

Advances in digital signal processing techniques and commercial high speed samplers present an opportunity for development of simplified and flexible digital downconversion schemes at a front end receiver's output. Our investigation into the use of commercial ADCs for directly digitizing the IF bands and development of advanced DSP has begun which should have applications for the ngVLA. The effort is made possible due to modern FPGAs that provide a large number of high speed transceivers and DSP blocks to receive, downconvert and transmit the data from commercial ADCs in a single chip as well as to generate the required digital LO for downconversion. The use of these and other resources in a flexible and reconfigurable platform will allow for a study into the feasibility of new digital back end designs that are compatible with both current systems and future correlator and front end systems envisioned for ngVLA and ALMA in the next decade.