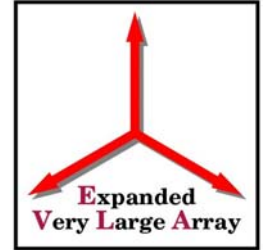


EVLA Front-End CDR

Solar Mode



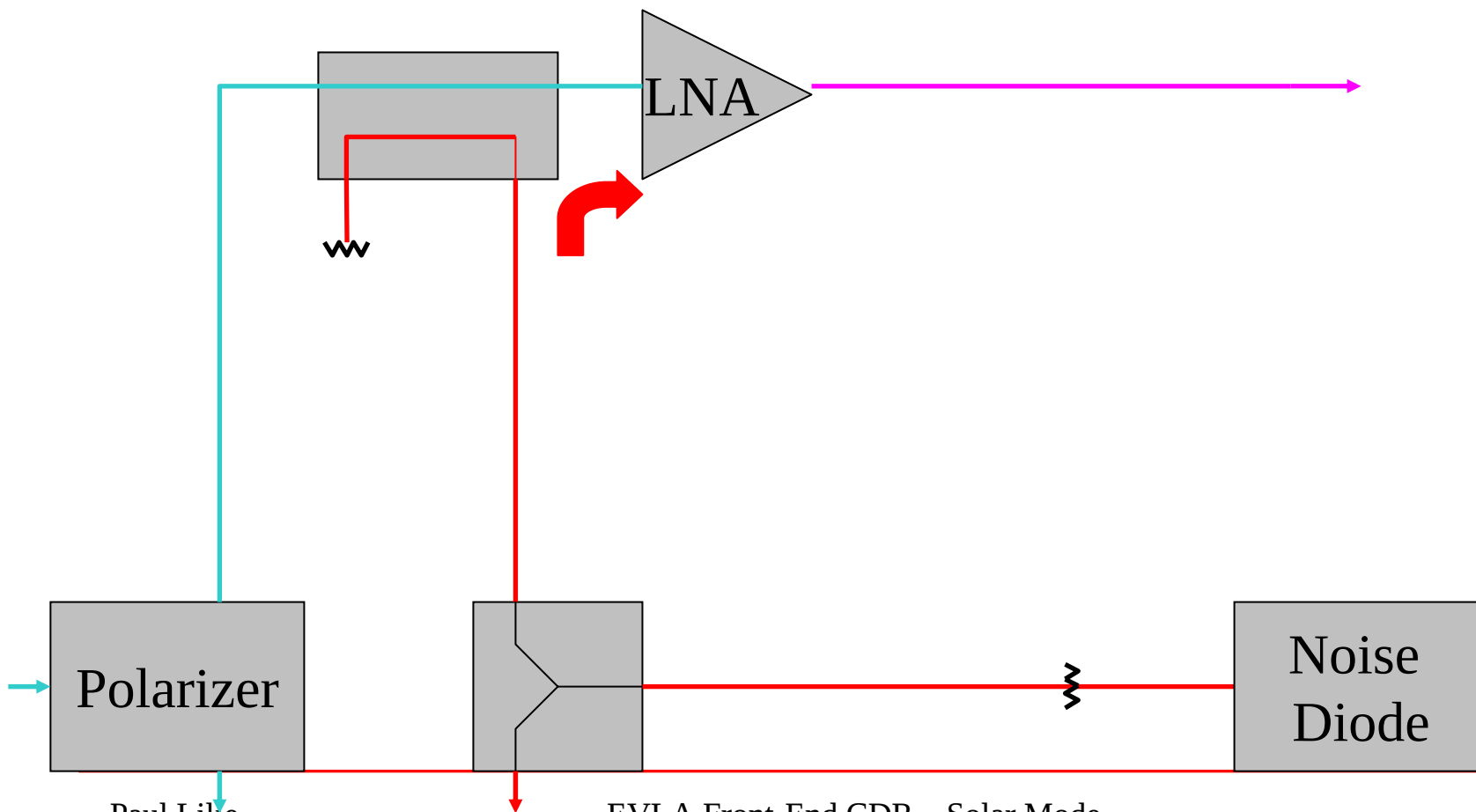
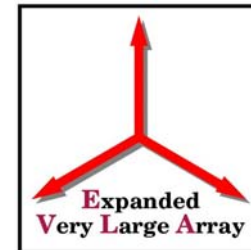
Solar Power Levels



- $1 \text{ SFU} = 10^4 \text{ Jy} = 1250 \text{ Kelvins at VLA}$
- Max. flare = 100,000 SFU
- “Normal” $T_{\text{sys}} \sim 25 \text{ K} = 0.02 \text{ SFU}$
- Max/Normal = 67 dB range.
- Receivers & Noise “Cal” must accommodate 67 dB range.



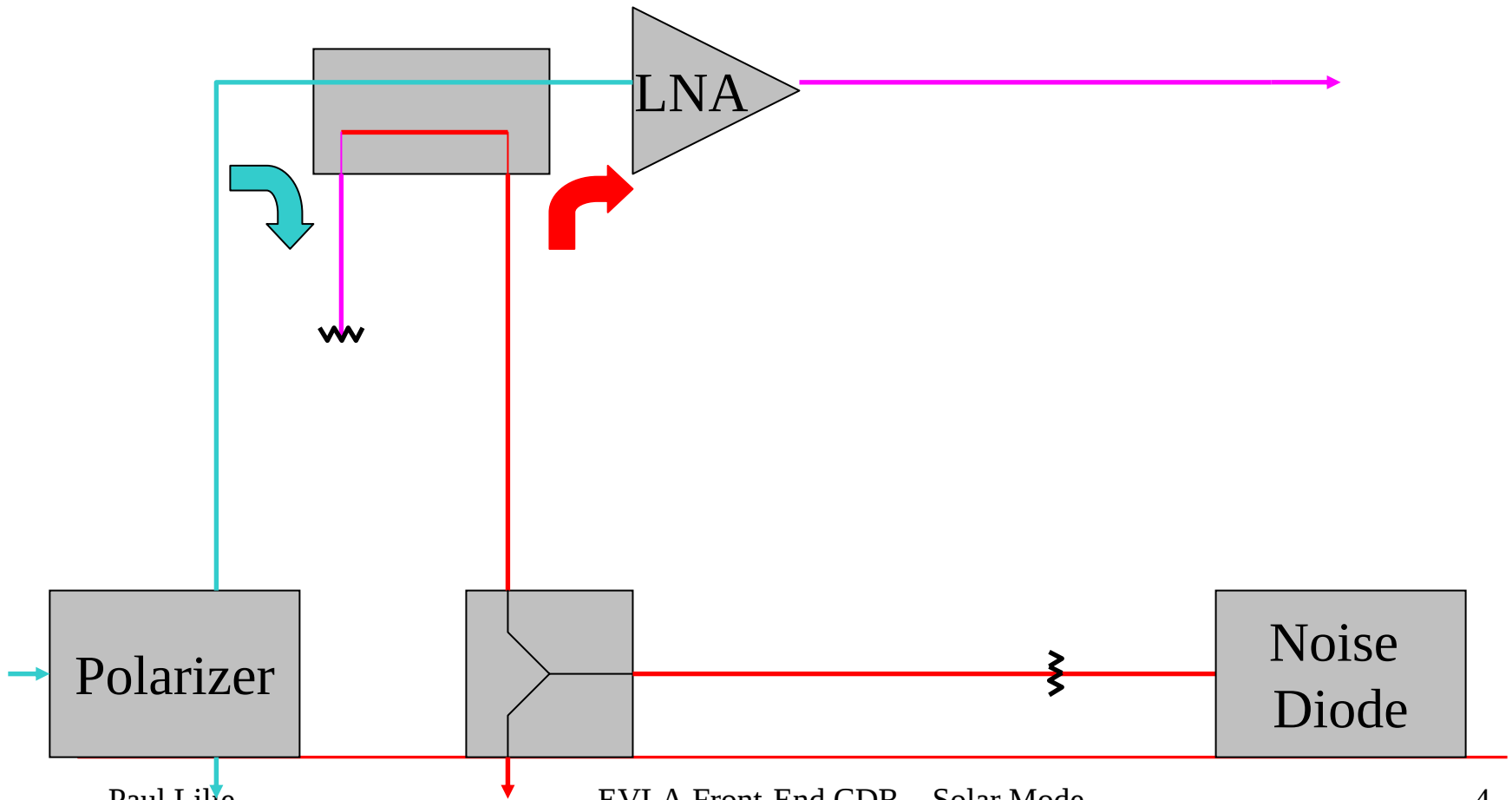
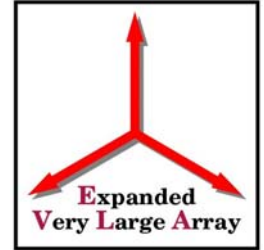
Generic Receiver (One Polarization Shown)



Paul Lilie

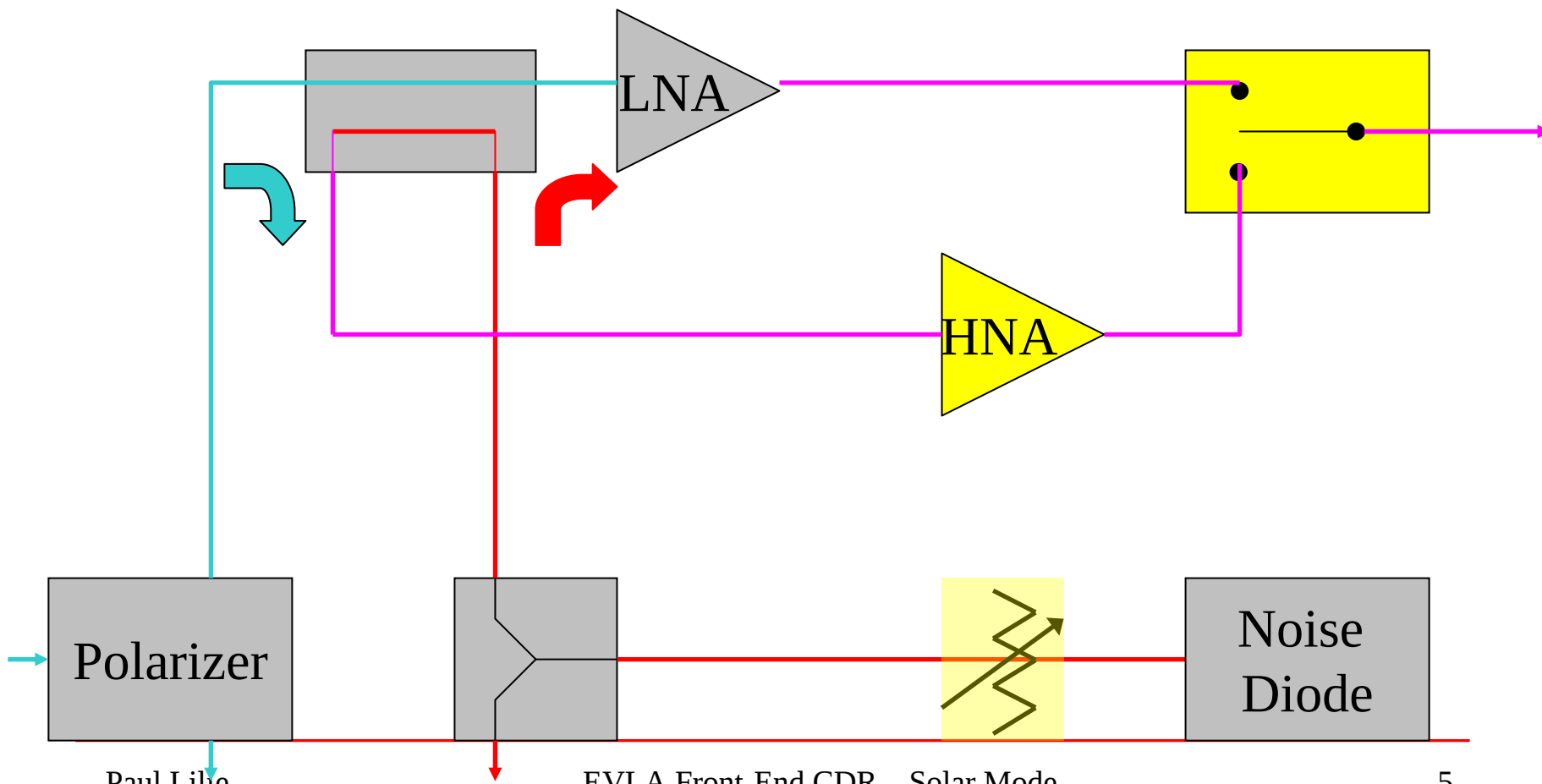
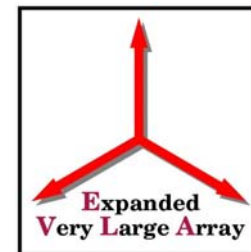
EVLA Front-End CDR – Solar Mode

April 24, 2006



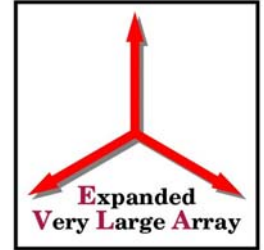


Generic Receiver Solar Additions





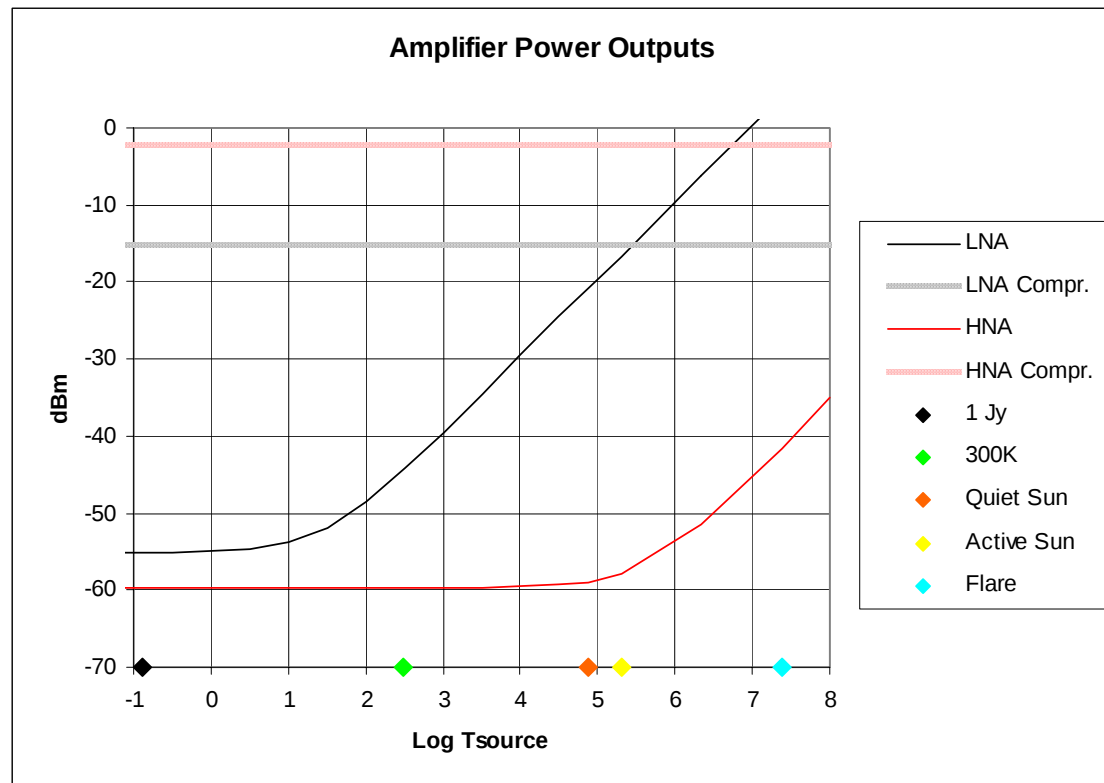
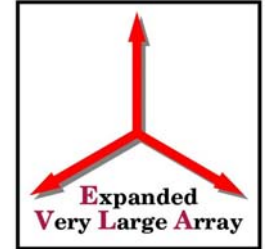
New Components Required



- “High Noise” amplifier (2)
- SPDT RF switch (2)
- Steppable (vs. fixed) attenuator (1)

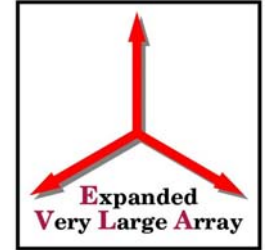


Amplifier Power Out





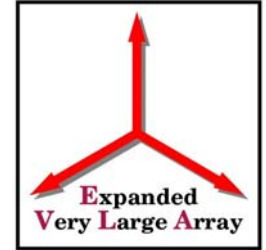
Additional Requirements



-
- Requires accurate “cal” values.
 - Requires phase transfer between modes.



Conclusions



-
- No compromise of “normal” observing.
 - Accommodates wide input range.
 - Few additional components.
 - Can be added later without major rebuild.