

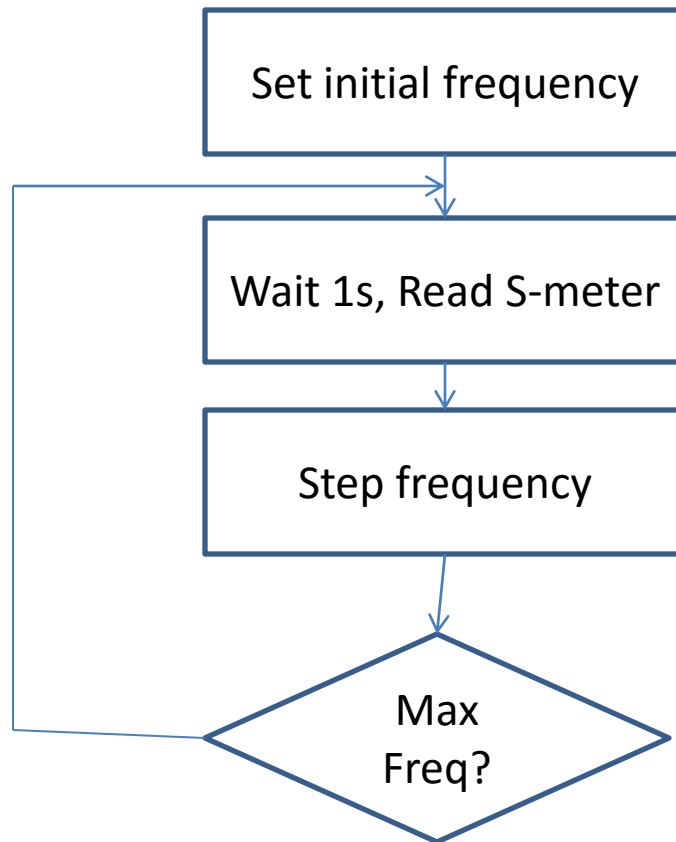
No spectrum analyzer?
(Maybe) no problem!

History

- I was plagued by a broadband noise source somewhere nearby that had levels around S8-9.
- Wanted to look at spectrum on noise over wide band to look for clues as to noise source.
- But I don't have a spectrum analyzer
- What to do?

Solution!

- What I do have is a radio controlled by my shack computer
 - Computer can set frequency *and read S-meter*
- Write a program: set frequency, read S-meter, and repeat, stepping frequency over the band of interest
- Look at output to see if there is a clue to noise source



Step size can be as fine or coarse as you need

Sample Python program

```
import serial
import time
import random

#Set up frequencies to monitor
# cover all bands
freqstr = ("03613000", "07112000", "10113000", "14113000", "18113000", "21113000", "24913000", "28113000")

ser = serial.Serial(0, baudrate = 38400, timeout = 1)
outfil = open('Noise.dat','w')

while True:
    starttime = time.time()
    i = random.randint(0,6)
    freqset = "FA"+freqstr[i] + ";"
    ser.write(freqset)

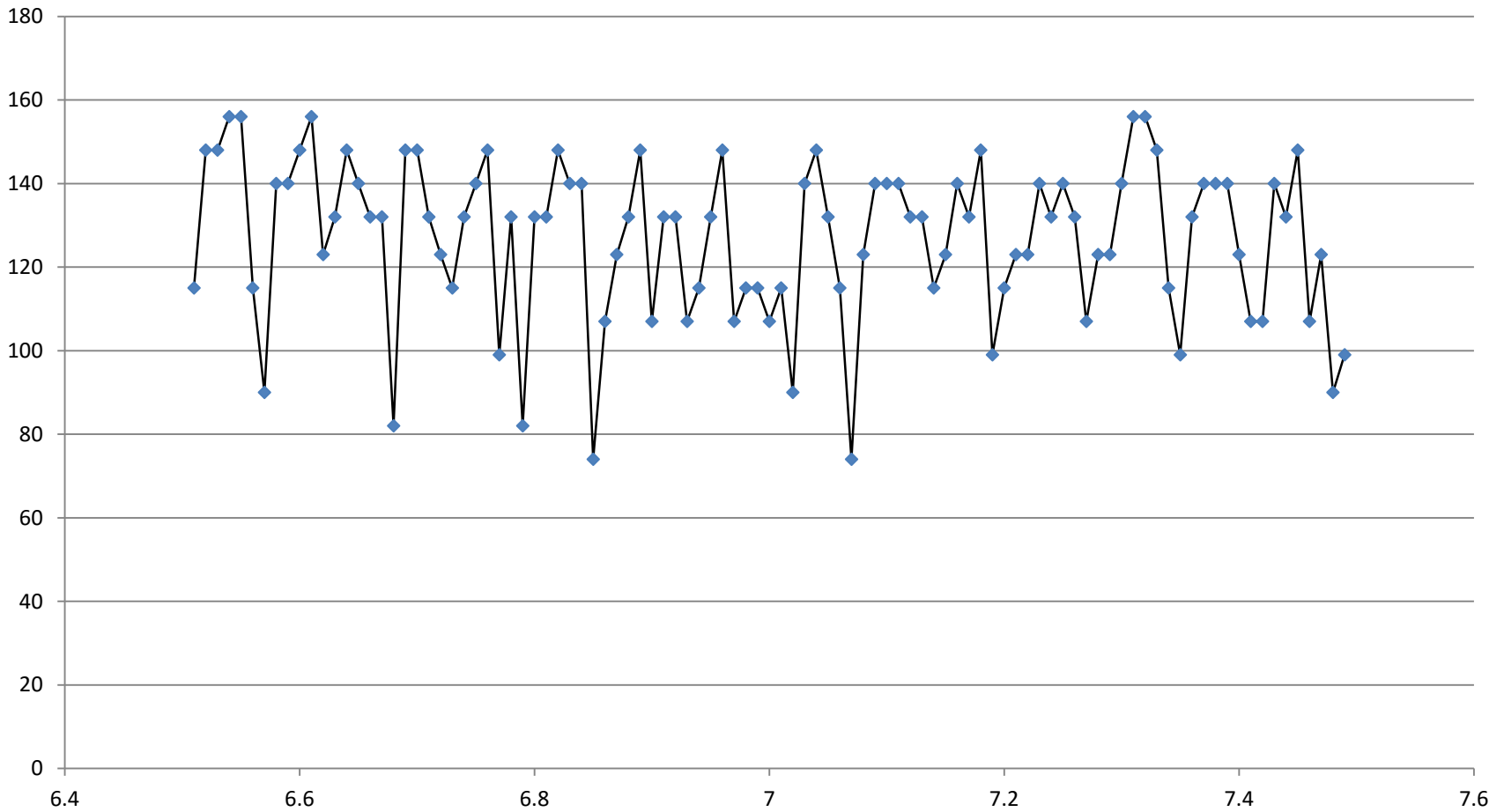
    print starttime
    while time.time() - starttime < 300.0:
        print time.time() - starttime
        ser.write('SM0;')
        reading = ser.read(8)
        ctime = time.strftime("%H:%M:%S ")
        ostring = freqset + ctime + reading + "\n"
        outfil.write(ostring)
        print(ostring)
        time.sleep(15)

outfil.close()
exit()
```

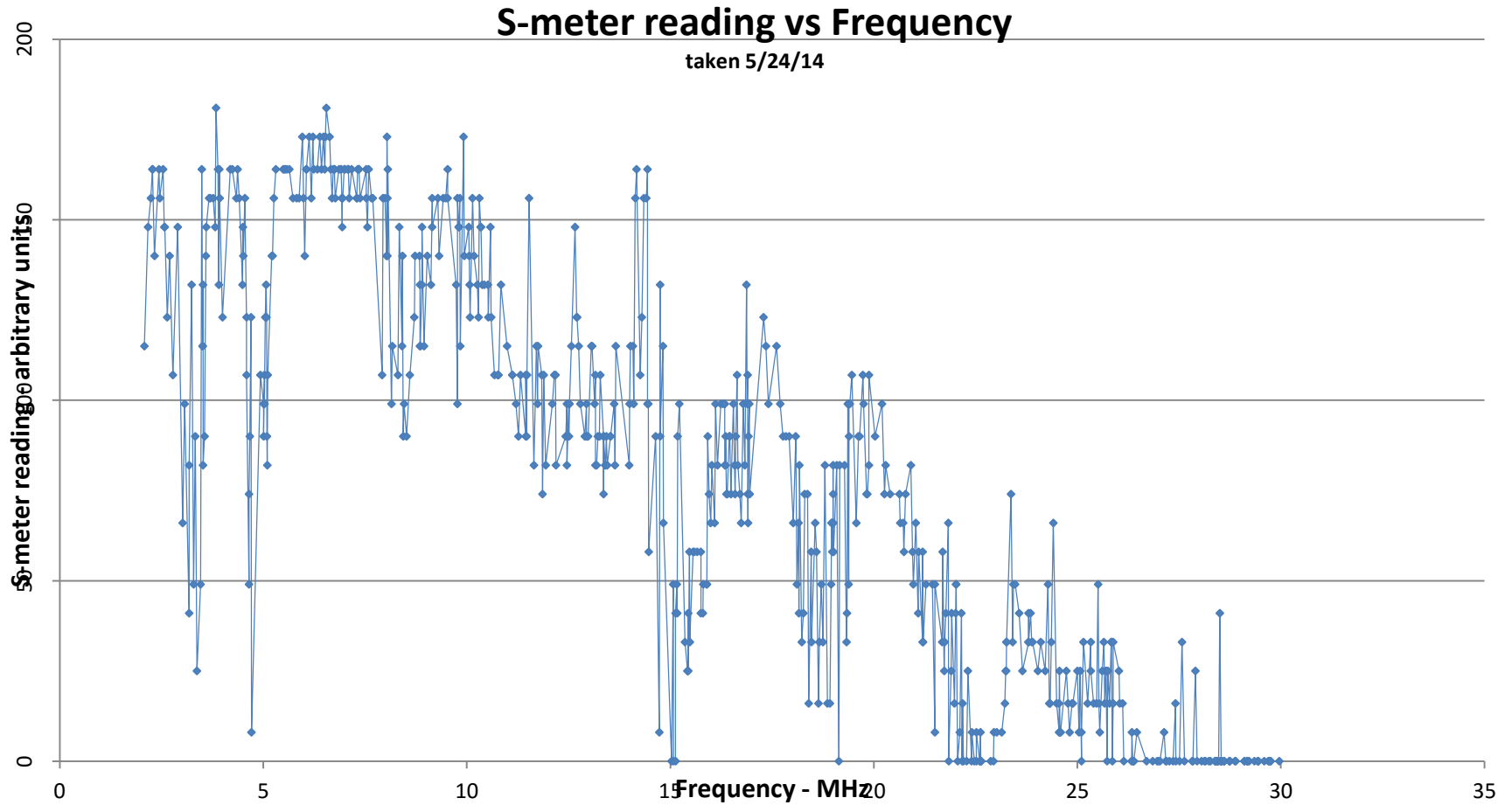
Different options

- Sample frequency at random over some range
 - Results in broad coverage more rapidly, lessens chance of hitting “real signal”
- Sample frequency over smaller range with smaller step
 - Fine resolution limited by receiver filter

40 meters at 10kHz steps



Random sampling 2-30 MHz



What else?

- What else can we do with the combination of computer controlled rig and computer?
 - Could get higher resolution by using audio output of rig and FFT
 - Your ideas??