**How to configure trigger output signals**

This material shows how to configure the instrument to output the trigger signals at the specified timing using Agilent B2961A/B2962A Power Source, through an example to source the trigger output signal before the transient device action.

Figure 1 shows the advanced trigger operation flowchart of the B2961A/B2962A Power Source. During the trigger operation, the B2961A/B2962A Power Source can output trigger signals at the following six timings to synchronize the other channels or instruments. Please note that the B2961A/B2962A Power Source has the independent trigger system for both Transient (Source) and Acquire (Monitor) actions respectively and the capability to control both actions individually.

In order to output the trigger signals, it is required to specify the timing to output the trigger signals, the digital I/O pin number and the digital I/O properties such as the polarity, the trigger type, etc. The level of the signal is fixed to 5 V. The digital I/O properties define the actual waveform of the trigger output signals. Figure 2 shows the examples of the trigger signal to be outputted by specifying the digital I/O properties.

<table>
<thead>
<tr>
<th>Example</th>
<th>Type</th>
<th>Polarity</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Edge</td>
<td>Positive</td>
<td>Both</td>
</tr>
<tr>
<td>2</td>
<td>Edge</td>
<td>Positive</td>
<td>Before</td>
</tr>
<tr>
<td>3</td>
<td>Level</td>
<td>Positive</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Edge</td>
<td>Negative</td>
<td>Both</td>
</tr>
<tr>
<td>5</td>
<td>Edge</td>
<td>Negative</td>
<td>After</td>
</tr>
<tr>
<td>6</td>
<td>Level</td>
<td>Negative</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Figure 1. Advanced trigger operation flowchart of the B2961/B2962A Power Source**

**Figure 2. Examples of the trigger signal to be outputted**
In order to know how to set up the trigger output signals with front panel operation, the procedure is shown to configure the instrument to output the trigger signal from the digital I/O pin 1 at the beginning of the transient device action. (Please see Figure 3)

**Figure 3. Example to output the trigger signal**

**Setting on the trigger output at the beginning of the transient device action**

**Step 1.** If you aren’t on the top of the Function menu, press repeatedly to return to the top level.

**Step 2.** Press **Trigger** and then press **Config** to open Trigger Configuration dialogue.

**Step 3.** Press **ACTION** and select **ACTION** to specify the device action, the trigger output of which is configured.
Step 4. Rotate to select the action and press to edit it. Then press to specify the transient action, the trigger output of which is configured.

(1) Rotate and press to edit Action
(2) Press TRANS.

Step 5. Rotate to select the channel and press to edit it. Then press to select the channel 1 as the channel, the trigger output of which is configured.

(1) Rotate and press to edit Channel
(2) Press Ch 1

Step 6. Rotate to select the trigger output status and press to edit it. Then press to set it on.

(1) Rotate and press to edit Trigger Output State
(2) Press ON
Step 7. Rotate to select the trigger output pin and press to edit it. Then press to select the digital I/O pin 1 as the trigger output pin.

(1) Rotate and press to edit Trigger Output Pin

(2) Press EXT1

Step 8. Press OK to make the modification effective.

(1) Press OK to make the modification effective
Setting the digital I/O pin properties for trigger output

Step 9. If you aren’t on the top of the Function menu, press repeatedly to return to the top level.

Step 10. Press More… I/O DIO and then press Config to open DIO Configuration dialogue.

Step 11. Press and select to specify the digital I/O pin number, the properties of which is configured.

Step 12. Rotate to select the input/output function and press to edit it. Then press to set it to the trigger output.
Step 13. Rotate to select the polarity and press to edit it. Then press POS. to set it to positive polarity.

(1) Rotate and press to edit the polarity

(2) Press POS.

Step 14. Rotate to select the output trigger type and press to edit it. Then press EDGE to set it to the edge trigger.

(1) Rotate and press to edit the output trigger type

(2) Press EDGE

Step 15. Rotate to select the output trigger timing and press to edit it. Then press BEFORE to enable the trigger output at the beginning of the specified action.

(1) Rotate and press to edit the output trigger timing

(2) Press BEFORE
Step 16. Rotate \( \text{ knob } \) to select the pulse width of the output trigger and press \( \text{ knob } \) to edit it.

Then enter 200 us to set the pulse width of the output trigger to 200 us.

Step 17. Press \( \text{ OK } \) to make the modification effective.