EVLA Front-End CDR

EVLA Low Frequency Receiver Capability
Low Band Overview

- P-Band
- 4-Band
- 2-Band
- 4-P Converter
P Band

310-344 MHz, 2 channel VLA P-band Receiver (legacy)

Custom cross-dipole, NRAO design, near prime focus—At 290 K.

Commercial wide-band hybrid, quadrature phase shifter—At 290 K.
Cal coupler—At 290 K
Cal source, NoiseCom/MC63147– At 290 K.

LNA, NRAO design—At 290 K, Te=28 K, G=33 dB

2 outputs at 310 - 344 MHz, -35 dBm
Cryogenics: None.
Receiver FE NF est=55 K
4 Band

73-75 MHz, 2 channel VLA 4-band Receiver (legacy)

Custom cross-dipole, NRL design, near prime focus—At 290 K.
Commercial wide-band hybrid, quadrature phase shifter—At 290 K.
Cal coupler—At 290 K
Cal source, NoiseCom/MC63147—At 290 K.
SAO 2 Band

- 196 MHz, 290 K, Feed at Prime Focus
- Preliminary receivers were tested on five VLA antennas.
- Currently being redesigned.
- Any questions, contact:
  Lincoln Greenhill
  Smithsonian Astrophysical Observatory
  60 Garden St, Cambridge, MA 02138
4-P Converter

Note: EVLA uses dedicated inputs for both bands.
Summary

• Low Band Front Ends are legacy hardware
  – No schedule/cost impact to EVLA
• 4-P Converter is new
• 2-Band information included for completeness only, I.E. we are aware