Software defined radio

Co to je SDR

Antena zapojena do A/D prevodniku.

Vsetko ostatne ako modulacia/demodulaciu, detekciu signalu a dekodovanie riesi SW.

V realite je to trochu inak.

rtlsdr usb dongle

- Realtek RTL2832U
- lacny (10..25EUR tuner R820T/R820T2)
- freq rozsah 24-1766MHz
- 2.56Ms/s (=2.56MHz)
- 8bit ADC

rozne tunery, E4000 ma rozsah 52-2200MHz
ale stoji 50$+ a dalsie

co

am/fm
ads-b
policajti

development toolkit

- gnuradio
  - externy hw alebo simulacia
  - python, c++
  - softy: gqrx, openbts
  - gr-osmosdr

Frekvencie mimo rozsahu donglu

upconverter

downconverter

direct sampling modifikacia rtlsdr

ine sdr

lne sdr

airspy	200$	24 MHz – 1.750 GHz	RX
sdrplay	300$	100 kHz – 380 MHz and 430 MHz – 2 GHz	RX
hackrf	300$	10 MHz - 6 GHz	TX/RX half duplex
bladerf	420-650$	300 MHz – 3.8 GHz	TX/RX
usrp b/n200 b/n210	675-1600+$	70 MHz – 6 GHz	TX/RX

Identifikacia neznameho signalu

- **Národná tabuľka frekvenčného spektra** http://www. vus.sk/ntfs/
- http://en.wikipedia.org/wiki/Short_Range_Devices
- http://www.sigidwiki. com/wiki/Signal_Identification_Guide

Dalsie vyuzitie

- radio astronomia
  - hydrogen line 1420.4MHz
  - pulsar monitoring ?
  - treba satelitny tanier
- openbts
- pasivny radar
- meteo fotky zo satelitov
  - qfh antena