

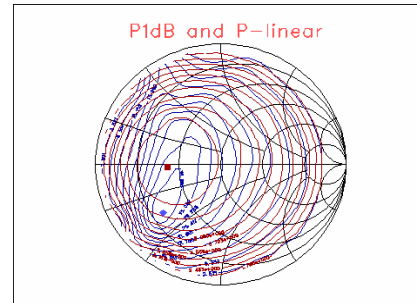
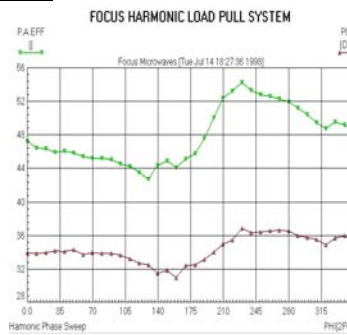
Technical Note 1-98

Harmonic Load Pull Upgrade For Focus Microwaves CCMT® Systems

Programmable Harmonic Tuners (PHT) of FOCUS Microwaves can be used to upgrade automatic load pull systems already in operation. Each harmonic tuner provides very high reflection factors at both harmonic frequencies $2f_0$ and $3f_0$ independently tunable from the fundamental frequency impedance, without need for triplexers, thus allowing both Harmonic Phase Sweep, continuous over 360° , and automatic Peak Search of Output Power, Power Added Efficiency, ACPR, P1dB or Intermod as a function of the phase of the second and third harmonic impedance. The benefits of such a test capability are known to be up to 15% higher amplifier efficiency and up to 8dB better linearity.

Required Components for the Upgrade:

- One or two programmable Harmonic tuners (PHT) for frequencies from 400 MHz up to 60 GHz.
- One PHT tuner controller for IBM PC
- "WinPower" Load Pull Software, version 6.0 for Windows 95/98 or NT, with Harmonic Tuning option.



Typical FOCUS Compression Load Pull Contours

Harmonic Phase Sweep of PAE and Pout

