

# GitHub Gist

 [yoggy](#) / [mcp3204.py](#)  
Last active on 23 Oct 2013

 [mcp3204.py](#)

```

1  #!/usr/bin/python
2  #
3  #      MCP3204/MCP3208 sample program for Raspberry Pi
4  #
5  #      how to setup /dev/spidev?.?
6  #      $ sudo modprobe spi_bcm2708
7  #
8  #      how to setup spidev
9  #      $ sudo apt-get install python-dev python-pip
10 #      $ sudo pip install spidev
11 #
12 import spidev
13 import time
14
15 class MCP3208:
16     def __init__(self, spi_channel=0):
17         self.spi_channel = spi_channel
18         self.conn = spidev.SpiDev(0, spi_channel)
19         self.conn.max_speed_hz = 1000000 # 1MHz
20
21     def __del__( self ):
22         self.close
23
24     def close(self):
25         if self.conn != None:
26             self.conn.close
27             self.conn = None
28
29     def bitstring(self, n):
30         s = bin(n)[2:]
31         return '0'*(8-len(s)) + s
32
33     def read(self, adc_channel=0):
34         # build command
35         cmd = 128 # start bit
36         cmd += 64 # single end / diff
37         if adc_channel % 2 == 1:
38             cmd += 8
39         if (adc_channel/2) % 2 == 1:
40             cmd += 16
41         if (adc_channel/4) % 2 == 1:
42             cmd += 32
43
44         # send & receive data
45         reply_bytes = self.conn.xfer2([cmd, 0, 0, 0])
46
47         #
48         reply_bitstring = ''.join(self.bitstring(n) for n in reply_bytes)
49         # print reply_bitstring
50
51         # see also... http://akizukidenshi.com/download/MCP3204.pdf (http://akizukidenshi.com/download/MCP3208.pdf)
52         reply = reply_bitstring[5:19]
53         return int(reply, 2)
54
55 if __name__ == '__main__':
56     spi = MCP3208(0)
57
58     count = 0
59     a0 = 0
60     a1 = 0
61     a2 = 0
62     a3 = 0
63
64     while True:
65         count += 1
66         a0 += spi.read(0)
67         a1 += spi.read(1)
68         a2 += spi.read(2)
69         a3 += spi.read(3)
70
71         if count == 10:
72             print "ch0=%04d, ch1=%04d, ch2=%04d, ch3=%04d" % (a0/10, a1/10, a2/10, a3/10)
73             count = 0
74             a0 = 0
75             a1 = 0
76             a2 = 0
77             a3 = 0
78

```



([/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)** commented on 3 Apr

Do you know how exactly one should wire it?



(/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)

(/)

[Status \(https://status.github.com/\)](https://status.github.com/) [API \(https://developer.github.com/\)](https://developer.github.com/) [Blog \(https://github.com/blog\)](https://github.com/blog) [About \(https://github.com/about\)](https://github.com/about)

© 2014 GitHub, Inc. [Terms \(https://github.com/site/terms\)](https://github.com/site/terms) [Privacy \(https://github.com/site/privacy\)](https://github.com/site/privacy) [Security \(https://github.com/security\)](https://github.com/security) [Contact \(https://github.com/contact\)](https://github.com/contact)