

Interface Introduction for Function/Arbitrary Waveform Generator

The function/arbitrary waveform generator (short name as instrument) configures USB and RS-232 interface. PC is able to send remote command through the two interfaces and remote control along with the pre-written applications, finish each task through remote control the instrument.

1. USB Interface

With the advantages of high transfer speed, simple interface, instant use and high reliability, Universal Serial-interface Bus, which is named as USB for short, is widely used in data transfer.

1.1 Connect USB interface: Use the provided USB cable (A-B type), plug one end of the cable into the USB socket of computer and the other end into the USB Device connector on the rear panel of generators.

1.2 Install Driver: The USB interface will be available after completing the installation of USB driver. For detail, please refer to the instructions in folder ‘USB Driver’. The driver just needs to be installed once and it will be used normally after that.

1.3 Software Installation: Open file of ‘Remote Demo Software’ in CD. Firstly user should perform login as instructions of ‘Installation.pdf’ if it’s the first time for you to install the software. The file just needs to be registered once and it will be used normally after that. Then click “Remote.exe” to open the remote interface to select ‘○USB’ in right bottom.

1.4 Sequence: Make sure to power on the instrument firstly then select ‘○USB’ in remote interface if USB interface is selected. If re-power on the instrument, you need to select ‘○RS232’ interface then to ‘○USB’. Otherwise, the remote control will be not available.

1.5 Download data format: Computer send a programmable command string. The first byte is data length (including end character), then programmable command ASCII code string, last for end character (ASCII code value 10). Instrument receives the specified amount characters along with data length, nothing with end character, but end

character must be needed. Because a string may conclude several commands, after receiving command character string, the instrument will check the correctness of the string, and instrument will execute continuously until meeting with end character, even when instrument executes next commands. If miss the end character, instrument may be out of work.

1.6 Upload data format: If meeting the query command with “?” in the executing process, the instrument firstly send the query-responding character string to computer, The first byte of send character string is length of data block, then send all characters of query-responding information and end-characters is not needed. After sending the query command with “?”, the computer must wait to receive the responding information of instrument, only after receiving the upload data, the computer can send the next programmable character string.

2. RS232 Interface

With the advantages of high transfer speed, simple interface, instant use and high reliability, RS232 interface, which is universal asynchronous serial interface, is widely used in data transfer. For a simple communication, only three connecting cables are needed: sending cable, receiving cable and ground cable.

2.1 connect RS232 interface: Use the RS232 cable, plug one end of the cable into the com1 socket of computer and the other end into the RS232 connector on the rear panel of generator.

2.2 Software Installation: Open folder ‘Remote Demo Software’ in CD, Firstly user should perform login as instructions of ‘Installation.pdf’ if it’s the first time for you to install the software. The file just needs to be registered once and it will be used normally after that. Then click ‘Remote.exe’ to open the remote interface, the default selection is ‘○ RS232’ in lower right.

2.3 COM1 port setting: Baud rate: 9600 bits/s in default

Start bit: 1 bit

Check bit: None

Data bit: 8 bits

Stop bit: 1 bit

Flow control: None

You can set baud rate on the down right of remote interface and six values for your selecting - 2400, 4800, 7200, 9600, 14400 and 19200. The setting for baud rate must be the same as one of instrument, or the remote control is not available.

2.4 Download data format: Computer send a programmable command ASCII code string, last for end character (ASCII code value 10). Instrument receives the specified amount characters along with data length, nothing with end character, but end character must be needed. After receiving command character string, the instrument will check the correctness of the string, and instrument will execute continuously until meeting with end character, even when instrument executes next commands. If miss the end character, instrument may be out of work.

2.5 Upload data format: If meeting the query command with “?” in the executing process, the instrument firstly send the query-responding character string to computer, end character is no necessary. After sending the query command with “?”, the computer must wait to receive the responding information of instrument, only after receiving the upload data, the computer can send the next programmable character string.

3. Programmable Demonstration

The software in CD is just a simple interface demo program. The PC can remote control the instrument through provided interface. Instrument is able to make the right response for each command in programmer guide. Command response loaded from instrument to computer is able to be shown in demo interface exactly. If users need to set the auto measuring system by PC for more complicated work, you can program the application by yourself.

3.1 Enter program: Turn on the instrument. After initialization, press the shortcut key “Remote.exe” to open the operating interface. Then select the remote interface ‘○USB’ or ‘○RS232’ based on your need. Press buttons, there are relevant codes written and sent to window. Click **【Send】** to send command, the sending window is cleared and instrument enters into the programmable state, the sign “Remote” is shown, and keypad is closed and the instrument can only perform remote control function.

3.2 Command receiving: After receiving a command string, the instrument will begin to check and will alarm once find mistake and refuse to execute. If no mistake, the instrument will carry on the programmable commands one by one until meet the end character. The buttons in the demo interface include all the key command words, click with mouse, a piece of command string can be formed in the sending window, which will be more convenient than entering by keypad. Make sure that the commands will comply with the command rules formulated in the “Programmer’s Guide”, otherwise the mistake will caused.

3.3 Command response: For the general programmable commands, the instrument will not return any information no matter the commands are executed or not. Only meet the enquiry commands with ‘?’ the instrument can return the response information to the computer. The instrument will come back into the receiving state again after transmission, and wait for another command string.

3.4 Exit program: Click **【LOC】**, computer send the local command. The instrument exit program and return “local” state. The sign “Remote” in the down-right corner of screen disappears. Keypad resumes its function. If user sends the programmable command again, the instrument will return to the programmable state.

Close the interface and turn off the power switch, and then you can remove the connecting cable.