OMEGA-PHI II improvements

The VCO core:

- a parasitic noise effect especially audible at low oscillator frequencies at the **Omega-sine/tri outputs** exactly when the thru-zero operation begins to start by FM-modulation through a sine modulator is

  reduced by 15 db and is so no longer audible!
  BTW: a similar noise at the Phi-sine/tri outputs was not reduced!

- highly improved oscillator **FM-stability** by

  → **a.)** a new precision rectifier design leading to terrific in-tune FM synthesis over the full index over a very wide frequency range.

  → **b.)** a new core-symmetry circuit for a perfect balanced triangle wave eliminates tendencies to asymmetric tri/sine shapes even at high FM-*modulation frequency/carrier frequency* ratios. This leads to no more carrier-sine distortions and no detunes even at high ratios.

  → **c.)** improved thermal board design for better frequency stability and linearity at very high frequencies and thus more stable FM results, generally.

- extended maximum FM index from 44 to now **50**.

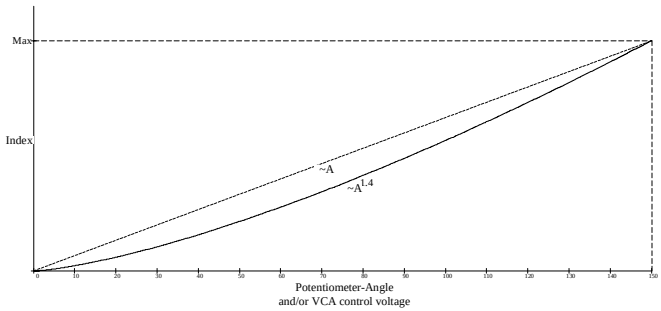
The VCO environment:

- completely new VCA design for FM and PM providing **ultra low noise** and **ultra low control feed-through** capability

  → ultra low **constant or transient frequency shifts** with varying FM indices in both modes, DC and AC.

  → **cleaner sound**, especially for PM and also for FM at higher oscillator frequencies, where VCA noises become relevant.

- smoother VCA-index curve for better control even around zero (starting of modulation, see graphic)



- **reduced potentiometer noises** for PM Phi (-360° - +360°) and some other more.