

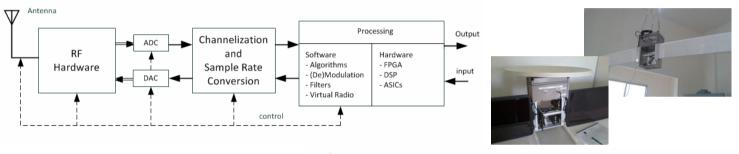




2013 - 2018 Hydrogen hyperfine Nuclear Electron structure spin spin Spin Higher energy 1s 5.9 x 10 <sup>-6</sup> eV 1420 MHz 1420 MHz  $\lambda = 21 \text{ cm}$ hydrogen emission  $\lambda = 21 \text{ cm}$ 



Spin mechanisms



Model of Software Radio

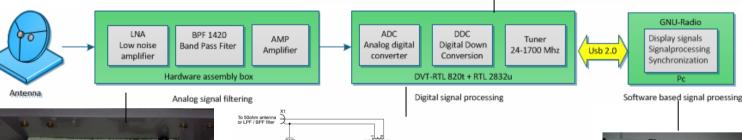


ANT Mixer Filter IF Amplifier PC

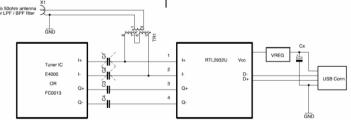
ADC DSP SW

LNA

Block scheme of typical SDR receiver







Local Oscillator







