

Instruction for Installation of MED64 Mobius to the MED64 Computer

MED64 Mobius requires National Instruments driver, NI-DAQ mx while Conductor and Performer requires Traditional NI-DAQ 6.9.3 (or TD NI-DAQ (Legacy)7.4.1) In order to run both software, please install both of TD NI-DAQ (Legacy) 7.4.1 and NI-DAQ mx properly in your MED64 Computer according to the following instructions before installing Mobius.

NI-DAQ driver version for each software

- *Mobius: NI-DAQ mx 8.3.0
- *Conductor: TD NI-DAQ 6.9.3, or (TD NI-DAQ Legacy 7.4.1, or later version)
- *Performer: TD NI-DAQ 6.9.3, or TD NI-DAQ (Legacy) 7.4.1

NI-DAQ 6.9.3 could not stay with any other National Instruments driver in a PC. For this reason, NI-DAQ 6.9.3 needs to be replaced by NI-DAQ 7.4.1 for run of Conductor and Performer.

Notice:

Conductor has a minor problem under TD NI-DAQ Legacy 7.4.1, or later version. It does not support paired pulse stimulation with interval greater than 80 ms.

Procedure of installation

- 1) Uninstall TD NI-DAQ 6.9.3 completely
- 2) Install TD NI-DAQ (Legacy) 7.4.1. Assign the NI drivers.
- 3) Reset Conductor
- 4) Configure the NI-DAQ boards with Conductor or Performer
- 5) Install NI-DAQ mx 8.3.0.
- 6) Install the “Mobius” software.

1. Un-installation of TD NI-DAQ 6.9.3

1. Uninstall TD NI-DAQ 6.9.3 completely.

CAUTION

NI-DAQ 6.9.3 consists of 2 programs, “NI-DAQ 6.9.3” and “NI-Measurement & Automation Explorer” Please uninstall these 2 programs completely. Otherwise, NI-DAQ 7.4.1 can not be installed properly.

2. Installation of TD NI-DAQ (Legacy) 7.4.1.

1. Install the TD NI-DAQ (Legacy) 7.4.1.
2. After the installation, reboot the MED64 computer..
2. Let Windows assign the NI-DAQ drivers to the 2 multifunction cards (NI-DAQ boards) automatically. (Please make sure that it is repeated twice because of 2 sets of cards.)
3. Run the “Measurement and Automation” shortcut on the desktop. Open “Devices and Interfaces” and check if the two installed devices are present as Figure.1-1.

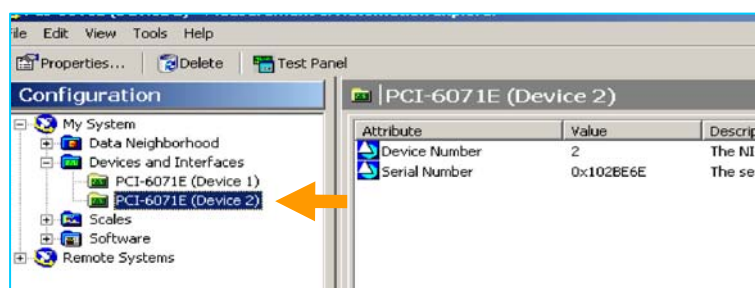


Figure. 1-1

3. Reset MED64 Conductor

Configure MED64 Conductor to recognize the NI-DAQ boards. Follow these steps to set the mode and to enable the NI-DAQ multifunction boards.

- 1) Start MED64 Conductor
- 2) After selection, a check mark will appear next to [Integrated]
- 3) Select [Setting] – [A/D Device(s)] to open the dialog box shown in Figure.1-2.

Confirm that Conductor recognizes the NI-DAQ boards and select the board and channels as seen in the Figure.1-2. Then, click OK.

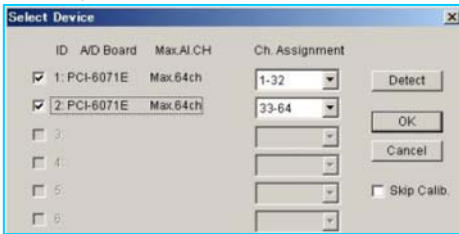


Figure. 1-2

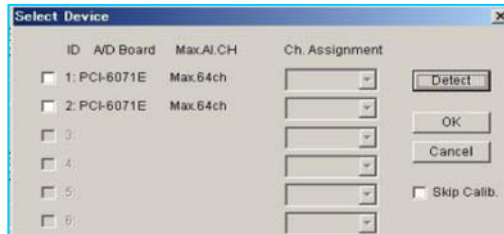


Figure. 1-3

If the NI-DAQ boards don't appear as two devices as seen in the figure.1-3, click on [Detect]. When the check marks appear as seen in the Figure1-2, click OK.

A calibration of NI-DAQ boards will be started in this step, so please make sure the power to the MED64 amplifier is turned OFF for at least 10 minutes before proceeding. Then click on the [OK] button to close the dialog box and initiate the calibration.

NOTE:

This "calibration" initiates the self-calibration command of the NIDAQ driver and does NOT require any connection to the DAQ boards. Powering off the MED64 amplifier creates the same condition. Leaving the amplifier power ON during this calibration can adversely affect this calibration.

4. Configuring the NI-DAQ cables between the MED64 amplifier and the PC

There is a chance that channel assignments in your MED64 Computer were reversed by reinstallation of NI driver. Please run this test to ensure that the two cables (NI: SH-100100) between the MED64 amplifier and the PC are correctly installed and ensure that the connections are NOT reversed (i.e. - Channel 1 is not being recognized as Channel 33).

Make sure to connect all equipment and turn on and the MED64 amplifier and PC.

Start either Conductor or Performer software

Run Oscilloscope mode on either software

Touch the "channel 1" of "ELECTRODE SELECTOR" in front of the amplifier with your finger. If the cables are connected correctly, a high noise signal will appear on the "channel 1" as seen in the figure 1-5. If the cables are reversed, a high noise signal will appear on the "channel 33 as seen in the figure 1-6.

Please don't touch amplifier with your other hand or part of your body so that the noise can appear clearly.



Figure. 1-4

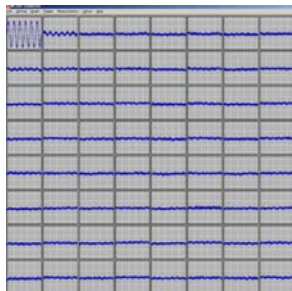


Figure. 1-5

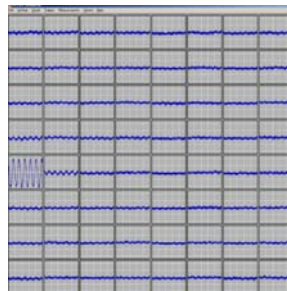


Figure. 1-6

If the cables are NOT reversed, go to the section 5 (Installation of NI-DAQ mx driver.)

If the cables are reversed, reverse the configuration of NI drivers by following the procedure.

Reverse the configuration of NI drivers

1. Run the “Measurement and Automation” shortcut on the desk top. In the National Instruments driver, each “Device”(NI-DAQ board) is assigned a “Serial number” as seen in the Figure.1-7. On completion of this process, the serial number of each “Device” needs to be reversed.

In the following example, the serial number of “Device 2” is “0x102BE6E”, which needs to be changed to the serial number of “Device1” at the completion of the process.

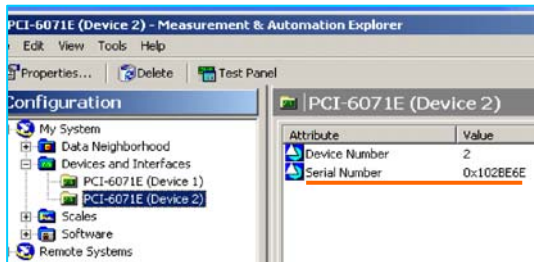


Figure. 1-7

2. Because of the presence of “Device1” and “Device2”, either device needs to be changed to “Device3” temporarily. Right-click the “PCI-6071E (Device 1)” and select [Properties] to open the dialog box of “Configuration Device 1: PCI-6071E”. Then, change the “Device Number” to 3.(Figure.1-8) so that the serial number of “0x1003E4CE” is recognized as “Device 3” (Figure.1-9)

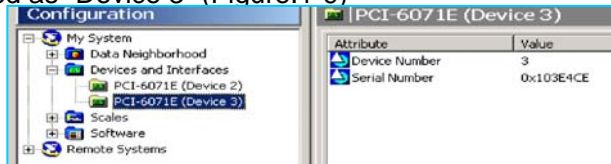
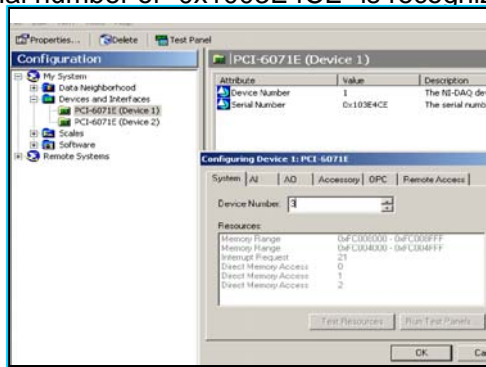


Figure. 1-9

Figure. 1-8

3. Change the configuration of “Device 2” to “Device1” (Figure. 1-10)

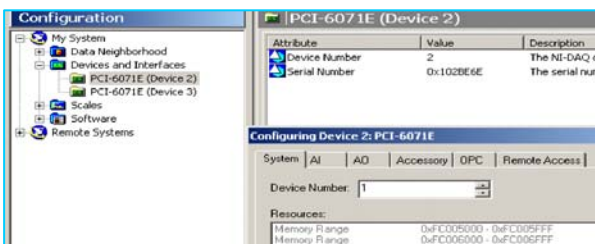


Figure. 1-10

4. Change the configuration of “Device 3” to “Device2” (Figure. 1-11)

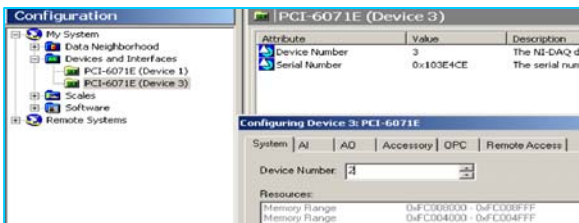


Figure. 1-11

5. Confirm the serial number of each device has been reversed.

In the example, the serial number of “Device 1” is now 0x1026E6E while the one of “Device 2” is 0x103E4CE. (Figure. 1-12)

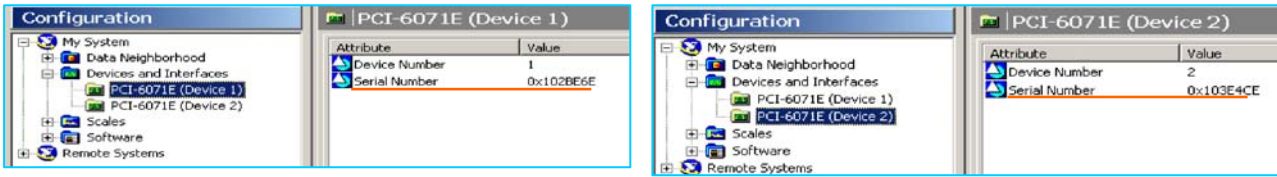


Figure. 1-12

5. Installation of NI-DAQ mx driver

Notice:

NI-DAQ mx can NOT be installed in the PC where TD NI-DAQ (Legacy) 6.9.3 is installed. If NI-DAQ 6.9.3 is installed in your MED64 Computer, please make sure to uninstall NI-DAQ 6.9.3 and install TD NI-DAQ (Legacy) 7.4.1.

1. Install NI-DAQ mx 8.3.0 driver.
2. Run the “Measurement and Automation” shortcut on the desktop. Open “Devices and Interfaces” and check if the (1)“NI-DAQ mx Devices” appears as well as (2) “Traditional NI-DAQ (Legacy) Devices as seen in Figure.1-13

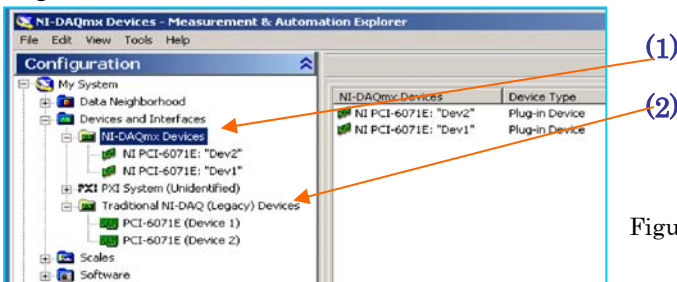


Figure. 1-13

3. Right-click [NI-DAQ mx Devices], select [Create new Ni-DAQmx Devices], then click [RTSI cable] (Figure. 1-14). [RTSI cables;”RTSICable0”] appears as seen in the Figure.1-15.

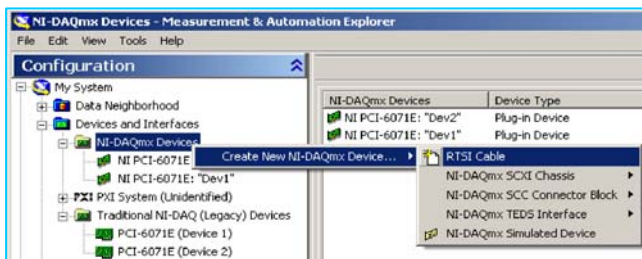


Figure. 1-14

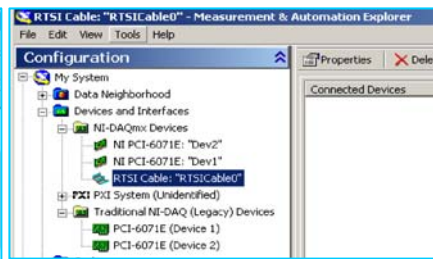


Figure. 1-15

4. Right click [RTSI cable”RTSI Cable0”], Select [Add Devices to RTSI Cable], then click [NI PC-6071E “Dev2”] and [NI PCI-6071E “Dev1”]. (Figure. 1-16) [NI PCI-6071E: “Dev2”] and [NI-PCI-6071E: “Dev1”] appears in the [Connected Devices]. (Figure. 1-17)

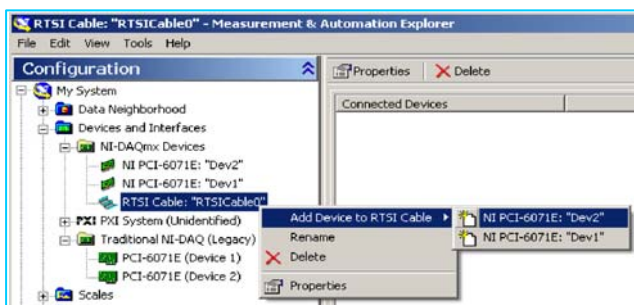


Figure. 1-16

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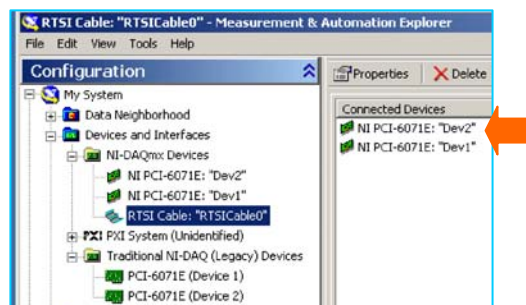


Figure. 1-17

If the Device 1 of [Traditional NI-DAQ (Legacy) Devices] and [NI-DAQ mx Devices] has the identical device number as seen in Figure.1-18, the process is completed. Go to the next step, “6. Installation of Mobius”.

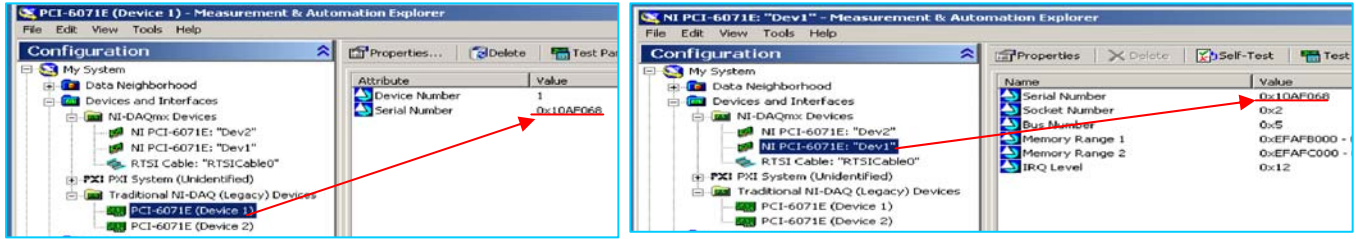


Figure. 1-18

If the Device 1 of [Traditional NI-DAQ (Legacy) Devices] and [NI-DAQ mx Devices] does NOT have the identical number, the configuration needs to be reversed. Please go to the following step.

5. Right-click [NI PCI-6071E “Dev1”], then click [Rename] (Figure.1-19)

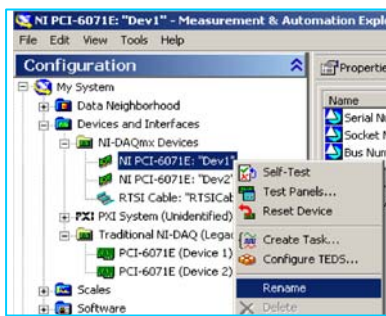


Figure. 1-19

6. Rename “Dev1” to “Dev3” (Figure.1-20) Because of the presence of “Dev2”, the “Dev1” can not be directly changed to “Dev.1”

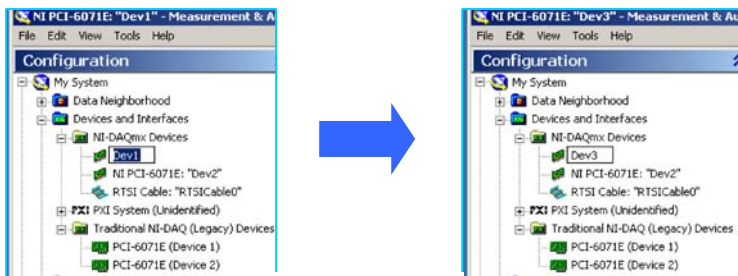


Figure.1-20

7. Rename “Dev2” to “Dev1” (Figure. 8-9)Then, rename “Dev3” to “Dev2” (Figure. 1-21)

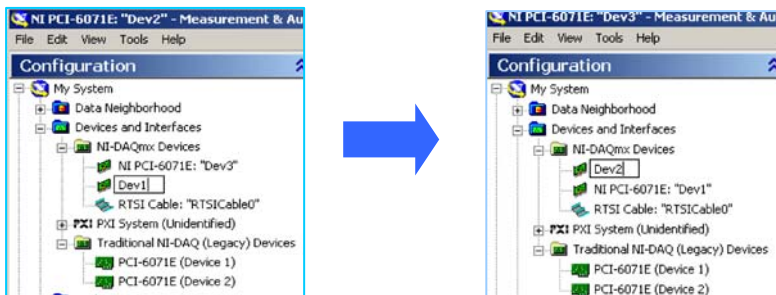
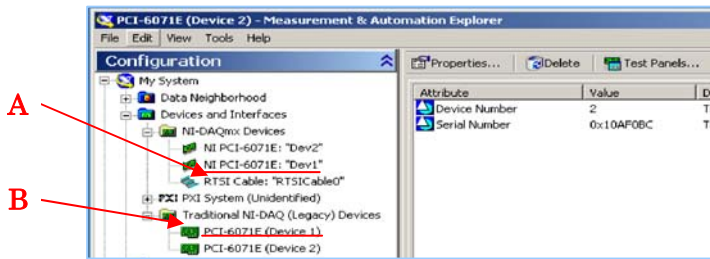


Figure.1-21

8. On completion of the procedure, The "Device1" of [NI-DAQ mx Devices] (A) and [Traditional NI-DAQ (Legacy) Devices] (B) have the same serial number.



6. Installing Mobius software.