GitHub Gist

yoggy / **mcp3204.py**
Last active on 23 Oct 2013

[<>] **mcp3204.py**

yoggy / **mcp3204.py**

```python
#!/usr/bin/python
#
#       MCP3204/MCP3208 sample program for Raspberry Pi
#
#       how to setup /dev/spidev?.?
#               $ suod modprobe spi_bcm2708
#
#       how to setup spidev
#               $ sudo apt-get install python-dev python-pip
#               $ sudo pip install spidev
#
import spidev
import time

class MCP3208:
        def __init__(self, spi_channel=0):
                self.spi_channel = spi_channel
                self.conn = spidev.SpiDev(0, spi_channel)
                self.conn.max_speed_hz = 1000000 # 1MHz

        def __del__( self ):
                self.close

        def close(self):
                if self.conn != None:
                        self.conn.close
                        self.conn = None

        def bitstring(self, n):
                s = bin(n)[2:]
                return '0'*(8-len(s)) + s

        def read(self, adc_channel=0):
                # build command
                cmd  = 128 # start bit
                cmd +=  64 # single end / diff
                if adc_channel % 2 == 1:
                        cmd += 8
                if (adc_channel/2) % 2 == 1:
                        cmd += 16
                if (adc_channel/4) % 2 == 1:
                        cmd += 32

                # send & receive data
                reply_bytes = self.conn.xfer2([cmd, 0, 0, 0])

                #
                reply_bitstring = ''.join(self.bitstring(n) for n in reply_bytes)
                # print reply_bitstring

                # see also... http://akizukidenshi.com/download/MCP3204.pdf (http://akizukidenshi.com/download/MCP
                reply = reply_bitstring[5:19]
                return int(reply, 2)

if __name__ == '__main__':
        spi = MCP3208(0)

        count = 0
        a0 = 0
        a1 = 0
        a2 = 0
        a3 = 0

        while True:
                count += 1
                a0 += spi.read(0)
                a1 += spi.read(1)
                a2 += spi.read(2)
                a3 += spi.read(3)

                if count == 10:
                        print "ch0=%04d, ch1=%04d, ch2=%04d, ch3=%04d" % (a0/10, a1/10, a2/10, a3/10)
                        count = 0
                        a0 = 0
                        a1 = 0
                        a2 = 0
                        a3 = 0
```

(/rstolyarov)

rstolyarov (/rstolyarov) commented on 31 Mar

How exactly do you wire the MCP3208 to the Raspberry Pi if you are running this code? Specifically, I'm wondering about the CS, DIN, DOUT, and CLK pins?

[(/rstolyarov)](/rstolyarov)

rstolyarov (/rstolyarov) commented on 3 Apr

Do you know how exactly one should wire it?

[(/niemira)](/niemira)

niemira (/niemira) commented on 28 May

I think there's a bug in 52 line. In my mind there should be " reply = reply_bitstring[7:19] " because mcp320[2/4/8] is 12-bit resolution not 14-bit.

[(/gamondue)](/gamondue)