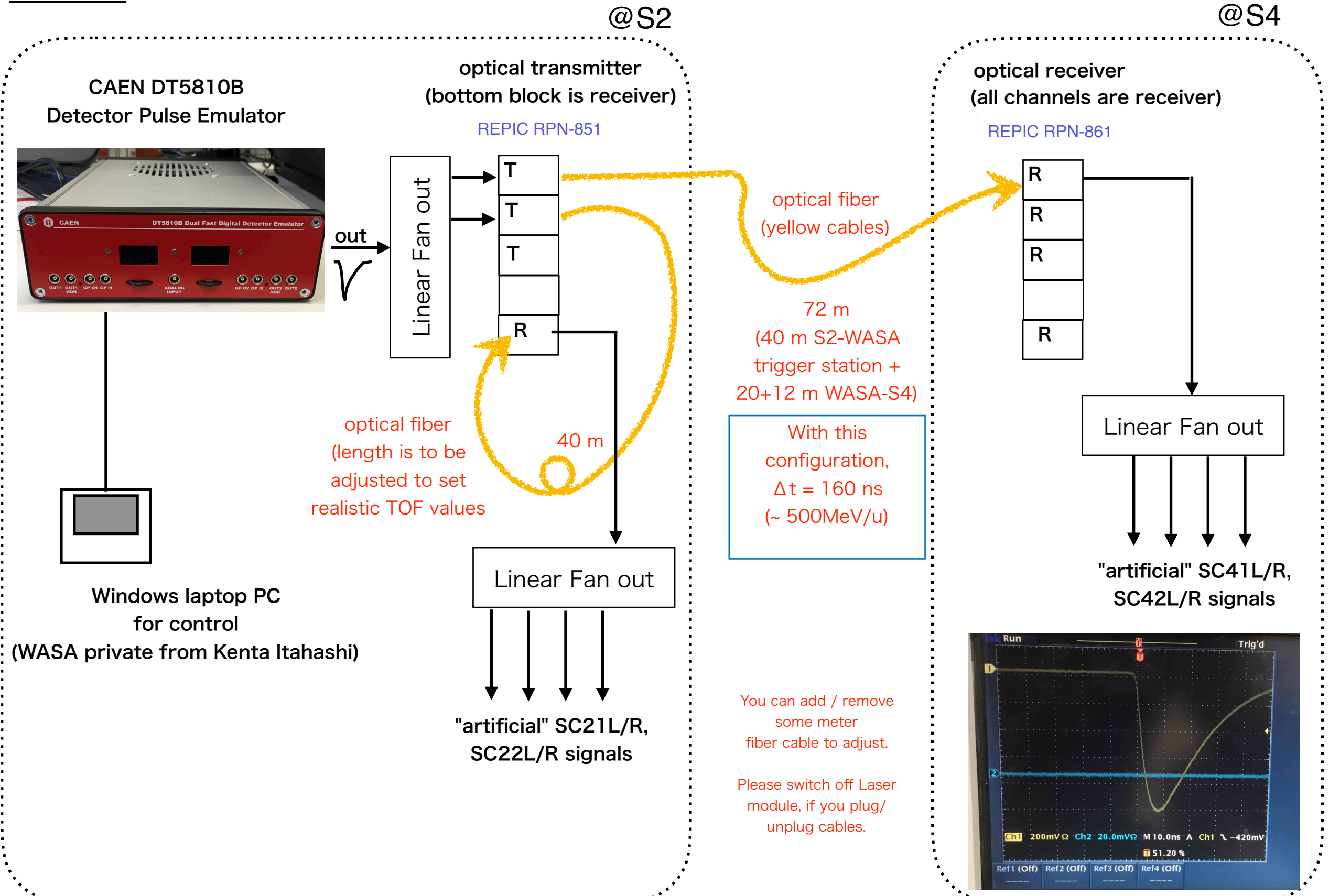


# S2-S4 TOF test without beam

## scheme



# Instructions

0. Check that Optical Transmitter module is OFF (small switch at each section of RPN851 module)
1. Start WASA-laptop PC at S2.  
**At powering on, Press "F1" and then another key, to start Windows. Otherwise this PC runs Linux.**  
 Username = Guest no password is required.
2. CAEN pulse emulator (DT5810B) is to be powered ON. USB connection to laptop.
3. Start software "Detector Emulator 2019". There is a shortcut at Desktop.
4. Setup as follows (just an example) :

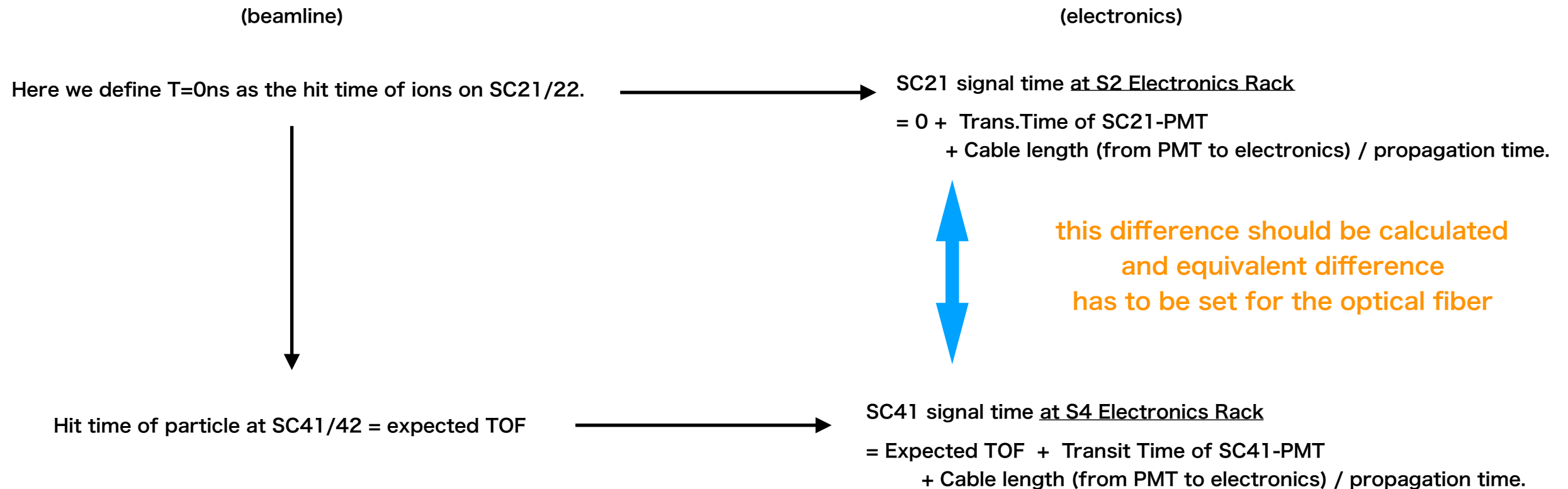
The screenshots illustrate the software configuration for CH1:

- [1]** Points to the **Instrument Selector** tab in the top menu.
- [2]** Points to the **Rescan** button at the bottom left.
- [3]** Points to the **Connection Assistant** window, with the text "this should appear".
- [4]** Points to the **NI0512881 DT5810B** entry in the Connection Assistant, with the text "double click to connect (turn green)".
- [5]** Points to the **General Settings** icon in the top right.
- [6]** Points to the **CH1** label in the Configuration window.
- [7]** Points to the **FAST** option under **Channel Mode** in the General Settings for CH1.
- [8]** Points to the **OneTouch** button in the top right.
- [9]** Points to the **Energy** and **Time Base** settings, with the text "Set parameters e.g. like this.".
- [10]** Points to the **Enable Output** button (a red circle), with the text "Enable output (turn green)".

5. Output "out1" should be used. Check with oscilloscope the pulse shape.
6. **Make sure that the other ends of the optical fibers (at S2 and to S4) are terminated to receiver. Only after that, power on the optical transmitter. (Laser open to air is dangerous.) With same reason, do not change fiber length at S2 (for TOF adjustment) while laser is ON.**
7. Check produced and distributed signals at S2 and S4, and use them for DAQ/electronics test.
8. After your test, **please make sure to switch OFF the optical transmitter.**

# S2-S4 TOF test without beam

## TOF adjustment



Note that RG58 (normal BNC), RG174 (normal lemo) cables have 5ns/meter, while LMR240 has 4ns/meter.

Propagation time of laser signal in the fiber is 5 (to be measured) ns/meter.