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App Note 239 — Sending signals to Acq*Knowledge*® from Vizard™ via the parallel port

This application note details the required setup for sending digital signals to Acq*Knowledge* from Vizard using a parallel port connection and the STP100C.

Hardware components and setup

- Vizard workstation
- Acq*Knowledge* workstation
- MP150/MP160 system that includes the STP100C module and a parallel cable (CBL110C)

Connect the parallel cable to the parallel port of the Vizard workstation and to the STP100C 25 pin connector.

Software setup

You should have Microsoft's .NET framework installed.

Copy the folder Parallel port example to the Vizard workstation and unzip it. It contains the following files:

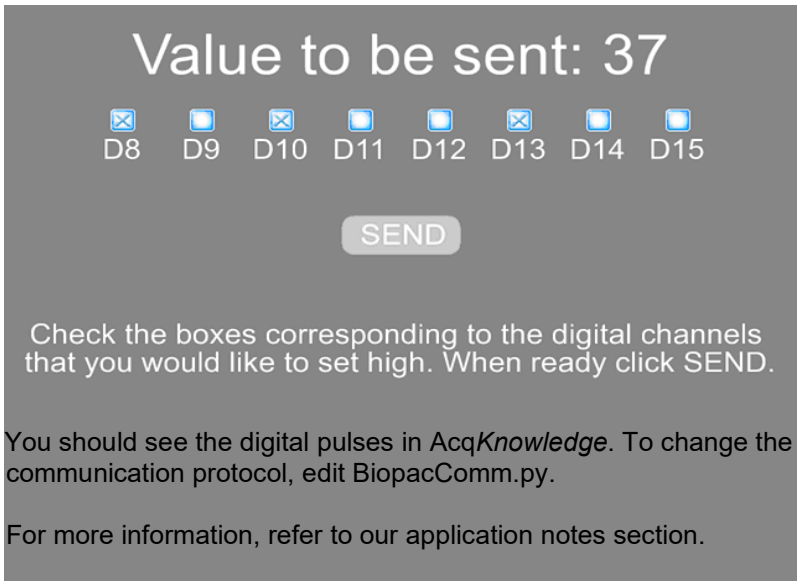
Parallel port example.py	-	the sample program
BiopacComm.py	-	required file to send digital signals
inpout32.dll	-	required by BiopacComm.py
ParallelPortFinder.exe	-	required for obtaining the parallel port address
ParallelWriter.dls	-	required by BiopacComm.py

1. Identify the address of the parallel port on the Vizard machine. Run the program Parallel Port Finder. Note the **Address As Hex** field. (If no parallel port was found then you should make sure that the parallel port is enabled in the BIOS.)
2. Open Parallel port example.py and enter the Parallel port address (the value 0x0378 is entered by default):

PARALLEL_PORT_IO_ADDRESS = 0x0378

```
#   Parallel port example.py
#   Send signals to digital inputs 8-15 of the STP100C
#   Copyright 2006 BIOPAC Systems, Inc.
#   Author: Aleksandar Dimov

import viz
PARALLEL_PORT_IO_ADDRESS = 0x0378
import BiopacComm
BIOPAC = BiopacComm.ParallelWriter()
BIOPAC.setIOAddress( PARALLEL_PORT_IO_ADDRESS )

viz.go()
viz.clearcolor(0.5, 0.5, 0.5) # Set a background color
viz.mouse(viz.OFF) # Turn off the mouse

Instructions.message("Check the boxes corresponding to the digital channels \n\
that you would like to set high. When ready click SEND.")

def SENDbutton(obj,state):
    output = 1*(D8.get()) + 2*(D9.get()) + 4*(D10.get()) + 8*(D11.get()) + 16*(D12.get())\
    + 32*(D13.get()) + 64*(D14.get()) + 128*(D15.get())
    Value.message("Value to be sent: " + str(output))
    if obj==Send:
        if state==0:
            BIOPAC.send(output)

viz.callback(viz.BUTTON_EVENT,SENDbutton)
```

3. Launch Acq*Knowledge*, open the file “Digital lines.acq” and click Start.
    - Alternatively, create a new file and enable digital channels 8-15 and then click Start.
4. Run Parallel port example.py and check the boxes corresponding to the digital channels that you would like to set high. When ready click SEND.



You should see the digital pulses in Acq*Knowledge*. To change the duration of the pulses or to customize the communication protocol, edit BiopacComm.py.

For more information, refer to our application notes section.