

NidaqServer

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1 Introduction

Digital Input/Output capabilities of certain I/O cards from National Instruments. Currently supported devices are: PCI-6221 (Fries lab) and PCI-6503 (Singer lab). Both cards provide 3 digital ports each representing 8 digital lines.

There is a Matlab class that provides most of the functionality from within Matlab.

2 Subsystems

2.1 Reward

There are two mechanisms to drive the reward line (`port2/line3`).

1. auto reset event named **Reward**. Whenever this event is set to the signaled state, the server generates a pulse of a given length at the output line. The default duration is 100 ms. It can be changed through a pipe command. After connecting to the `kernel32` event:

```
reward = IPCEvent('Reward');
```

you may generate a reward pulse by setting the event to the signaled state:

```
reward.trigger();
```

2. Send a command to the server defining a sequence of up to 8 output pulses (and the time intervals between them).

At the end of a reward pulse or sequence the server (starting with version 1.0.4.0) sets the `kernel32` auto reset event **RewardDone** to the signaled state. You may use this event to wait for the end of the reward signal.

2.2 Event Markers

Not implemented yet

2.3 Digital Input Events (Lever etc.)

Not documented yet.