables damaged, or are the core wires exposed? If any of the above problems exists, stop using the instrument and request repair or replace with a new unit.

#### 6-2 Cleaning and Storage

#### ⚠ CAUTION

1. The body is sensitive to volatile solvents. Avoid wiping it with thinner, alcohol, or similar substances. To clean the body, use a soft cloth slightly dampened with water.
2. The body is sensitive to heat. Do not place it near heat sources or devices that generate high temperatures.
3. Avoid storing the instrument in locations subject to vibration or where there is a risk of it falling.
4. Do not store the instrument in environments exposed to direct sunlight, extreme heat or cold, high humidity, or conditions where condensation may occur.

## [7] AFTER-SALE SERVICE

### 7-1 Repair

- 1) Before requesting repair, please check the following items again:
  - Does the LCR700/LCR701 have sufficient battery capacity? Is the battery installed with the correct polarity?
  - Are there any abnormalities in the appearance or operation of the LCR700/LCR701?
- 2) Notes on repairs:
  - Repairs will be performed for a fee only if the product's original functionality can be restored.
  - In some cases, repair and transportation cost may become higher than the price of the product. Please contact a Sanwa authorized agent, distributor, or service provider in advance.
  - The minimum retention period of service functional parts is 6 years after the discontinuation of manufacture. This retention period is the repair warranty period. Please note, however, if such functional parts become unavailable for reasons of discontinuation of manufacture, etc., the retention period may become shorter accordingly.
- 3) Precautions when sending the product to be repaired:
  - To ensure the safety of the product during transportation, place the product in a box that is larger than the product 5 times or more in volume and fill cushion materials fully.
  - Clearly mark "Repair Product Enclosed" on the box surface.
  - The cost of sending and returning the product shall be borne by the customer.

### 7-2 SANWA web site

<https://www.sanwa-meter.co.jp>  
E-mail: [exp\\_sales@sanwa-meter.co.jp](mailto:exp_sales@sanwa-meter.co.jp)

## [8] SPECIFICATIONS

### 8-1 General Specifications

Interface specification	Compliant with USB Specification Rev1.1
Source voltage	5 V DC (supplied from USB bus)
Operating environment	Temperature 0 to 40°C, humidity 0 to 80% (no condensation)
Cable length	Approx. 1.3 m
Accessory	Instruction manual

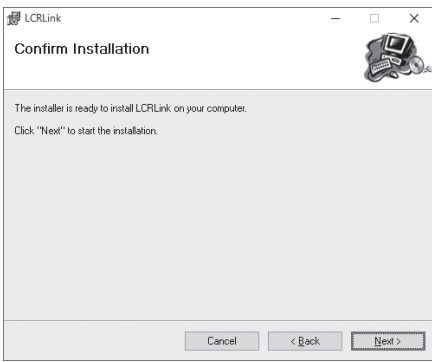
### 8-2 Communication Specifications

This section is intended for users who develop their own communication software. Users who use LCRLink (communication software) downloaded from our website do not need to read this section. Here, we describe the communication specifications between the LCR700/LCR701 and the LCR-USB2.

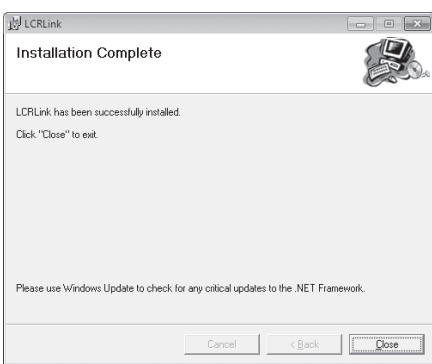
#### Note:

We do not guarantee the operation of any program developed based on this manual, nor do we provide support for inquiries related to such programs.

- 5) Click "Next" to start the installation.



- 7) The installation is now complete. Click "Close" to exit the window.



The installation is now complete.

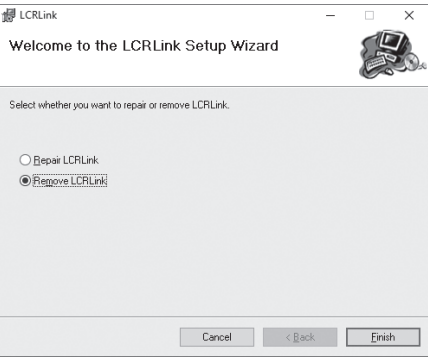
### 3-4 Installation FAQ (Frequently Asked Questions)

Q1. Where will the application be installed?

A1. If you do not change the installation folder in step 4) of section 3-2, the application will be installed in "C:\\Program Files (x86)\\SANWA\\LCRLink".

Q2. How can I uninstall the application?

A2. You can uninstall it in two ways. One way is to double-click the "setup.exe" file used for installation, and then select "Remove LCRLink" and click "Finish" in the LCRLink Setup Wizard. The other way is to open the Windows Control Panel, click "Uninstall a program" under "Programs," select "LCRLink" from the list, and uninstall it.



Q3. I cannot install the application. What should I do?

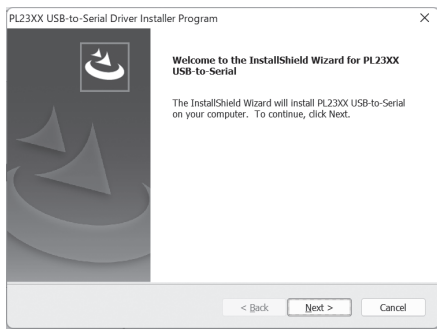
A3. Check if your PC meets the requirements in section 3-1, "System Requirements". Also review section 3-2, "Preparation for Installation", and section 3-3, "Installation Procedure". Try installing the application with administrator privileges.

## [4] INSTALLATION OF THE DEVICE DRIVER

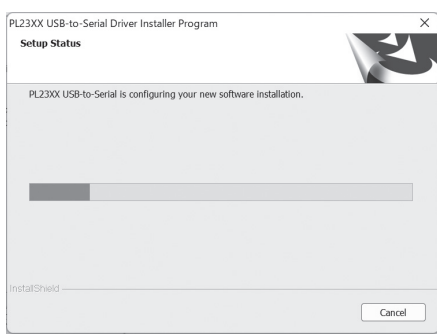
### 4-1 Installing the Device Driver

When installing the device driver, do not connect the LCR-USB2 to the PC or the LCR700/LCR701.

- 1) Double-click the .exe file (application) in the "Driver" folder of the downloaded software. This will launch the device driver installer.



- 2) Click "Next >" to proceed with the driver installation.



### 1) Communication method

The LCR-USB2 is connected via USB but is recognized as an RS232C port for communication.

The communication method is an asynchronous communication using a UART (Universal Asynchronous Receiver Transmitter). This unit is electrically isolated from the LCR700/LCR701 using infrared LEDs.

The following shows the details of the port setting.

Baud rate	9600 bps
Data bit	8 bit
Stop bit	1 bit
Parity bit	None
Flow control	None
Terminal code	CR+LF (0DH+0AH)

### 2) Timing of data transfer

- Transmission timing from the LCR700/LCR701: The LCR700/LCR701 sends data as a reading on the LCD display is updated (2 times/sec) when RTS is active.

### 3) Data Structure

The measured data transferred from the LCR700/LCR701 consist of 17 data blocks. One block of the data has 8 bits.

1	Start code	00H
2	Data length	0DH
3	STATUS0	Optional
4	STATUS1	Optional
5	STATUS2	Optional
6	MMOD	Optional
7	MREADH	4-digit number of the main display
8	MREADL	Optional
9	MSCOPE	Optional
10	MSTATUS	Optional
11	SMOD	Optional
12	SREADH	4-digit number of the sub display
13	SREADL	Optional
14	SSCOPE	Optional
15	SSTATUS	Optional
16	CR	0DH
17	LF	0AH

### • Description of STATUS0 (Block3)

Bit	Name	Description
0	HOLD	1: The Data Hold (HOLD) mode is active.
1	RELRF	1: The reference value display of the relative measurement is active.
2	REL	1: The relative measurement (Δ) is active.
3	CAL	1: The calibration mode is active.
4	SORT	1: The sorting mode is active.
5	AUTO LCR	1: The auto LCR mode is active.
6	AMOD	1: The automatic measurement mode is active.
7	MOD	0 : Series measurement 1 : Parallel measurement

### • Description of SMOD3 (Block11)

Bit	Name	Description
0		Mode in the sub display
1		000 : None, 001 : D (Dissipation factor)
2	SMOD	010 : Q (Quality factor) 011 : ESR or Rp (Equivalent resistance) 100 : θ (Phase angle)
3	N/A	Unused
4	N/A	Unused
5	N/A	Unused
6	N/A	Unused
7	N/A	Unused

### • Description of SREADH (Block12) / SREADL (Block13)

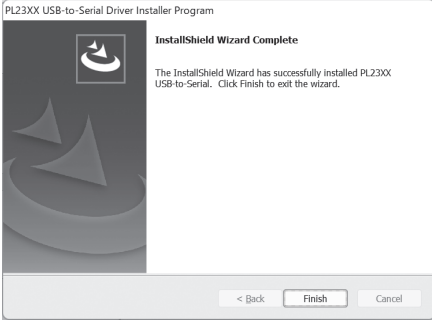
Bit	Name	Description
0~7	SREADL	16-bit binary data in the sub display
0~7	SREADH	Ex.) SREADH :1AH, SREADL : B5H ==>6,837

### • Description of SSCOPE (Block14)

Bit	Name	Description
0		Decimal point position (in the sub display)
1	SDOT	000 : 19999, 001 : 1999.9, 010 : 199.99 011 : 19.999, 100 : 1.9999
3		Unit of readings (in the sub display) 00000 : None, 00001 : Ω, 00010 : kΩ 00011 : MΩ, 00100 : None, 00101 : μH, 00110 : mH, 00111 : H, 01000 : kH, 01001 : pF, 01010 : nF, 01011 : μF, 01100 : mF, 01101 : %, 01110 : deg
4		
5	SUNIT	
6		
7		

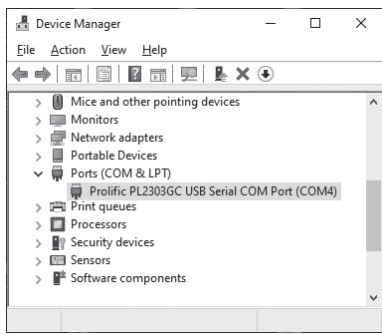
The product specifications and its appearance described in this manual are subject to change without prior notice for improvement or other reasons.

- 3) Click "Finish" to complete the driver installation.



### 4-2 Confirming the Device Driver

- 1) Connect the LCR-USB2 to a USB port on your PC.
- 2) Right-click the Start button on the Windows taskbar and select "Device Manager".
- 3) Open "Ports" (COM & LPT) and double-click "Prolific PL2303GC USB Serial COM Port". In the Properties window, confirm that the message "This device is working properly" is displayed.



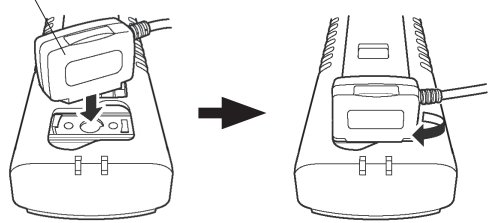
In this example, "COM4" is assigned as the COM port number. The port number may vary depending on the PC and the USB port used. If you change the PC or the USB port, reconfigure the port number in LCRLink (see section 5-2).

## [5] USAGE PROCEDURES

### 5-1 Connecting the LCR-USB2

When connecting the LCR-USB2 to the LCR700/LCR701, make sure that no input signal is applied to the LCR700/LCR701 and that its power is turned off.

#### USB optical communication unit (LCR-USB2)



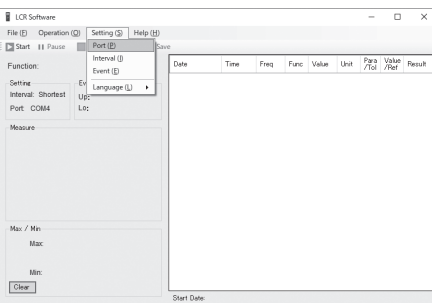
Firmly attach the LCR-USB2 to the back of the LCR700/LCR701. Connect the USB plug of the LCR-USB2 to the USB port of your PC. Turn on the power of the LCR700/LCR701, and then press the PC button to enable communication. At this time, "PC" will appear on the display of the LCR700/LCR701.

### 5-2 Using the LCRLink

Click "Start" → "All Programs" → "SANWA" → "LCRLinkSoft" to launch LCRLink.

First, set the port number.

Set the allocated port number by selecting "Setup" → "Select Port" in the LCRLink screen (see section 4-2).



For detailed instructions on using LCRLink, refer to the software help.

You can access it by clicking "Help" → "Contents" in the software or "Start" → "All Programs" → "SANWA" → "LCRLinkHelp" in the Windows Start menu.