



## Windows 10 Compatibility

This software is compatible with Windows 10.

The following system configuration and VISA library (Ver. 5.5 in the case of KI-VISA) are required to use this product on Windows 10.

For software installation, follow the respective instructions.

## APPLICABLE APPLICATION

- Wavy for PBZ
- PIA4800 Utilities
- SD002 BPChecker2000
- SD007-PFX BPChecker3000
- SD025-PMX

## SYSTEM REQUIREMENTS

- Core i5 or higher
- Windows 10
- 8 GB RAM (Minimum)
- 20 GB or more of free hard-disk space
- A display that supports 1024 x 768 or higher resolution (96 DPI)
- CD-ROM drive
- Mouse
- RS232C, USB, or LAN (depending on the interface to use)
- VISA library

If you want to use the software continuously over an extended period, expanding the RAM to 16 GB is recommend.

In case of using a USB serial converter for RS232C connection, the software may not function properly.

## VISA LIBRARY

To use this software, VISA library need to be installed on your PC.

VISA (Virtual Instrument Software Architecture) library is a standard specification for measurement instrument connection software, which was developed by VXIplug&play Systems Alliance.

A KIKUSUI original KI-VISA is available that supports IVI VISA specifications 5.0. If you want to use this software on Windows 10, download KI-VISA (Ver.5.5 or later) from the Kikusui Electronics Corporation website download page (<https://www.kikusui.co.jp/en/download/>).

The following other VISA libraries can also be used. Confirm the license terms of each VISA library before installation.

- NI-VISA by National Instruments (Ver.19.0 or later)
- Keysight IO Libraries Suite (Ver.2019 or later) by Keysight Technologies

If NI-VISA or Keysight IO Libraries Suite is already installed on your PC, you do not need to install KI-VISA.

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## Application Software

# SD007 BPChecker3000 Setup Guide

SD007 BPChecker3000 is a dedicated application software for the PFX2500 series Charge/Discharge System Controller or the PFX-R series Regenerative battery tester. BPChecker3000 enables you to set the conditions of the battery charge/discharge characteristics tests, execute the tests, and analyze the test results on a PC.

For instruction on how to use the BPChecker3000, refer to the HELP file.

### Product Version Covered

This setup guide covers BPChecker3000 version 2.x.

You can check the BPChecker3000 version in the HELP menu.

### Related manuals

For details on the PFX2500 series or the PFX-R series, refer to the operation manual.

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## Safety Precautions

Before using this application software, please thoroughly read the PFX2500/PFX-R series Operation Manual that describes the system hardware. Use extreme caution to make correct connections and handle the components of the system properly. Improper connections or handling can lead to serious accidents such as damage to or explosion of the DUT.

## System Requirements

To install and use the application software, you need the following hardware and software.

- OS: Windows Vista, Windows 7, or Windows 8.1 (On Windows 8.1, Internet access may be required.)  
OS language: Japanese or English
- Memory (RAM): 2 GB or greater
- Hard disk: 100 MB or greater of disk space
- Display monitor: must be capable of a minimum resolution of 1280 X 1024 or better
- CD-ROM Drive
- Mouse or other pointing device
- LAN and LAN cable
- Adobe Reader 6 or later (required to view the PDF version of the operation guide)

## Package Contents

The BPChecker3000 package contains the following items.

Name	Quantity
CD-ROM containing the program	1
SD007 BPChecker3000 Setup Guide (this guide)	1

For details on how to operate the software applications, click Help of the relevant application, or refer to the operation guide (PDF) on the CD-ROM.

## Notes on use

BPChecker3000 is used to load PFX2500/PFX-R series test data into the PC. To ensure that test data is loaded correctly, disable the following features on your PC during testing.

- Windows power-saving mode
- Screen saver
- Memory-resident programs

During testing, avoid operating other software applications.

## Installation

You need to log in as an administrator to install the software.

Exit all software applications that are running. If antivirus software is running, the installation may not be performed correctly. Turn off antivirus software while the installation is being performed. After the installation is complete, turn the antivirus software on.

### Installing the BPChecker3000

- 1. Insert the Program CD-ROM into the CD-ROM drive.**
- 2. Click “Installing the BPChecker3000”.**  
Insert the program CD-ROM in the drive, and click Run ShelExec.exe. The menu program window will appear. If the menu program window does not appear, open the CD-ROM folder in Windows Explorer, and then double-click index.html.
- 3. Double click “b3k\_full\_2\_x\_x\_xx.exe”.**  
The content of x differs depending on the version.
- 4. Follow the description on the display, proceed to install the application software.**  
If you want to install the software on Windows 8, the PC must have Microsoft .NET Framework installed. If it is not installed, a .NET installation message will appear.
- 5. If you installed the software on Windows 8, update the OS to the latest version.**  
This will update Microsoft .NET framework to the latest version.

### Uninstalling the BPChecker3000

Use Programs and Features of Control Panel to remove Kikusui BPChecker3000.

## Program Construction

When you install the BPChecker3000, four programs will be installed.

### IO Config

This program is used to set the model ID, IP address, and temperature chamber connection conditions.

### Test Condition Editor

This program is used to create and edit all test conditions related to charge/discharge tests.

### Test Executive

This program is used to execute charge/discharge tests according to the test conditions file that you created using the Test Condition Editor.

### Graph Viewer

This program is used to display graphs of the test data created by the Test Executive on the screen and print the graphs.

### Installing the VISA library

To use temperature chambers, a VISA library must be installed in your PC. VISA library is a specification for standard software that is used to connect instruments. VISA was defined by the IVI Foundation.

One of the VISA libraries below is necessary.

- NI-VISA by National Instruments (Ver. 4.0 or later)
- Keysight VISA by Keysight Technologies (formerly Agilent Technologies), Inc. (Keysight IO Libraries Suite 14.2 or later)
- KI-VISA Ver. 5.1.0 or later

### Installing KI-VISA

— Note —  
Do not install multiple VISA libraries on the same PC. Doing so may cause errors.  
KI-VISA is not required if NI-VISA or Keysight VISA is already installed.

KI-VISA is Kikusui's original VISA library that supports the VXIplug&play VISA specifications. You can download the most recent version of this library from the Kikusui Electronics Corporation website (<http://www.kikusui.co.jp/download/>).

## Before Using BPChecker3000

To perform charge/discharge test with BPChecker3000, you must prepare the PFX2500/PFX-R series in advance. For details, see the PFX2500/PFX-R series operation manual.

- 1. If you want to use the optional 8 Slot Unit (SL01-PFX), connect it to the PFX2500.**
- 2. If you want to use the optional Volt/Thermometer Unit (OP01-PFX) or Voltmeter Unit (OP02-PFX), connect it to the PFX2500/PFX-R.**
- 3. Connect the PFX2500/PFX-R, DC power supply, and load.**
- 4. Reset the DC power supply and load to their factory default settings, and configure the protection functions and external control. Set the slew rate for the load. If you want to use boosters, set the number of master and booster units.**  
After configuration, we recommend that you enable the panel lock.
- 5. Set the PFX2500/PFX-R channel number.**  
If you are using only the PFX2500/PFX-R by itself, this is not necessary.
- 6. Connect the PFX2500/PFX-R to a PC.**  
If you need to use a fixed IP address, use BPChecker3000 to set it.
- 7. If you need to use a fixed IP address, use BPChecker3000 to set it.**

This completes the preparation of the PFX2500/PFX-R. You can set the test conditions with BPChecker3000 and perform charge/discharge tests.

## Flow of Test Procedure

If you are using BPChecker3000 for the first time, carry out the following procedure.

### 1 Configure the hardware.

On the taskbar, click Start, All Programs, Kikusui BPChecker3000, and IO Config to start the IO Config program.

If a security warning window appears at startup, specify the following settings.

Private network: Allow

Public network: Not allow

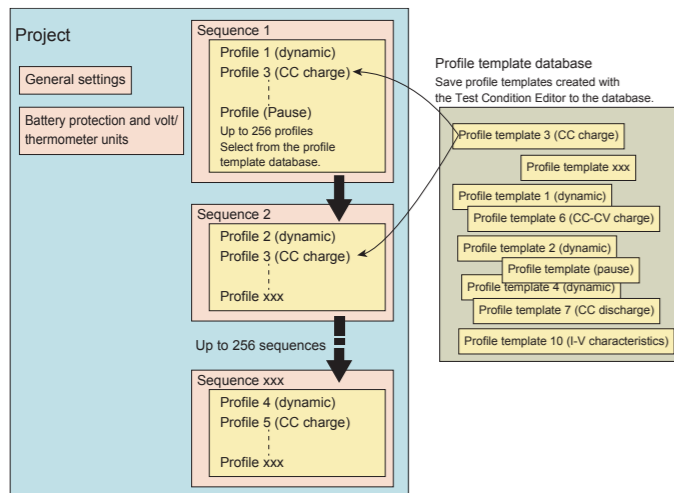
Specify the channel that you want to configure, and then set the PFX2500/PFX-R series model ID.

If you want to use a fixed IP address, set the PFX2500/PFX-R series IP address.

If you want to use temperature chambers, set the temperature chamber driver, VISA resource, and the number of temperature chambers.

### 2 Configure the profile and project.

In a charge/discharge test using BPChecker, the sequences in the project are executed in order. Projects and profiles are created using the Test Condition Editor.



— Note —

#### Project

Set the model information, general settings, and sequences in projects. SD007 executes charge/discharge test at the project level.

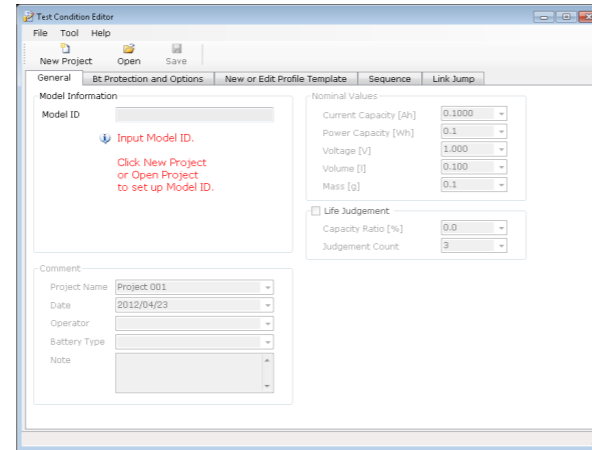
#### Profile template

Set detailed charge/discharge conditions in profile templates.

When you finish configuring a profile template, assign a name to the template and save it in the profile template database. Profile templates that are saved can be used in other projects.

### 1. Start the Test Condition Editor.

On the taskbar, click Start, All Programs, Kikusui BPChecker3000, and Test Condition Editor to start the Test Condition Editor program.



### 2. Create a new project.

Set the model ID. Specify whether the OP02-PFX option will be used.

### 3. Open the Profile Editor.

First, create a profile. If you are going to use an existing profile, you don't have to create a new one.

### 4. Select the profile type, and then configure the profile template details.

Type	Description
Pattern	Up to 1000 steps of Charge/discharge patterns (CC, CP, and Pause) can be configured. For each step, you can specify the CC current and CP power.
CC Charge	CC Charge -> Pause -> End
CC-CV Charge	CC-CV Charge -> Pause -> End
CC Discharge	CC Discharge -> Pause -> End
CP Discharge	CP Discharge -> Pause -> End
I-V Characteristics	Up to 1000 steps of charge/discharge patterns (CC Charge, CC Discharge, and Pause) can be configured.
Pause	Pauses the charge/discharge test

You can enter profile template information in the Category 1 and Category 2 text boxes. You can use these as filters to narrow down the test results that are displayed in the Graph Viewer.

### 5. Save the profile template, and close the Profile Editor.

Profile templates are stored in the profile template database. You can use the stored templates in other projects.

When you are finished with creating the template, configure the project details.

### 6. Configure nominal values, life judgment, protection functions, cell voltages, etc.

### 7. Configure a sequence.

Configure a sequence by selecting profile templates from the profile template database. Set the number of sequence repetitions and the chain feature.

### 8. Assign a name to the project and save.

You have finished creating a project. You can now start a charge/discharge test using Test Executive.

### 3 Execute the test.

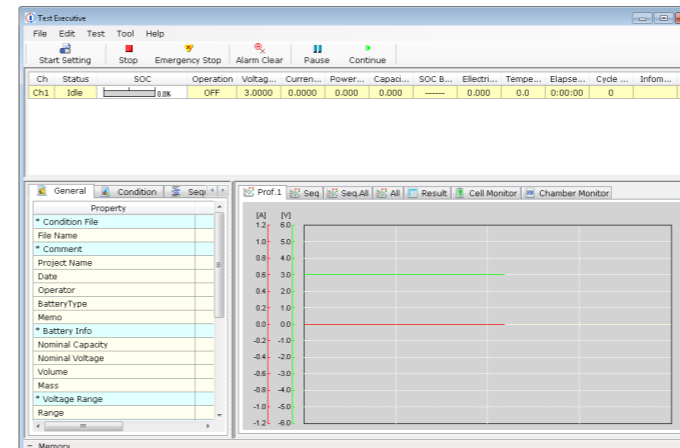
Execute the test on the Test Executive using the project that you configured with the Test Condition Editor.

To synchronize temperature chambers, turn on all the temperature chambers before starting Test Executive.

### 1. Start the Test Executive.

On the taskbar, click Start, All Programs, Kikusui BPChecker3000, and Test Executive.

Before the Test Executive starts, a system and temperature chamber configuration window opens. Check the information, and click OK to start the Test Executive.



### 2. Assign test conditions.

Select the channels you want to test, and assign test condition files and temperature chambers. When you assign a test condition, the Test Start button becomes available.

### 3. Start the test.

When all the scheduled tests in the project are complete, the test is complete.

A folder with the same name as the test condition file is created in the same folder as the test condition file, and test result files are saved in the created folder.

### 4 Analyze the test.

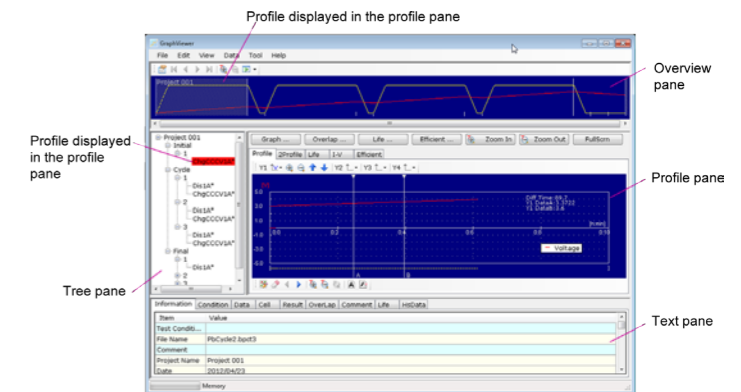
Display the test result file created by the Test Executive on graphs in the Graph Viewer. In addition to test data graphs, test data values, energy and other computed values determined from test data, and test conditions can be displayed allowing you to analyze data comprehensively. Multiple graphs can be overlapped.

### 1. Start the Graph Viewer.

On the taskbar, click Start, All Programs, Kikusui BPChecker3000, and Graph Viewer.

### 2. Open a test result file that you created using the Test Executive.

Select the profiles to display in the Profile Pane from the Overview Pane or Project Pane.



### Displaying Graphs in the Profile Pane

Profile Pane displays the profiles that you specify in the Overview Pane or Project Pane.

The pane can display two profiles side by side, I-V characteristics, overlapped graphs, and life graphs.

You can specify conditions and search through the profiles in a project to display specific life graphs and overlapped graphs in the Profile Pane. If you entered information in the Category 1 and Category 2 text boxes in the Profile Editor of the Test Condition Editor, you can use the information to search through the profiles.

