sprawko

OpenWRT w qemu

pobieramy odpowiedni obraz oraz system plików do folderu

```
mkdir -p openwrt-dir

curl https://downloads.openwrt.org/snapshots/targets/armvirt/64/openwrt-armvirt-64-Image > openwrt-d

curl https://downloads.openwrt.org/snapshots/targets/armvirt/64/openwrt-armvirt-64-rootfs-ext4.img.g

gunzip openwrt-dir/rootfs.ext4.gz
```

uruchomienie

```
qemu-system-aarch64 -M virt -nographic \

-m 128 \

-cpu cortex-a57 -smp 2 \

-kernel openwrt-dir/image -append "root=fe00" \

-drive file=openwrt-dir/rootfs.ext4,if=none,format=raw,id=hd0 \

-device virtio-blk-device,drive=hd0 \

-nic user,hostfwd=tcp::5556-:22,hostfwd=tcp::5557-:80
```

- uruchamianmie QEMU,
- mount-owanie obraz dysku
- przekierowanie portów TCP 22 i 80 OpenWRT na 5556 i 5557 hosta

konfiguracja sieciowa

edycja `/etc/config/network`

```
config interface 'lan'

option device 'br-lan'

option proto 'dhcp'

# option ipaddr '192.168.1.1'

# option netmask '255.255.255.0'
```

```
# option ip6assign '60'
```

wykonanie `/etc/init.d/network reload`

generowanie sygnałów PWM

przenoszenie plików

host

`python3 -m http.server`

openWRT qemu

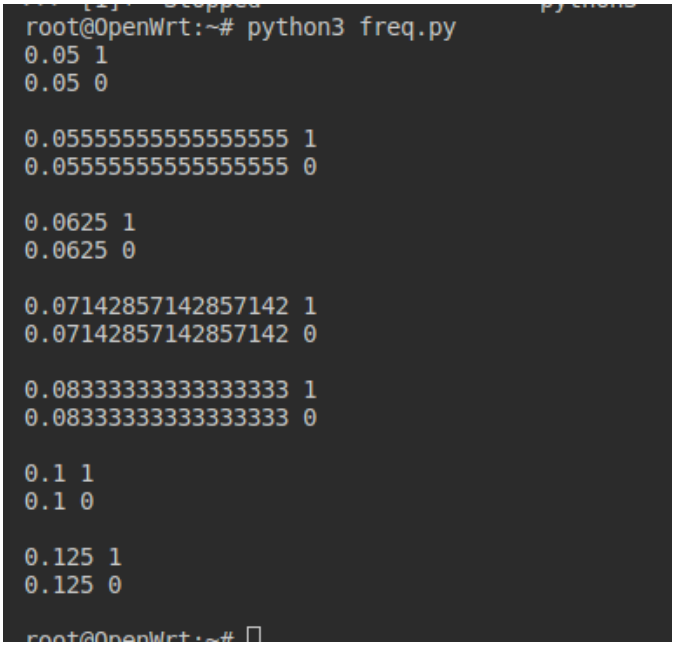
`wget http://192.168.1.100:8000/freq.py`

`wget http://192.168.1.100:8000/density.py`

implementacja

w plikach `freq.py` i `density.py`

rezultat wykonania programów



```
root@OpenWrt:~# python3 density.py
20.0 1
80.0 0

25.0 1
75.0 0

30.0 1
70.0 0

35.0 1
65.0 0

40.0 1
60.0 0

44.99999999999999 1
55.00000000000001 0

49.99999999999999 1
50.00000000000001 0

54.99999999999999 1
45.00000000000001 0

60.0 1
40.0 0

65.0 1
35.0 0

70.0 1
30.0 0
```