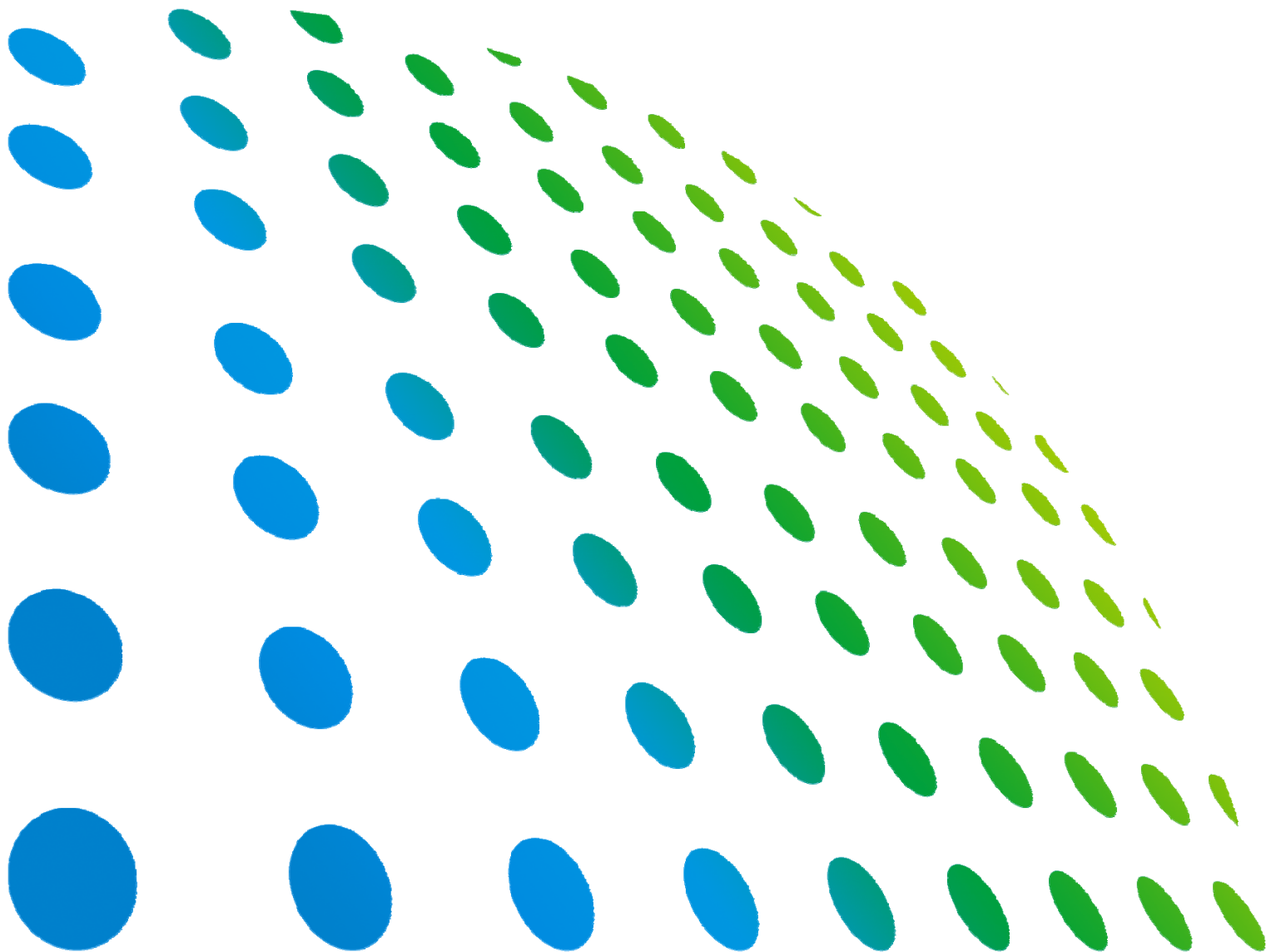




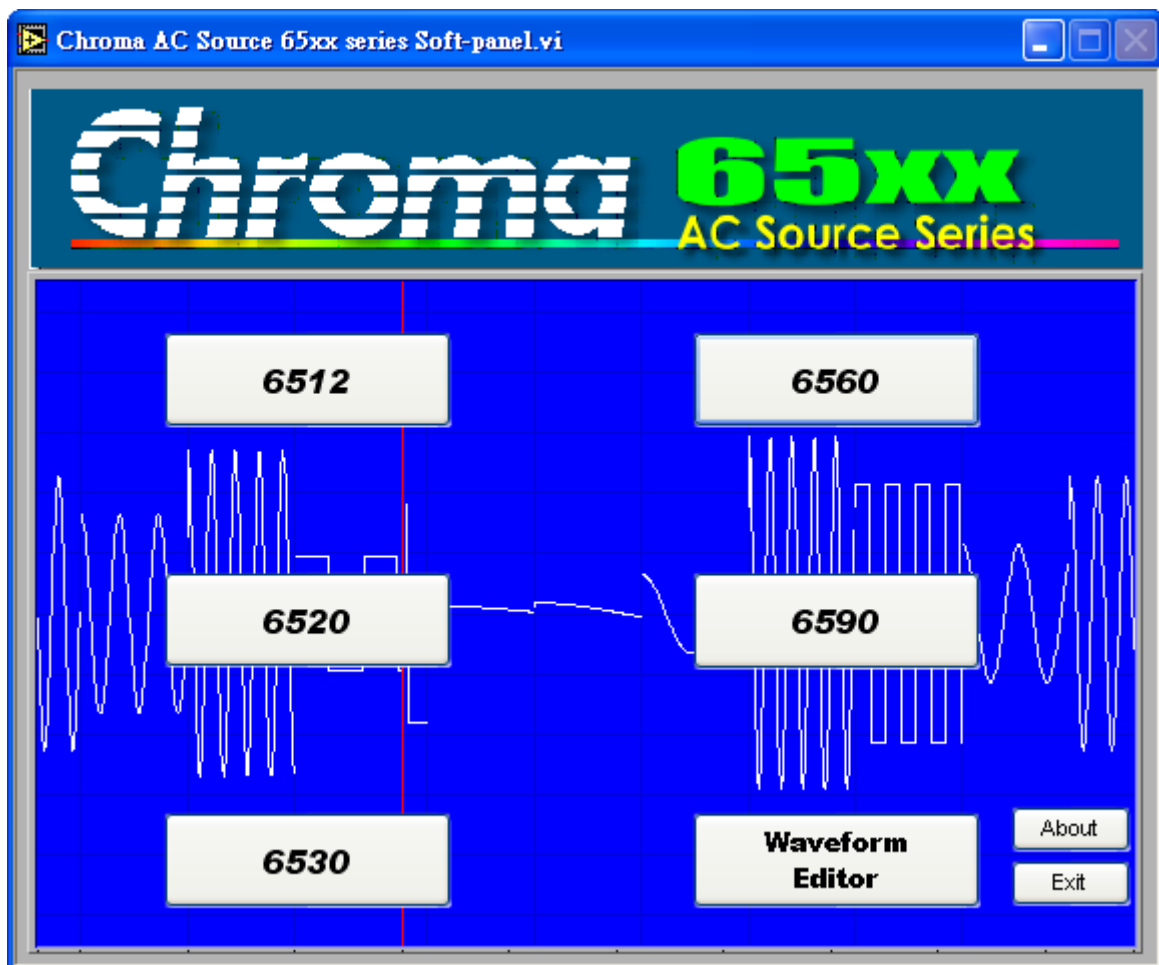
Programmable AC Source

65xx Series

Soft Panel User's Manual



Programmable AC Source 65xx Series Soft Panel User's Manual



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CHROMA ATE INC.

66 Hwaya 1st Rd., Kueishan Hwaya Technology Park, Taoyuan County 33383, Taiwan

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CHROMA ATE INC.

66 Hwaya 1st Rd., Kueishan Hwaya Technology Park,
Taoyuan County 33383, Taiwan

Tel: 886-3-327-9999

Fax: 886-3-327-2886

e-mail: info@chromaate.com

<http://www.chromaate.com>

Revision History

The following lists the additions, deletions and modifications in this manual at each revision.

Date	Version	Revised Sections
Apr. 2003	1.0	Complete the manual.
Aug 2003	1.1	Modify "Files in CD" Modify "Installation Procedure" and "Installing NI VISA" Modify "Starting" in "Starting Chroma AC Source 65xx Soft Panel" Modify "Function Description" and "Function Key Description" in "Chroma AC Source Waveform Editor"
Sep. 2012	1.2	Update the description of " <i>Installation Procedure</i> " Update the soft panel screens, functions and their descriptions

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1. System Structure

This chapter explains the structure and functions of Chroma 65xx Soft Panel application. The supported instruments and communication interfaces are listed below for you to identify the required environment easily.

1.1 Introduction

This software is applicable to CHROMA AC Source 65xx Series only. The remote transmission between PC and AC Source must be active before using the software in order to communicate by commands.

The software application can perform internal parameter settings for AC Source and monitor the output measurement. Another feature of the application is to preview the simulated output waveform. Before sending the parameters set for voltage frequency, the screen will display an output waveform element for previewing the waveform. Once the waveform is confirmed by the user, the voltage will be sent. In addition the software is able to save the parameter settings so that users can open an existing file for execution from hard disk easily.

1.2 Supported Hardware

Chroma 65XX Series Programmable AC Sources contain the following models:

- a. 6512
- b. 6520
- c. 6530
- d. 6560
- e. 6590

1.3 Communication Interface

There are two types of communication interfaces between PC and AC Sources:

- a. GPIB
- b. RS232

1.4 Software & Hardware Requirements

The soft panel program is quite large; therefore, the following PC software and hardware environments are suggested.

- Intel CPU 2GHz or above
- Microsoft Windows 98 (Second edition), XP
- 20GB hard disk space at least
- 256 MB memory at least
- VGA or SVGA color monitor
- PS2 mouse

2. Installation

First install the Chroma 65xx Soft Panel software to the hard disk on PC before using it. This chapter describes how to install the software on Windows step by step.

- Ensure there is at least 256MB or above hard disk space on PC.
- Insert the software CD into the CD drive.

2.1 Files in CD

The CD contains the files shown in Figure 2-1.

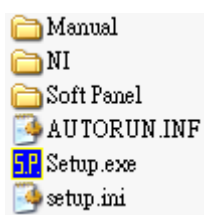


Figure 2-1 Files in CD

2.2 Installation Procedure

Please execute Setup.exe file in CD to start the installation. The installation main screen appears as Figure 2-2. Click “**Chroma 6500 Soft Panel**” to proceed with the installation.

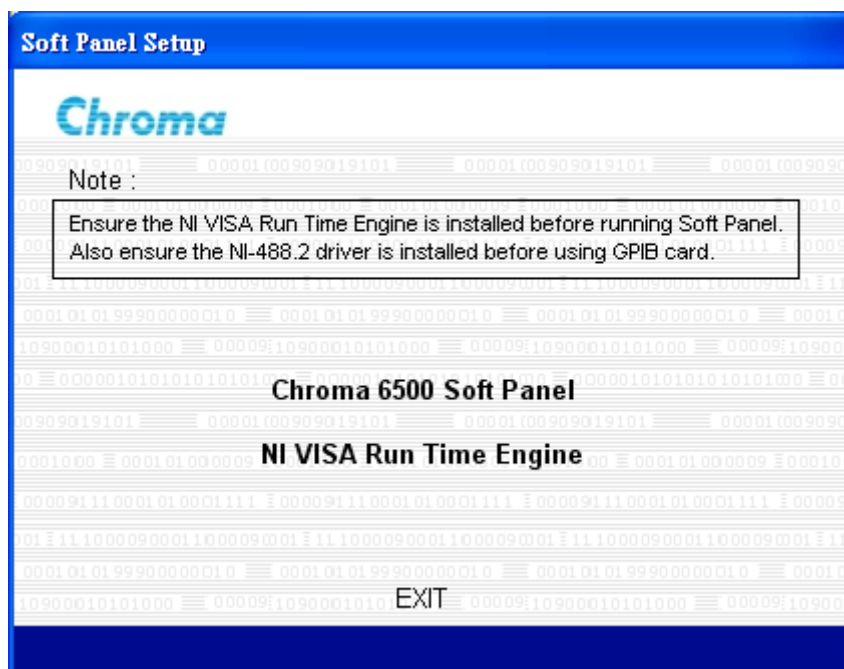


Figure 2-2 65XX Soft Panel Installation Setup Main Screen

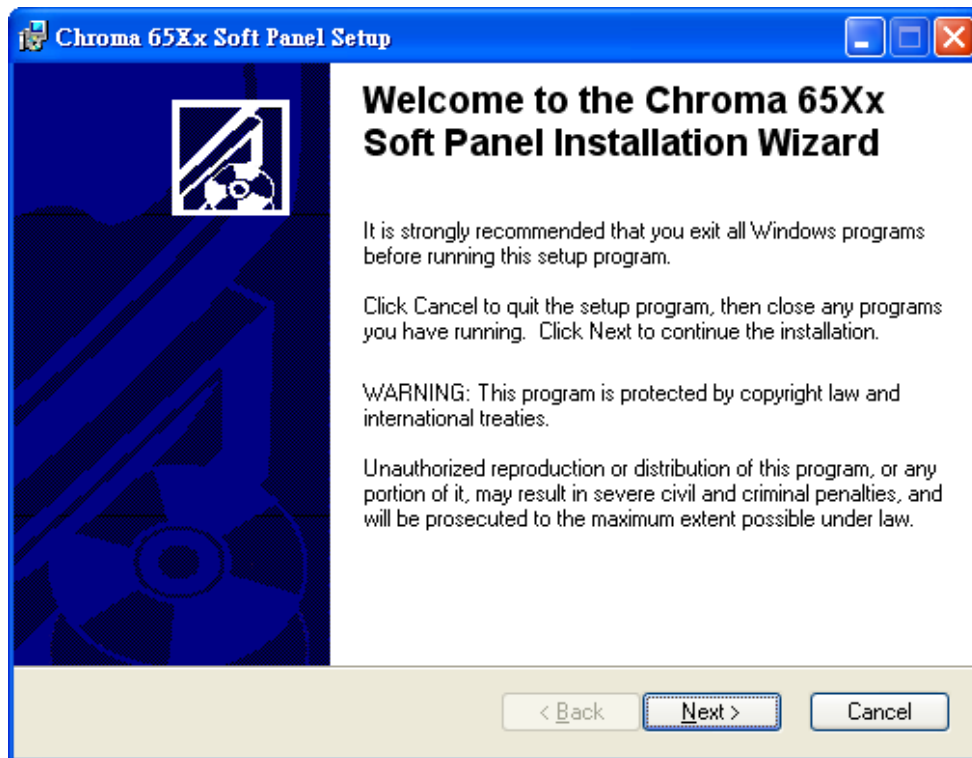


Figure 2-3 65xx Soft Panel Installation Wizard

2.2.1 Installing Chroma 65xx System Software

Click **Chroma 65XX System Software**, the installation screen prompts as Figure 2-4.

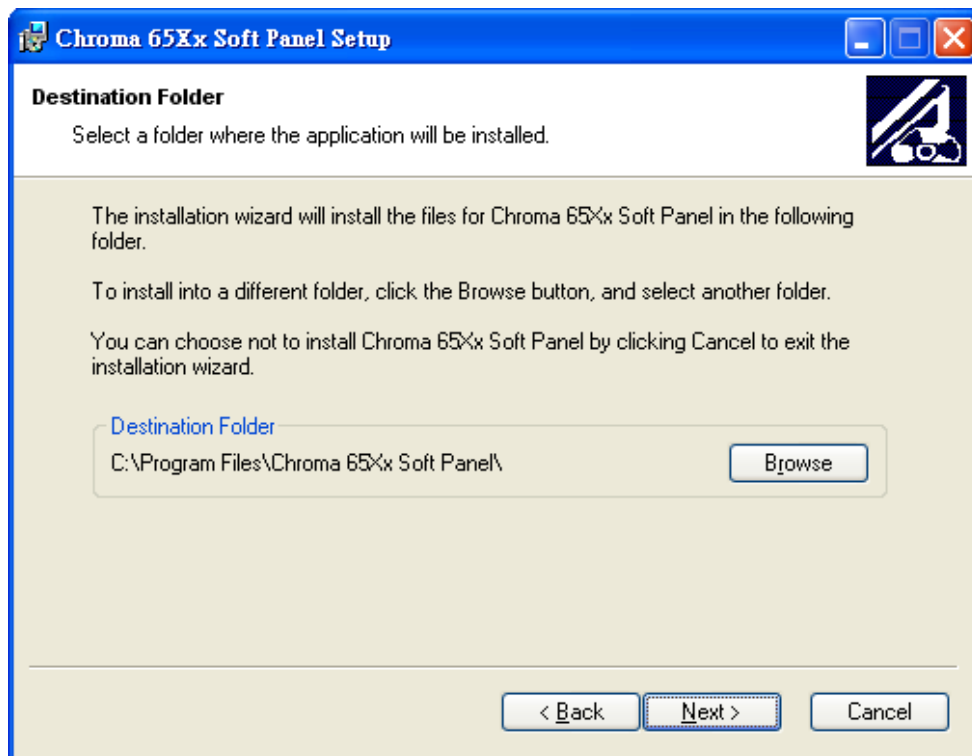


Figure 2-4 Installing Chroma 65xx Soft Panel

- As Figure 2-4 shows, the program is default installed in C:\Program Files directory. If the directory path needs to be changed click **Browse** and specify the path for installation.
- Click **Next** to proceed with the installation as Figure 2-5 shows.

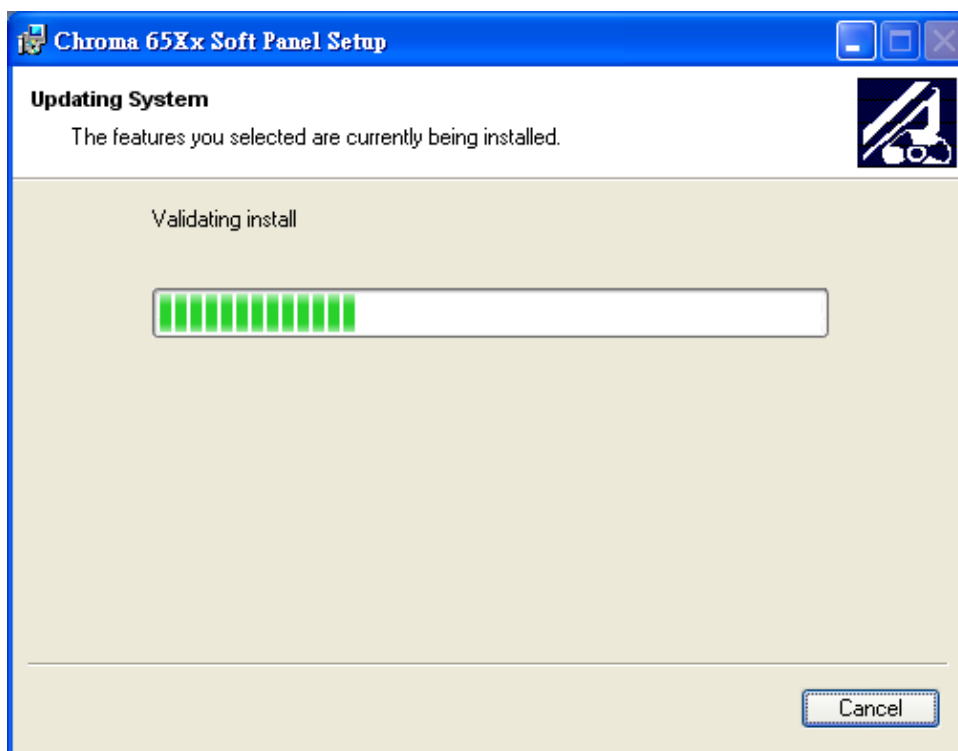


Figure 2-5 Installation Proceeding Screen

- When the installation is done, the screen appears as Figure 2-6.

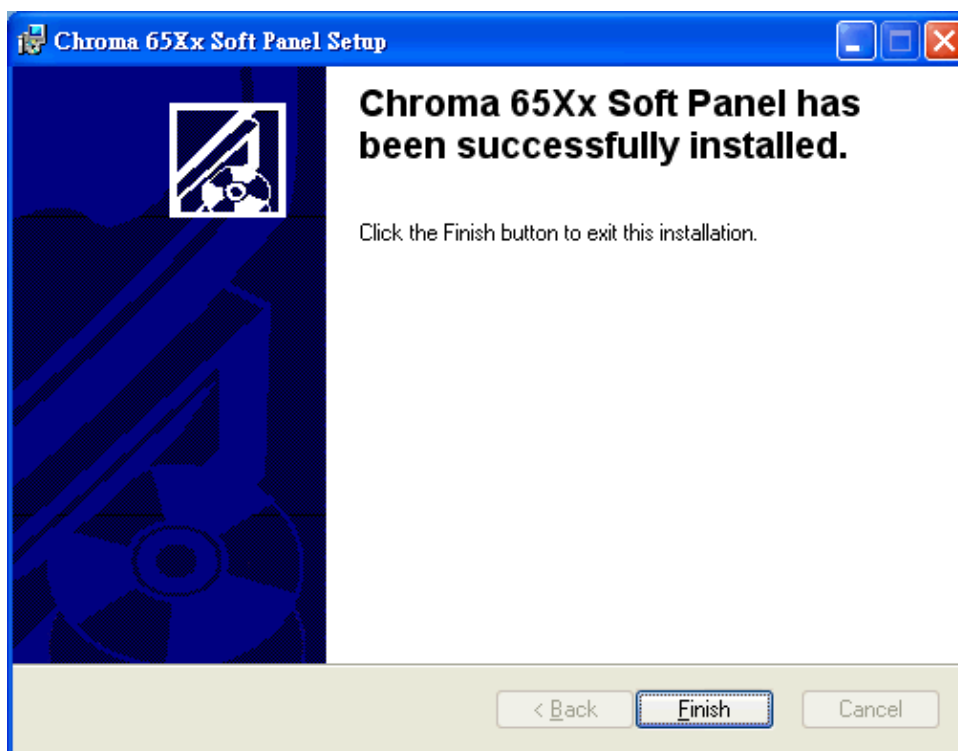


Figure 2-6 Installation Complete Screen

2.2.2 Installing NI VISA

The Soft Panel installation disk has NI VISA Run Time Engine 3.0 and 4.1 (default installation version) placed in NI directory. Though these two versions are tested valid by Chroma, the user still can follow the Operating System installed to select the suitable VISA version. Other related information, see the web side <http://www.ni.com/support/zht/>. Please ignore this section if NI VISA Run Time Engine driver has been installed.

1. To install NI VISA 4.1 driver, double-click **NI VISA Run Time Engine** in Figure 2-2 and after the program is initialized, it will prompt the installation as Figure 2-7 shows.

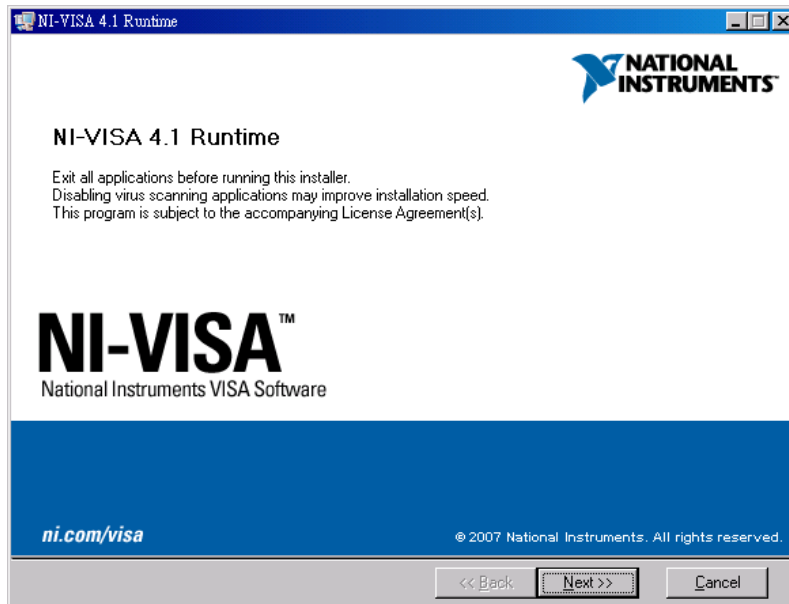


Figure 2-7 Installation Screen of NI VISA Ver. 4.1 Driver

2. It is suggested to end the other running applications first, and then click **Next >>** to start the installation. It will enter into the next installation procedure and ask the user for installation path as Figure 2-8 shows.

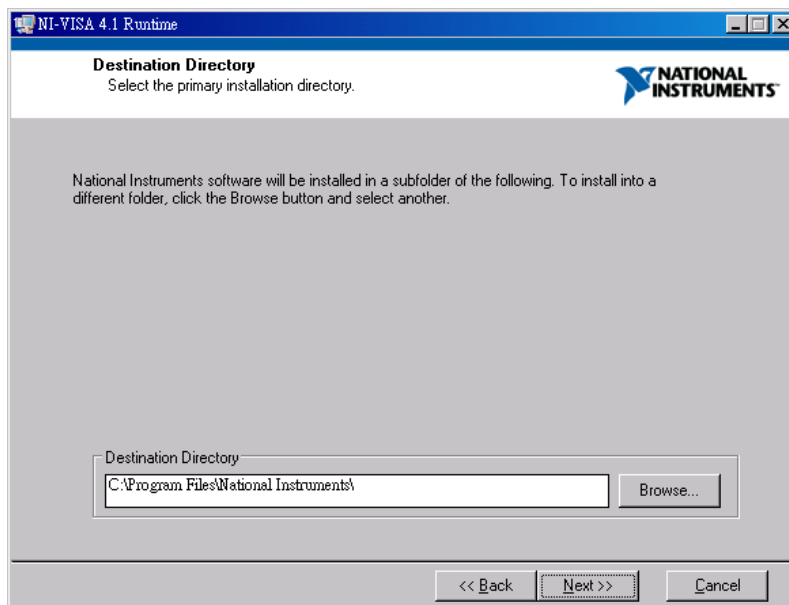


Figure 2-8 Setting Destination Directory for Installation

3. Follow the prompt message to click **Next >>** and complete the installation procedure as Figure 2-9.

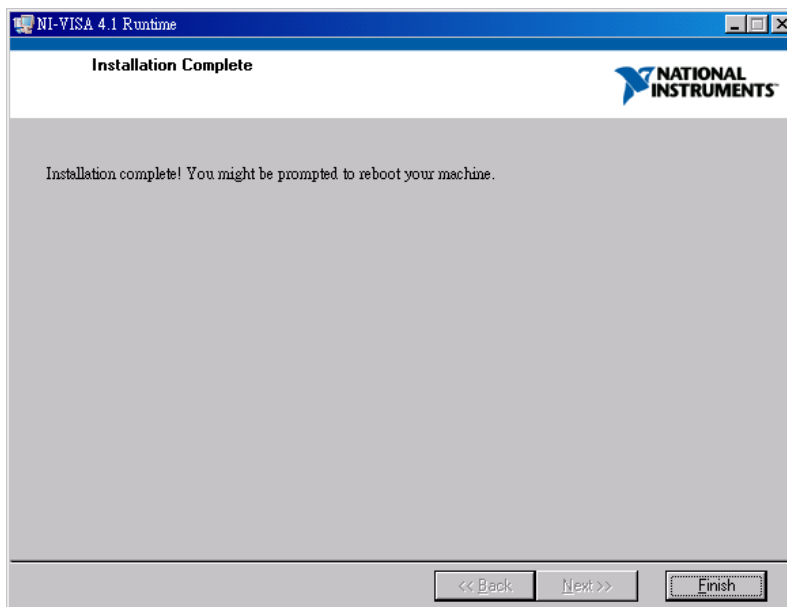


Figure 2-9 Screen of Installation Complete

4. Whenever the Operating System is updated, the supported NI VISA driver has to be updated as well. Please see the web side <http://www.ni.com/support/zht/> to see the associated link for download.

2.3 Installing GPIB Interface Driver

Follow the steps listed in the User's Manual of GPIB Interface Driver for installation.

2.4 Uninstalling Chroma 65xx Soft Panel Software

To remove the Chroma 65XX Soft Panel software, it is suggested to click **Start**→**Settings**→**Control Panel**→**Add/Remove Programs** to uninstall the related program of Chroma 65XX Soft Panel.

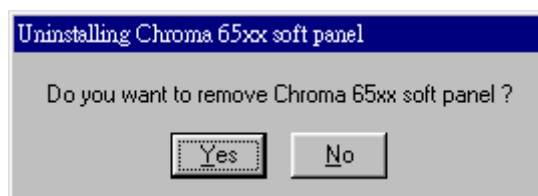


Figure 2-10 Removing the Chroma 65xx Soft Panel

3. Starting Chroma AC Source 65xx Series Soft Panel

3.1 Starting

After the installation is done, click **Start→Programs→Chroma 65xx Soft Panel** will prompt the start screen as Figure 3-1 shows.

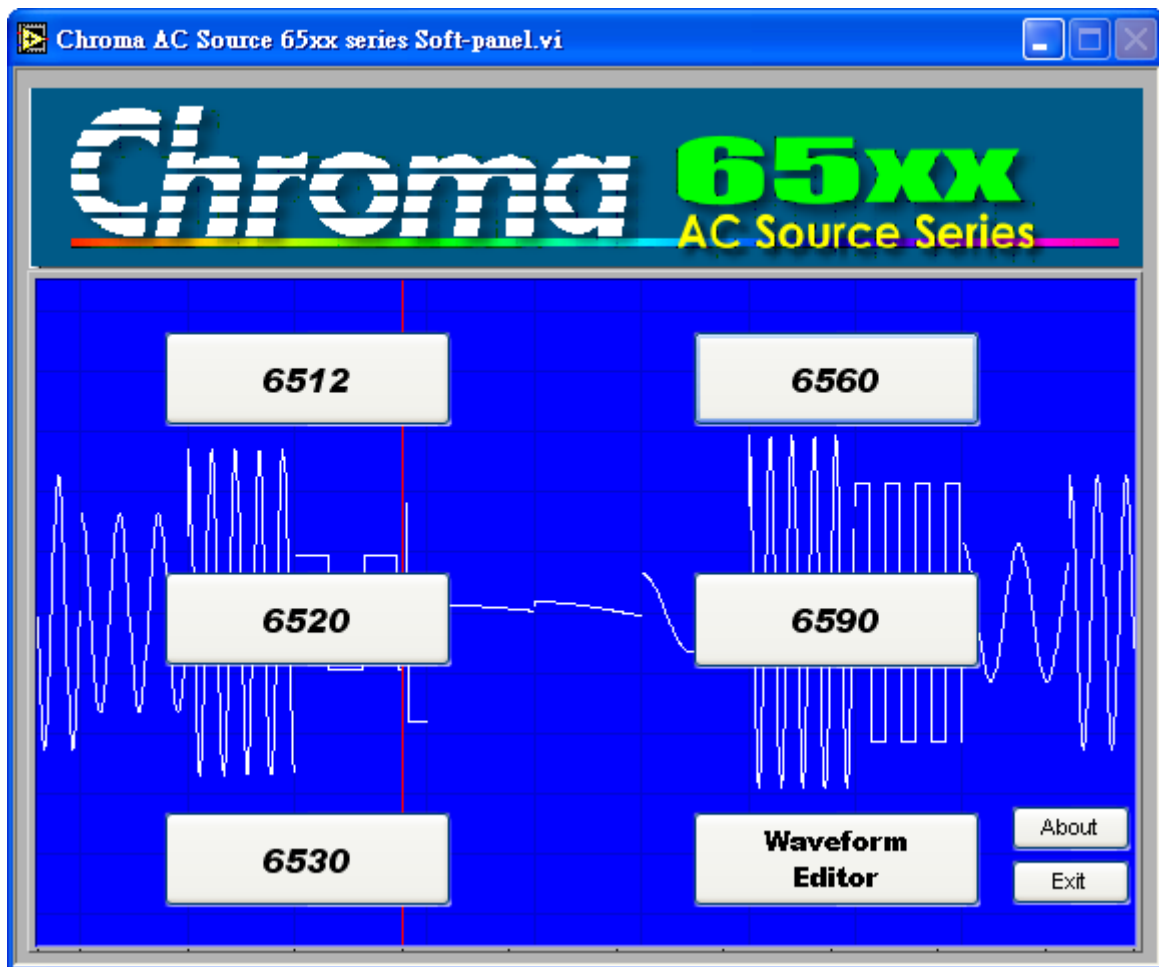


Figure 3-1 Soft Panel Start-up Screen

Description of Function Keys:

- 6512: Click it to enter into the control mode when using the AC Source of Chroma 6512.
- 6520: Click it to enter into the control mode when using the AC Source of Chroma 6520.
- 6530: Click it to enter into the control mode when using the AC Source of Chroma 6530.
- 6560: Click it to enter into the control mode when using the AC Source of Chroma 6560.
- 6590: Click it to enter into the control mode when using the AC Source of Chroma 6590.
- Waveform Editor: Click it to enter into the control mode when using the AC Source of Chroma 65xx for US01~US06.
- About: Click it to check the version number.
- Exit: Quit the execution program.

3.2 Unit Control Screen

When one of the above function keys is clicked, it will enter into the unit control screen as Figure 3-2 shows. Click 6530 for instance:



Figure 3-2 Initial Screen of Unit Control

First select the communication interface and set the correct protocol parameters, for example Address for GPIB, and Com Port, Baud Rate and Parity for RS232 as Figure 3-3 shows. Press **Set OK** when the setting is done to enter into the screen as Figure 3-4 shows. To modify the communication protocol or parameter, it is necessary to exit the control panel and re-enter again.

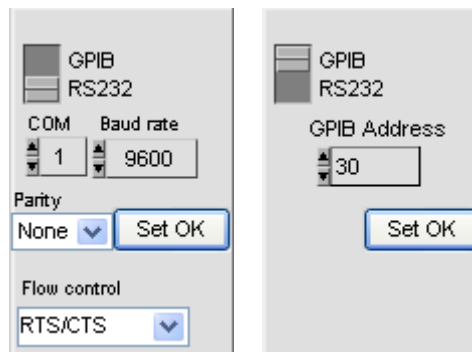


Figure 3-3 Setting Communication Protocol

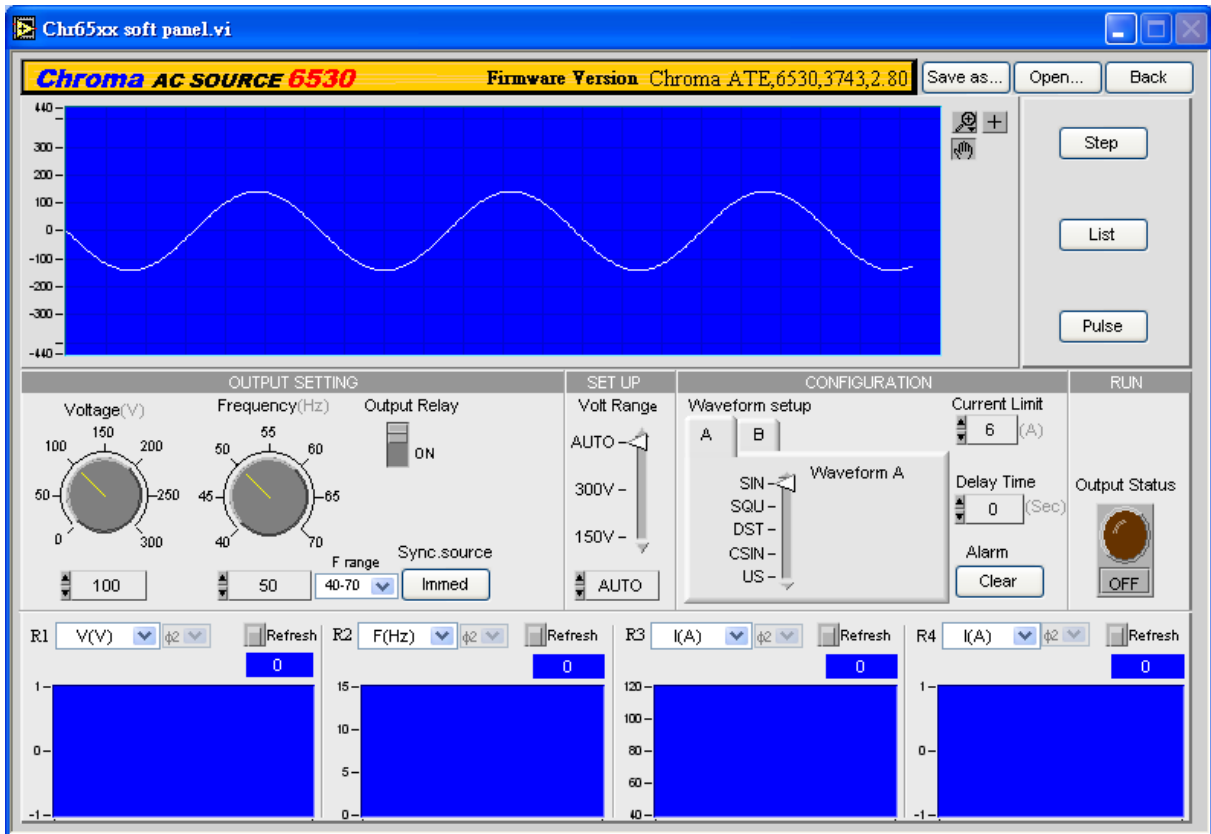


Figure 3-4 Main Control Panel

Check if the instrument is connected in the unit control initial screen. If yes, the Firmware Version number will appear as Figure 3-5 shows such as Chroma ATE,6530,3743,2.80.



Figure 3-5 Firmware Version on the Unit Control Initial Screen

If the instrument is not connected, ERROR will appear for the Firmware Version as Figure 3-6 shows:



Figure 3-6 Error Appears When No Instrument is Connected

Check if the communication interface and its parameter settings are correct when error appears.

3.2.1 Function Key Description

1. Simulation Output Window:

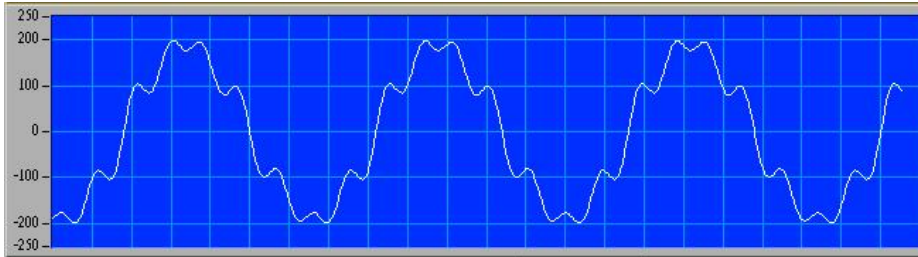




Figure 3-7 Simulation Output Window





The main function of this window is: It is able to predict the present output status once the input is changed before the instrument output is not turned on. The function is similar to a DSO that is connected to the instrument output terminal. It can simulate the changes between the settings and output at any time so that users can easily know if the settings are correct or meet the requirements.

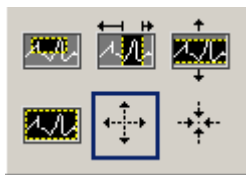
This window simulates the result with or without output voltage from the instrument.


Graph tools: They are normal , zoom in  and move  which are explained below.

Normal : No action will be performed on Waveform Chart. Click the button will return to normal.

Zoom In : It has 5 zoom in and 1 zoom out functions as the figure shown below. The

yellow part in  and  can zoom in partially by click-and-drag the mouse. The  means to zoom in the area clicked by the mouse while  means to zoom out the area clicked by the mouse.



Move : Select this function can move the waveform up and down or left and right by click-and-hold Waveform, which means to change the view position but not the scale.

2. **Output Setting:** There are Voltage, Frequency, Output Relay, and Sync. source 4 parameters for setting.

Voltage: Set the output voltage.

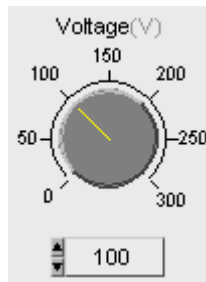


Figure 3-8 Setting Output Voltage

Frequency: Set the output frequency.

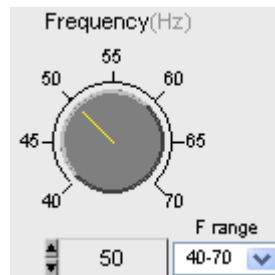


Figure 3-9 Setting the Output Frequency

Set F Range: Set the Range for frequency. This setting does not give commands to the instrument. Its main purpose is to let users set the frequency easily. For instance, the frequently used frequency is 40-70Hz.

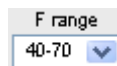


Figure 3-10 Setting the Frequency Range

Output Relay: This is to set the Output Relay to ON or OFF. If it is set to OFF, the Relay hookup sound will be heard when the Output is On every time. The release sound can be heard when the Output is Off.



Figure 3-11 Preset the Relay On or Off

Sync. source: It can select the turn on phase degree. If **Immed:** is selected it indicates the turn on phase is set immediately according to instrument as Figure 3-12 shows. Phase can also be selected and for a turn on phase degree setting as Figure 3-13 shows.

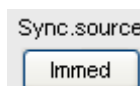


Figure 3-12 Select the Turn On Phase to be Immediate

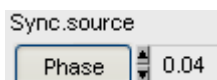


Figure 3-13 Set the Turn on Phase to 0.04 Degree

3. **SET UP:** The Volt Range sets the instrument voltage ranges to AUTO, 300V or 150V. Users can hear the Relay switch sound. If Auto is set, the output Relay is defined by the voltage set. If output 120V is set, the Relay will switch at 150V. It will affect the output current level.

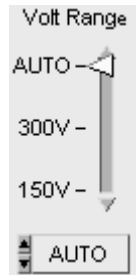


Figure 3-14 Set the Output Voltage Range

4. **Configuration:** There are Waveform A, Waveform B and Waveform setup 3 parameters. Waveform A: It sets the output waveform. For instance, to set DST17 for output, select DST, a number box will appear for parameter input and then type 17 to set it.

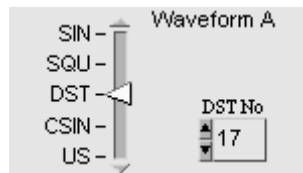


Figure 3-15 Set the Output Voltage Waveform

The setting of Waveform B is same as Waveform A.

Waveform Setup: It sets up which waveform is to be used when Waveform A and Waveform B are set. The two output functions can be switched.

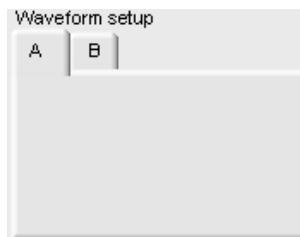


Figure 3-16 Select Waveform A or Waveform B for Output Waveform

The Waveform Setup sets the waveform used by output, and the parameters of another Waveform Setup can be done beforehand for reference by other mode.

5. **RUN:** It sets the Output Status to be ON or OFF to control the instrument for sending out voltage. The Display area has readings returned only when the Output Status is ON.



Figure 3-17 Voltage Output Button

6. **MODE:** There are Step, List, and Pulse Mode 3 modes.
Step: Click it to go to Step Mode control screen.
List: Click it to go to List Mode control screen.
Pulse: Click it to go to Pulse Mode control screen.

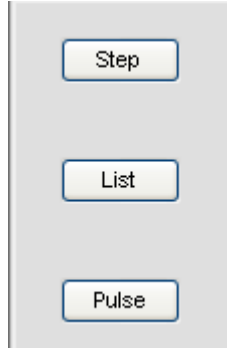


Figure 3-18 Mode Selections

7. **Protection:** There Output current limit, Delay time, and Clear for selection.
 Output current limit: It sets the maximum limit of output current. It goes into protection mode when it exceeds the limit.

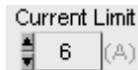


Figure 3-19 Set the Output Voltage Maximum Limit

Delay Times(s): It sets the time delayed for instrument to alarm when the output current exceeds the limit.

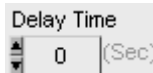


Figure 3-20 Set the Time Delayed

Alarm: It clears the alarm.

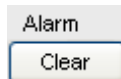


Figure 3-21 Clear the Alarm

8. **Back:** Click this button to exit the execution screen and return the previous one.
9. **Display:** It displays the read back readings. This function only activates when the Output status is ON.



Figure 3-22 "ON" for Output Status

To monitor the voltage, select the reading by clicking the mouse as Figure 3-23 shows. The settings from R1~R4 are the same.

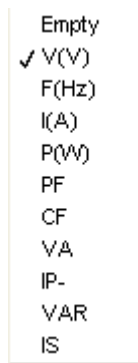



Figure 3-23 Select the Measured Output Voltage for Reading to Read Back

Note  is the Phase selection that is valid in 6560 and 6590.

Refresh: It clears the Reading Chart.

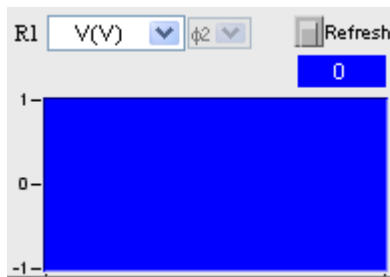


Figure 3-24 Reading Display Screen

10. **Save as...**: Click this button can save the current settings to a .fixed file. This function allows users to open the saved .fixed file to save the setting procedures.

If users wish to save the parameters used presently in the 6530 Soft Panel so that they can be opened directly, click **Save as...** to open a dialog box as Figure 3-25 shows. Select the path for storing the file and give it a filename (the file extension .6530fixed will be added according to model no.) Users can use this function to save the settings to different files and they may take some hard disk space. Various files may be saved as long as the disk space is big enough.

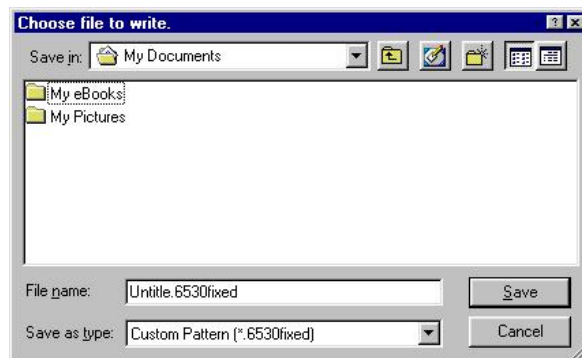
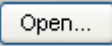


Figure 3-25 The Dialog Box for Saving File

11. : Click this button can open the file (with extension .6530fixed) saved in hard disk. This can simplify the parameter input and avoid errors from occurring.

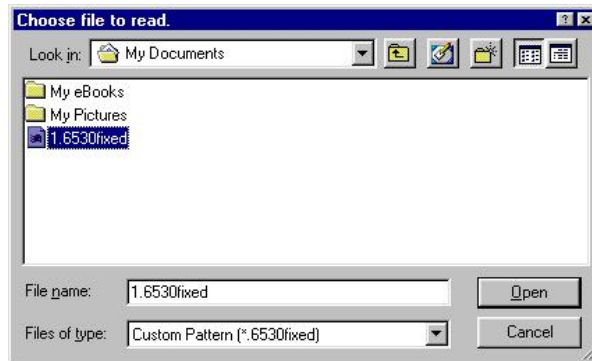


Figure 3-26 Dialog Box for Opening File

3.3 Others

3.3.1 6560 Main Panel

Model 6560 is high voltage mode that can set for series or parallel output. When it is set for series output, the output range is 0~500V with frequency range from 45Hz to 1000Hz. There is no Auto range for Model 6530. It cannot switch Waveform A and B when in List Mode; however, it has phase selection for readings.

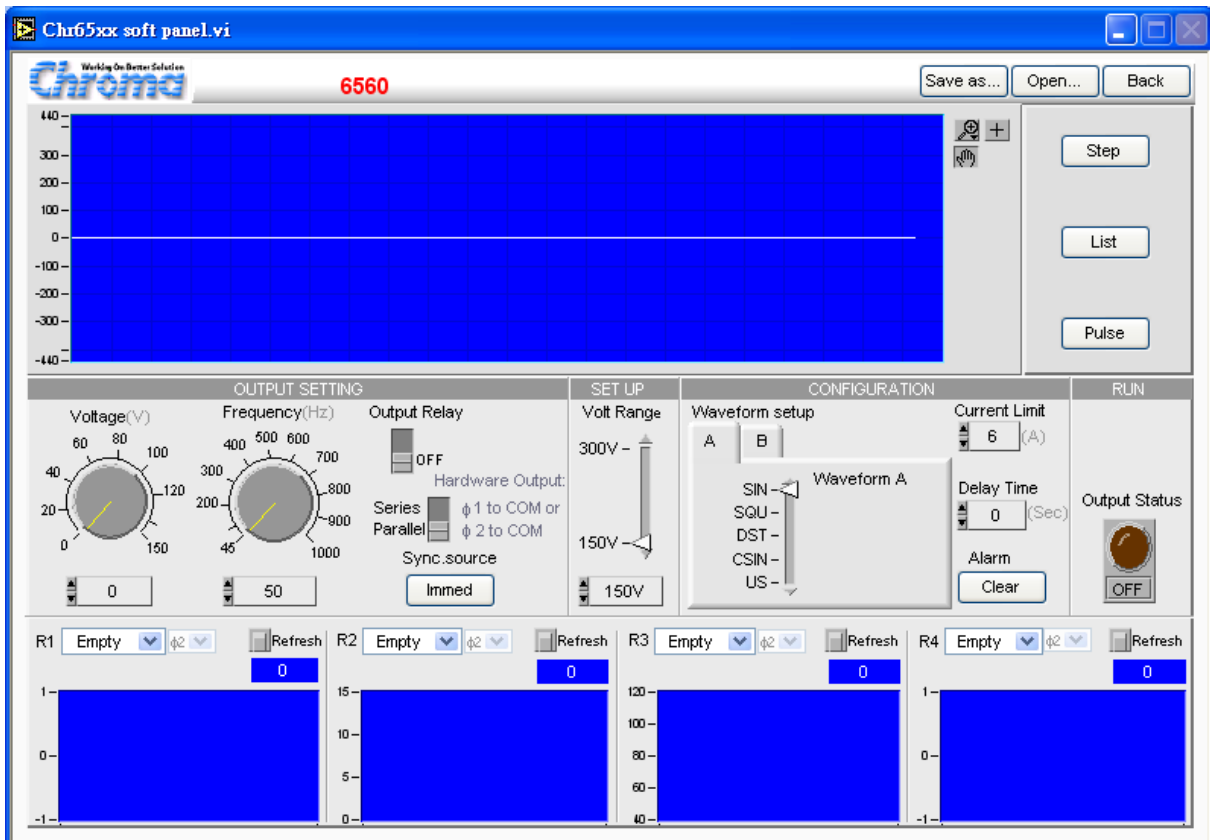


Figure 3-27 6560 Main Panel

3.3.2 6590 Main Panel

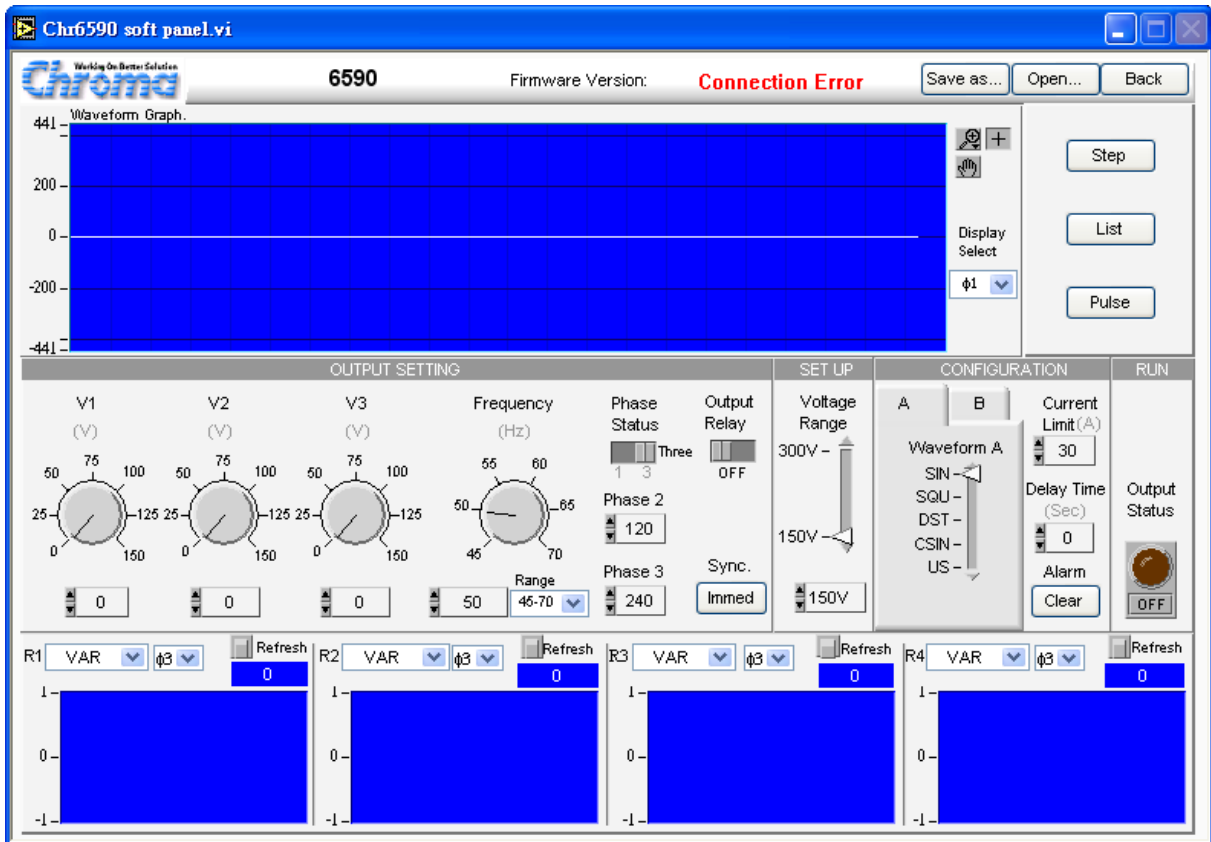
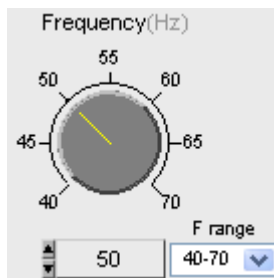


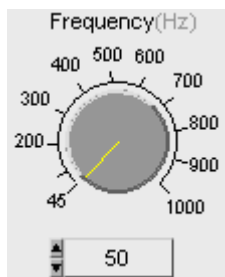
Figure 3-28 6590 Main Panel

Discrepancies among 6590, 6560 and 6530:

1. The setting range of frequency for 6560 and 6590 is different.



6530: 15~2000Hz.

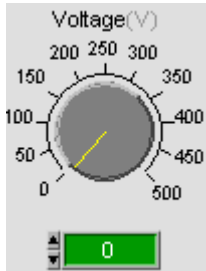


6560, 6590: 45 ~1000Hz.

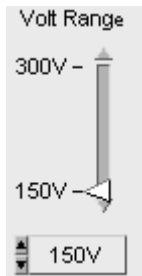
- 6560 has additional Series and Parallel selections.



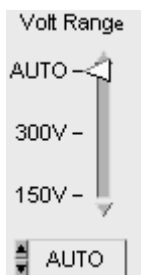
When Series is selected and the Voltage Range is in 300V, the voltage setting range is 0 ~ 500V.



- 6560 and 6590 have no Auto selection in Voltage Range.

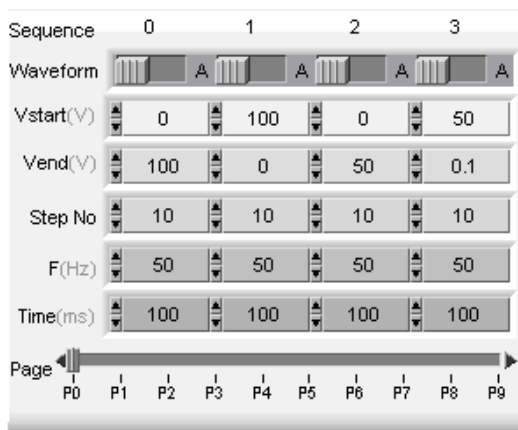


Voltage Range for 6560, 6590: 150V, 300V.

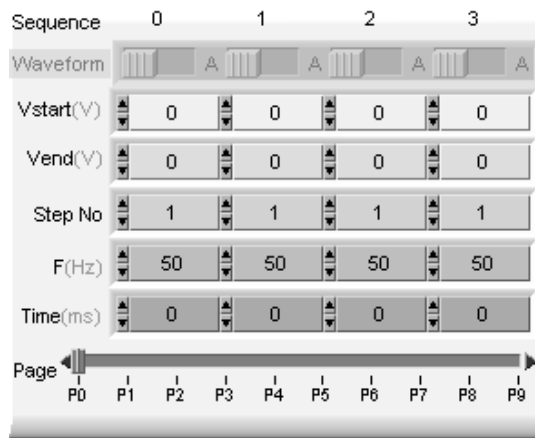


Voltage Range for 6530, 6520, 65125: 150V, 300V and Auto.

- 6560 and 6590 are unable to select Waveform A or B in Step, List and Pulse Panel.

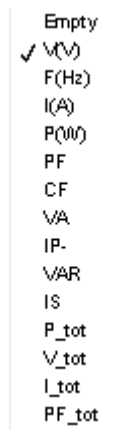


6530, 6520, 65125: It can set Waveform A & B.



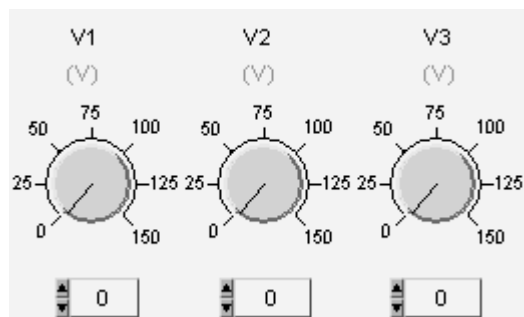
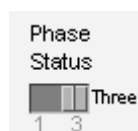
6560, 6590: Unable to set the Waveform.

- Additional P total, I total, V total and PF total on the reading display of 6560 and 6590.



ϕ_1 6560 and 65902 have P total, I total, V total, PF total and Phase for selection.

- 6590 has 3-phase voltage output. It has an extra Phase status for selection. Different output voltage can be set when Three is set in Phase Status.



4. Using STEP Mode

4.1 Function Description

This mode can be used when the 65xx Series AC Source are used. Its main function is to increase or decrease the output voltage by specified time step. Users can set different parameters to show the simulated waveform. Click **Trig** to send out the voltage if the settings are correct as the main panel, Figure 4-1 shows.

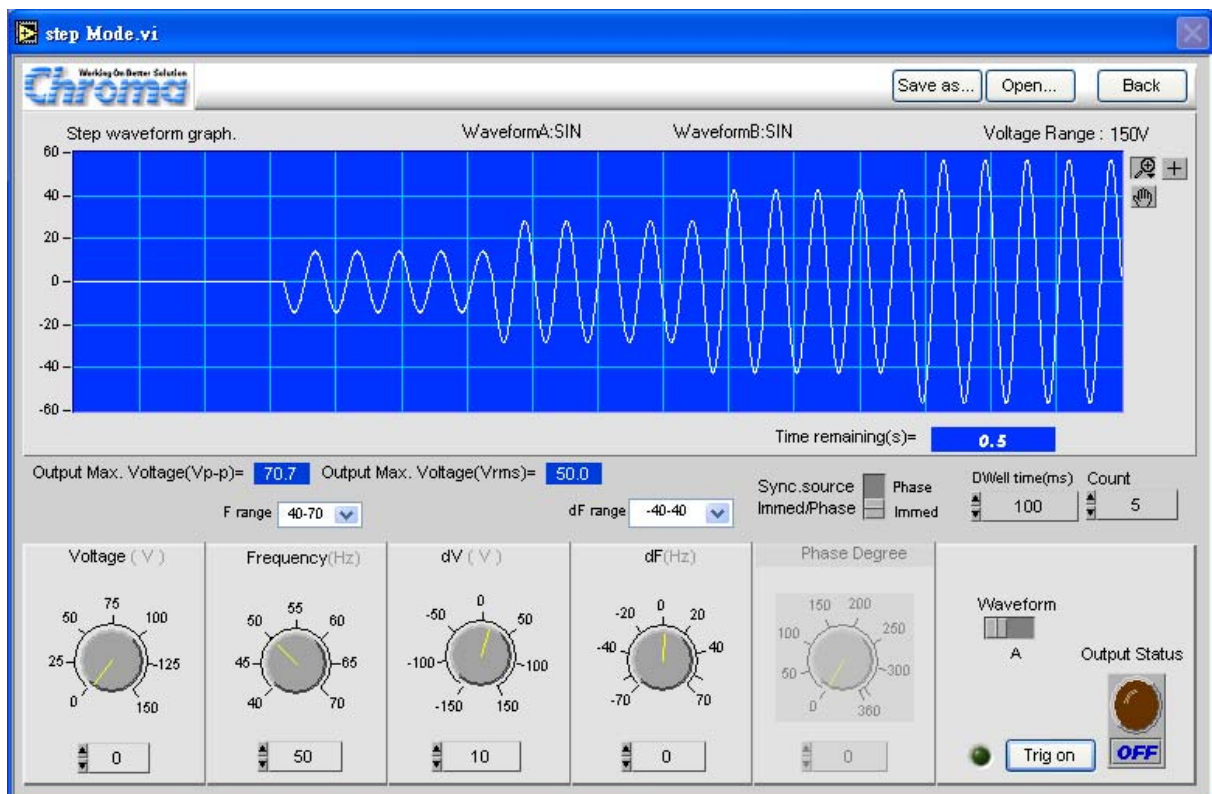
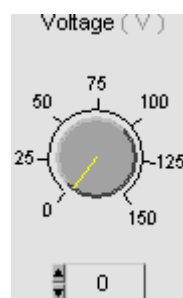


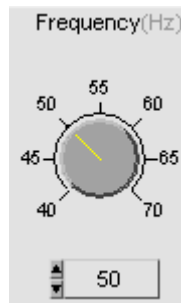
Figure 4-1 Step Mode Control Screen

4.2 Function Key Description

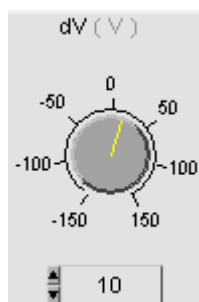
Voltage (V): It sets the start voltage.



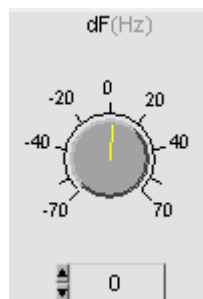
Frequency (Hz): It sets the start frequency.



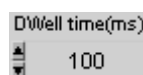
dV(V): It sets the deviation voltage. It can be set to positive (ascending) or negative (descending) value.



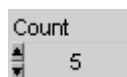
dF(Hz): It sets the deviation frequency. It can be set to positive (ascending) or negative (descending) value.



Dwell times (ms): It sets the execution time of each Step.



Count: It sets the number of Step.



Waveform: It switches the waveform A and waveform B set in the main panel (Fixed). It is not valid for 6560 and 6590.



Trig On/Off: It starts sending Pulse voltage when set to on and stops sending Pulse voltage when set to off.



Back: It exits the screen and returns to the main panel.

Save as...: Click this button to save the setting parameters of current screen to a .step file.

Open...: Click this button to open an existing .step file in the hard disk to simplify the parameter input and avoid errors from occurring.

Output Max. Voltage (Vp-p): It displays the set maximum output voltage (peak to peak).

Output Max. Voltage(Vp-p)= 70.7

Output Max. Voltage (Vrms): It displays the set maximum output voltage (RMS). The voltage reading will send to the main panel.

Output Max. Voltage(Vrms)= 50.0

Output Status: Click this button can output the voltage set in Fixed Mode that is to output a voltage before executing a Step. Also, when Step Trig on is executed the output voltage will stay on the last step due to the feature of Step if it was OFF previously.



When **Trig On** is clicked to send out the voltage in Step Mode, the output status will be ON after the execution. Thus when it returns to the main panel from Step Mode, the Status Output is ON.

For detail function description, see the User's Manual of each instrument.

5. Using Pulse Mode

5.1 Function Description

The Pulse Mode voltage will be added to the one set in the main panel (Figure 3-4). See the User's Manual of each instrument for the way to output the waveforms. Figure 5-1 shows the control screen of Pulse Mode.

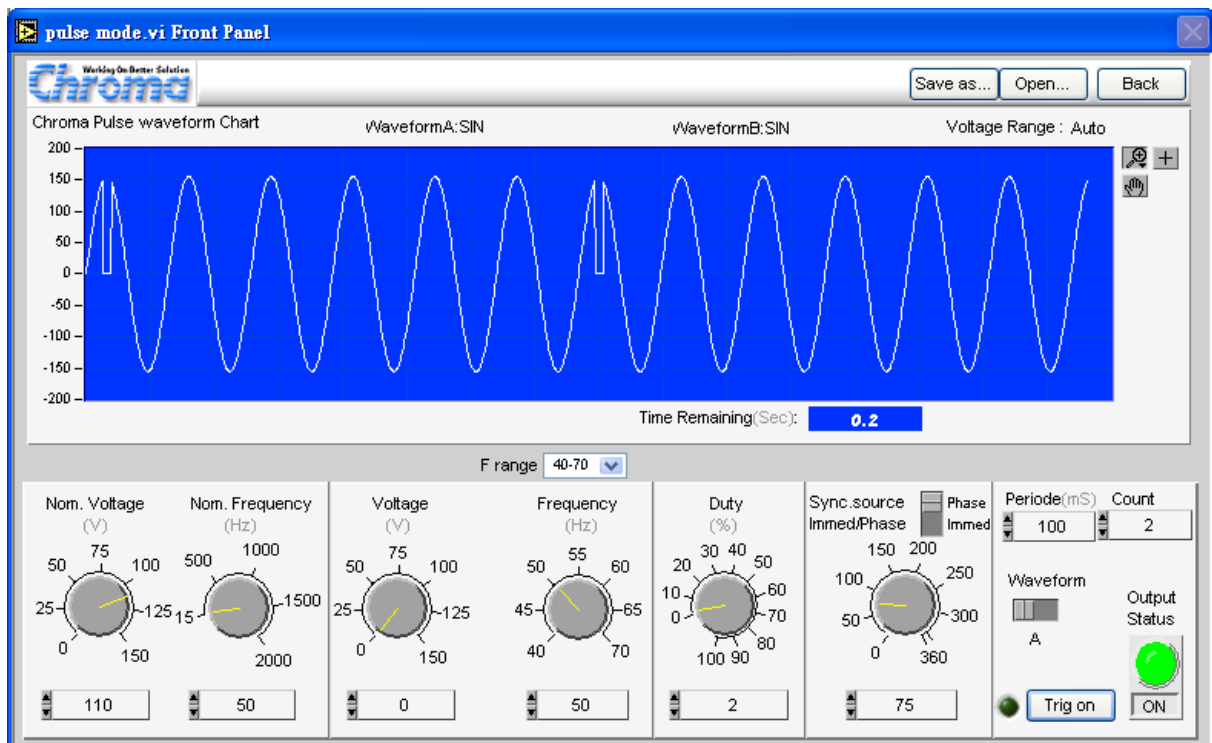
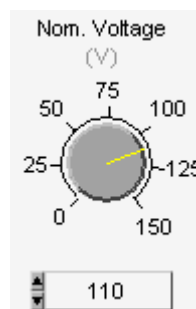


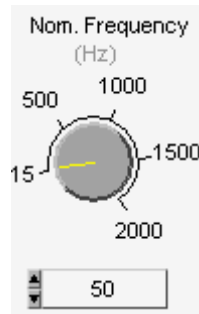
Figure 5-1 Pulse Mode Control Screen

5.2 Function Key Description

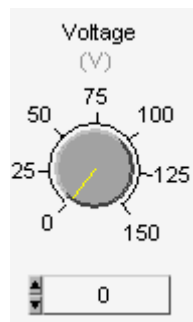
Nom. Voltage (V): This control element will refer to the voltage setting from the preceding main panel; however, the main control voltage can also be changed here.



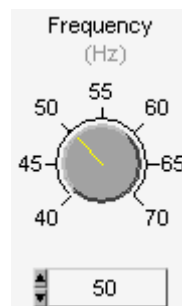
Nom. Frequency (Hz): This control element will refer to the frequency setting from the preceding main panel; however, the main control frequency can also be changed here.



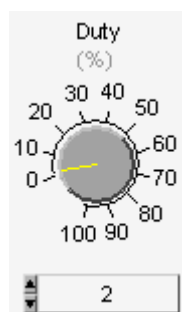
Voltage (V): It sets the voltage in Pulse Mode.



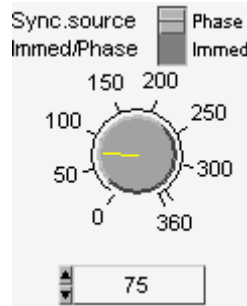
Frequency (Hz): It sets the frequency in Pulse Mode.



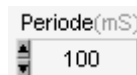
Duty (%): It sets the voltage and frequency ratio in Pulse Mode. If 50% is set, it indicates that the execution is 50% for Nominal setting and 50% for Pulse setting per count.



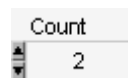
Sync. source: It can select to set the turn on phase degree or to ignore it (Immed). Assuming setting the Phase=240 degree, it means the output voltage will first execute the Nominal cycle for 240/360 and then the Duty part in Pulse Mode.



Period (mS): It sets the execution time of each count.



Count: It sets the number of Pulse execution times.



Save as...: Click this button to save the setting parameters of current screen to a .pulse file.

Open...: Click this button to open an existing .pulse file in the hard disk to simplify the parameter input and avoid errors from occurring.

Waveform: Switch the waveform A and waveform B set in the main panel (Fixed).



Trig on/off: Click this button to send out the voltage.



Back: It exits the screen and return to the main panel.

Output Status: The output of Pulse Mode is Fixed + Pulse. Assuming the Duty is set to 40%, then the prior 40% will execute Pulse settings while the rest 60% will execute Fixed settings in a cycle. If a start degree is set, it will execute the settings of Fixed.



Execution progress bar: It shows the running percentage and remaining time during execution based on the user's setting.



6. Using List Mode

6.1 Function Description

There are 40 sequences in this mode. Each sequence can set waveform, start voltage, end voltage, frequency, number of steps and the execution time. The 40 sequences can be set for loop in Loop Set up. In addition to the simulation window and save/open settings in this mode, the valid execution screen is highlighted for activation. The software will calculate the execution time of each loop and display it on the screen so that users can clearly see if the parameter setting of each sequence is correct. Figure 6-1 shows the List Mode control screen.

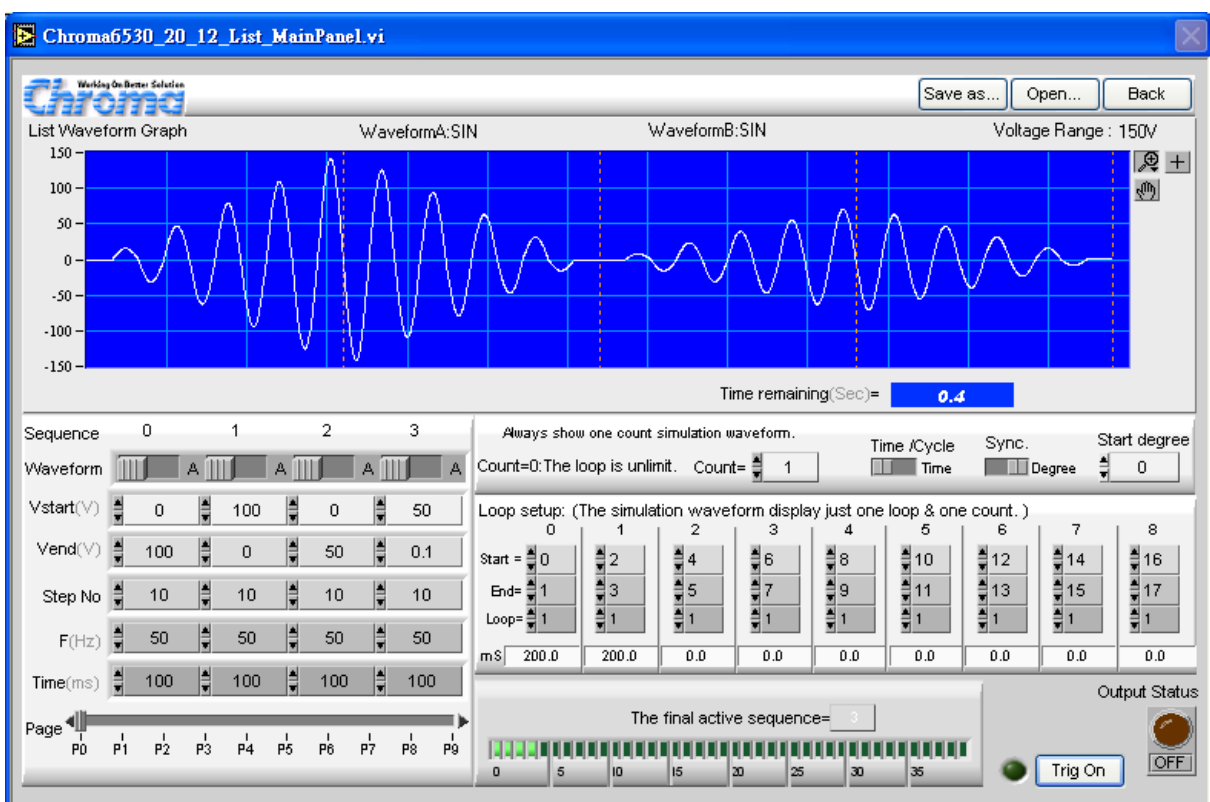


Figure 6-1 List Mode Control Screen

6.2 Function Key Description

There are 40 sequences available for setting in LIST mode. Figure 6-2 shows the first 4 of the 40 sequences, of which is called Page 0. Each sequence has the settings of waveform, Vstart, Vend, F, Step No. and Time or cycle.

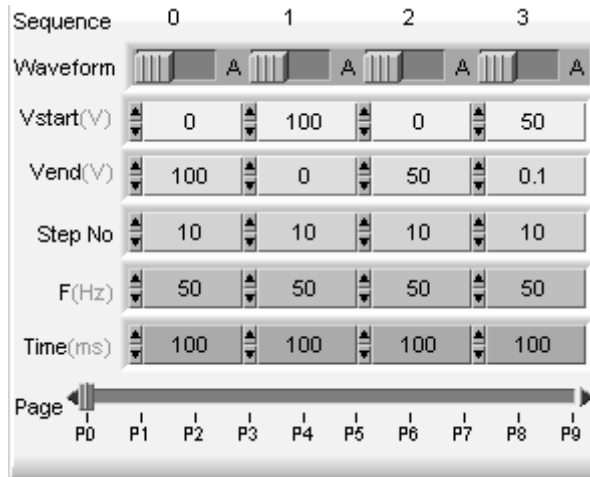
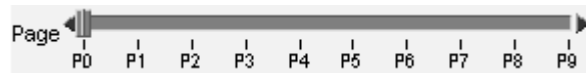


Figure 6-2 Setting List Mode Sequences

Page: There are 10 pages in total and each page can set 4 sequences.



Sequence: There are 10 sequences in total that map to 0 ~ 39 of standalone unit. Each sequence has Waveform, Vstart, Vend, F, Step No. and Time or cycle for setting.



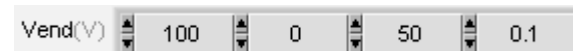
Waveform: Every sequence of 6512, 6520 and 6530 can set to A or B; while 6560 and 6590 have only one type of output.



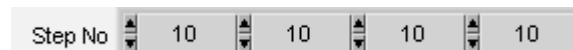
Vstart: It sets the start voltage of the sequence. It is the output voltage when Step is set to 1.



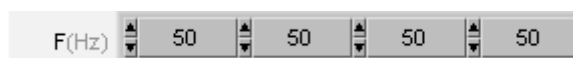
Vend: It sets the end voltage of the sequence. It outputs Vstart and Vend for half of the time each if Step is set to 2.



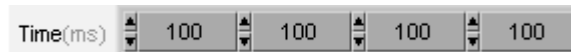
Step No: It sets the execution steps from Vstart to end in the sequence.



F: It sets the output frequency of each sequence.



Time(mS): It sets the output execution time for each sequence. It changes to Cycle or Time based on the setting of Time/Cycle. When set to 0 it means the execution time is invalid after this sequence.



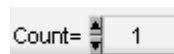
Loop setup: It sets the loop for executing the 40 sequences. The settings of the 40 sequences are described previously and their output is managed by Loop. A Loop Setup has 9 steps as the figure shown below from column 0 to 8 which has Start, End and Loop for each. For instance, Loop 0: Start=0, End=1, Loop=1 indicates executing Sequence 0 to Sequence 1 and repeat once. The time calculated in mS is 200mSec. As to the example of Loop 2: Start=4, End=5, Loop=1 indicates executing Sequence 4 to Sequence 5 and repeat once. The time calculated in mS is 0mSec as the execution time of Sequence 4 is 0.

For the Start in Loop 0~Loop 8, there is rule for setting the Sequence, which is the Start setting in the later Loop cannot less than the former Loop, for instance, if the Start=2 in Loop1, the Start must be greater than 2 in Loop2, and the same for End.

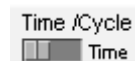
Loop setup: (The simulation waveform display just one loop & one count.)

	0	1	2	3	4	5	6	7	8
Start =	0	2	4	6	8	10	12	14	16
End =	1	3	5	7	9	11	13	15	17
Loop =	1	1	1	1	1	1	1	1	1
mS	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Count: It sets the count for executing Pulse. It is infinite loop when set to 0.



Time/Cycle: It sets the time unit as Time(mS) or Cycle of a sequence.



Sync: It sets the start degree for phase or regardless the power on degree (Immed).



The Final active sequence: When the Time of Cycle of Sequence is set to loop, it indicates the execution is up to the previous Sequence.



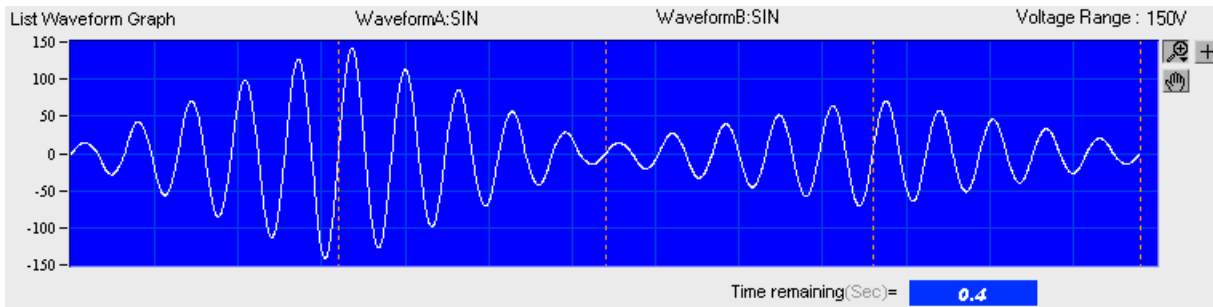
Trig on/off: It sends out voltage when Trig on is clicked and stops voltage output when Trig off is selected.



Output Status: Click this button to output the Fixed Mode setting voltage which means to output a voltage before executing List.



List Waveform Graph: It simulates the output waveform in List mode. The 4 blocks indicate 4 valid sequences.



Execution progress bar: It shows the running percentage and remaining time during execution based on the user's setting.



7. Chroma AC Source Waveform Editor

7.1 Function Description

The Waveform Editor is a software for Chroma AC Source 65xx Series only. The GPIB or RS232 Interface is used for the communication between PC and Instrument. The main function of this software is able to input the Harmonics perturbations in the cluster columns, and the **Visualization Signal** in panel will show the simulated waveform for added Harmonics perturbations. The waveform can be sent to the user-defined area US1 to US6 in Chroma 65xx AC Source via this software.

Same as operating an instrument the Waveform Editor allows users to select the communication protocol in the execution screen then enters into the main control panel as shown in Figure 7-1 and Figure 7-2 below.

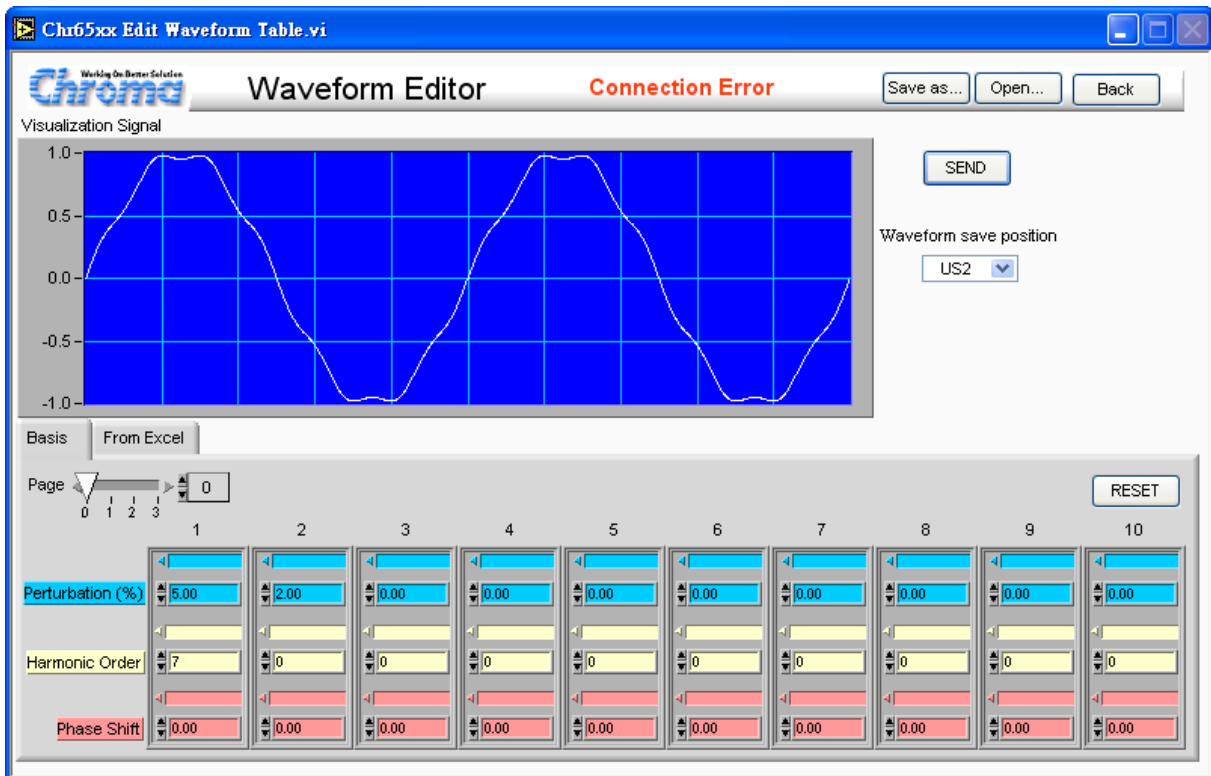


Figure 7-1 Selecting Communication Interface in Waveform Editor

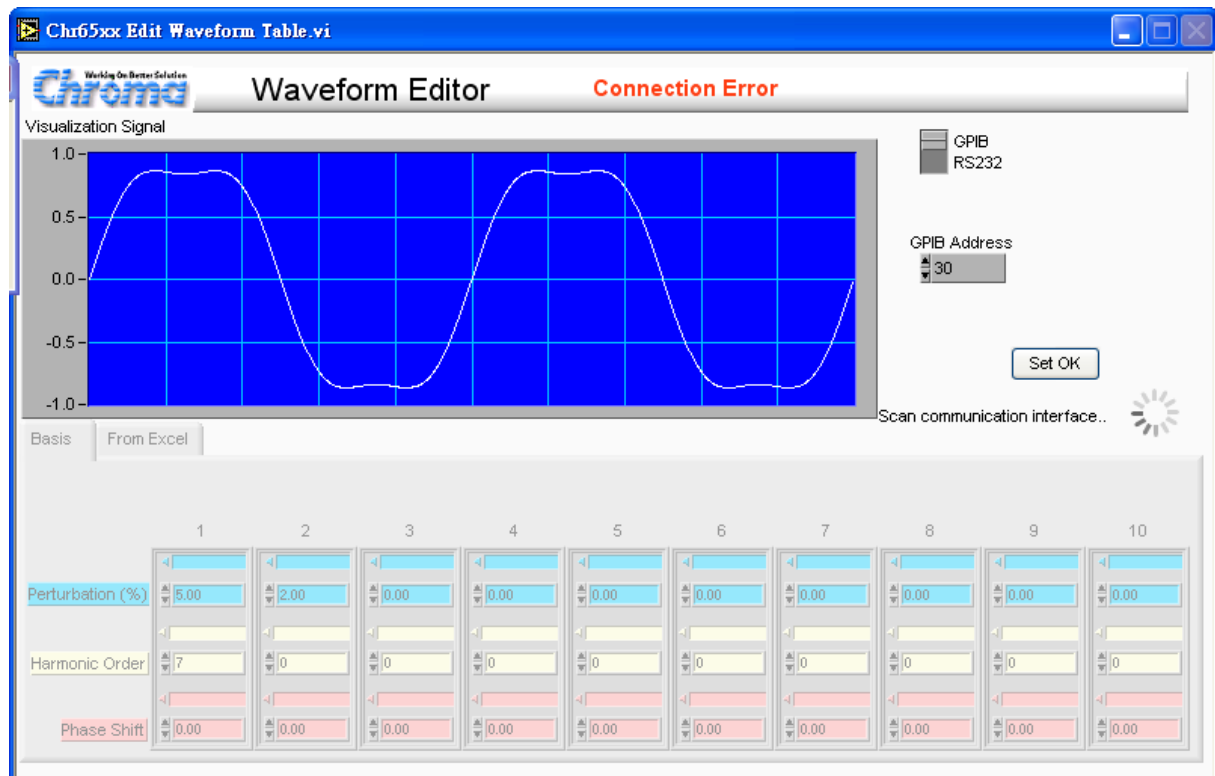


Figure 7-2 Waveform Editor Main Panel

7.2 Function Key Description

In the Harmonics section, there are default 15 clusters for harmonics perturbations input as Figure 7-3 shows. Figure 7-3 indicates that the 3rd Harmonic Order and 16% of Perturbation with no phase degree deviation harmonic are added to the original waveform.

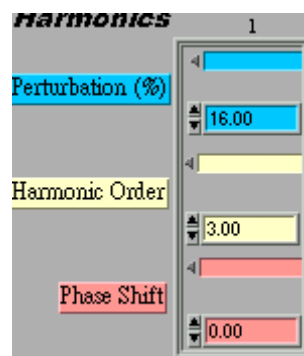


Figure 7-3 A Harmonic Cluster

Perturbation (%): The blue columns are for the percentage of perturbation.

Harmonic Order: The yellow columns are for the order of harmonics.

Phase Shift: The red columns are for the phase deviation degree of harmonic.

There are 40 columns available for use. Users can select the page number in the Page column as shown in Figure 7-1 to move to other page.

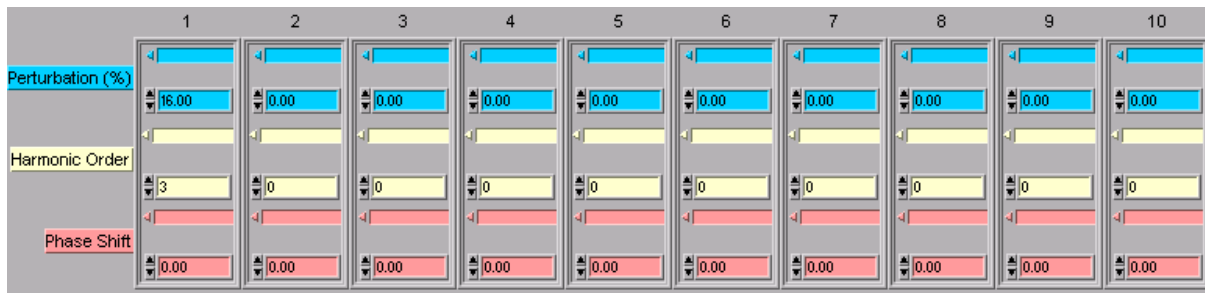
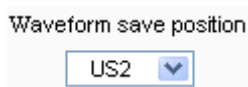


Figure 7-4 40 Columns for Setting Harmonic Cluster

Waveform save position: Click this button to save the settings to the specified position on instrument. The user-defined areas for selection are US1, US2, US3, US4, US5 and US6.



SEND: Click this button to convert the set harmonic perturbations to 1000 entries and send to AC Source 65xx Series.

RESET: Click this button to clear all parameters in harmonics cluster columns to 0.

Save as...: Click this button to save all parameters to PC's hard disk (or any other area for file storage). As long as the space is big enough it can save plenty of files. The saved file name extension is .waveform.

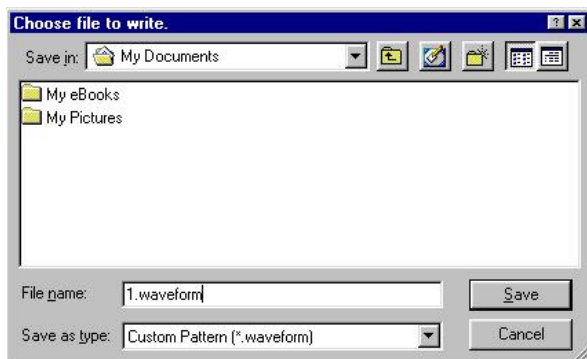


Figure 7-5 The "Save" Screen

Open...: Click this button to open a .waveform file as Figure 7-6 shows.

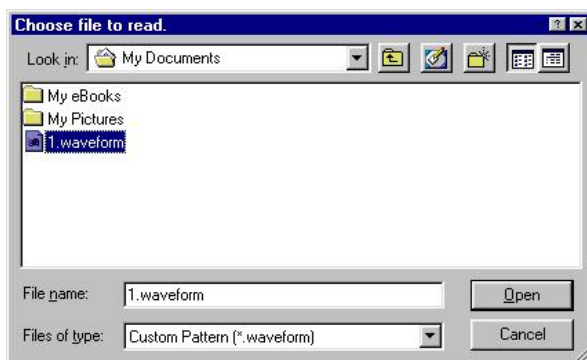


Figure 7-6 The "Open" Screen

Back: Click this button to exit the main panel.

“Transfer Complete” message appears as shown in Figure 7-7 if it is done successfully. Users should check the instrument to ensure that “Transmit data” appears. It takes the longest transmission time for 6590, the second for 6560 and the least for 6530/6520/6512. Users have to wait until “Transmit data” disappears from the LCD to use the instrument again or check the waveform. Figure 7-7 informs users that the data has been sent out from PC and they can go to other control screen now.



Figure 7-7 Message of Transfer Complete

The transmission time of 6560 and 6590 takes longer. Besides to transmit the test data, the internal unit also needs to send the data; therefore, a Time remaining counter will show for countdown. The correctness of output waveform can only be checked when it is done.

Time remaining(Sec)..
10

7.3 Example

To output the waveform with the following Harmonic perturbations from Chroma 65xx AC Source US1:

Harmonic	%
2	2.3
5	9.8
7	15.8
8	2.5

The setting steps:

1. Input the related parameters in Harmonic cluster columns. Since there are 5 perturbations, so only 5 columns are used.
2. Set the GPIB Address=30 as the instrument is set to 30.
3. Click **Waveform save position** to select US1 for sending it out from there.
4. Click **Send**.
5. Wait for the screen of “Transfer Complete OK” to appear. It should take less than 10 seconds. Check if there is a red indicator or error code appears in “**error out**”.
6. Select US1 in Chroma AC source 65xx to ensure the set waveform is sent to the instrument.

From Excel: It is applicable when the waveform is a set of data. The Excel file must have 1000 entries of data. Load the data when the path is selected and it will draw a data diagram. The user can check if it is correct and then send the data to the standalone unit.

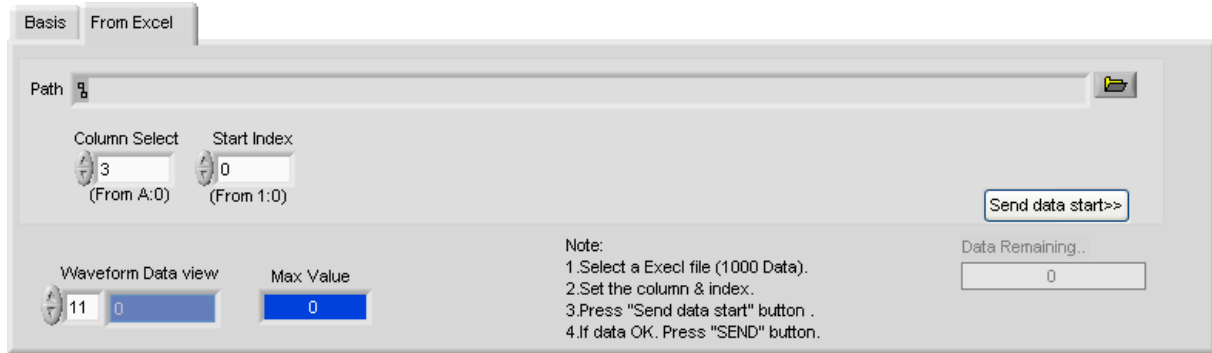
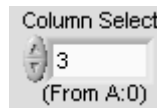


Figure 7-8

Path: It specifies the path to import the file and click the icon next to it to open the dialog box.

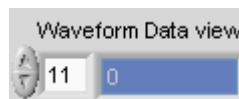
Column Select: It sets the column to retrieve data that maps to A in Excel sheet 1. For instance, it maps to column "C" when 3 is entered.



Start Index: It sets the start row that maps to 1 in Excel sheet 1. For instance, it maps to row "1" when 0 is entered. The range is 1000 entries.

Send data start>>: When Path and the mapped Excel location are specified, click this button will start to load the data.

Waveform Data View: As the loaded data can form a waveform, it can be used to view the detail information is desired.





CHROMA ATE INC.

致茂電子股份有限公司

66 Hwaya 1st Rd.

Kuei-shan Hwaya Technology Park

Taoyuan County 33383, Taiwan

33383 台灣桃園縣龜山鄉

華亞科技園區華亞一路 66 號

T +886-3-327-9999

F +886-3-327-8898

Mail: info@chromaate.com

<http://www.chromaate.com>