

○ TECHNICAL ARTICLE

XP POWER'S PATENTED S-TECHNOLOGY

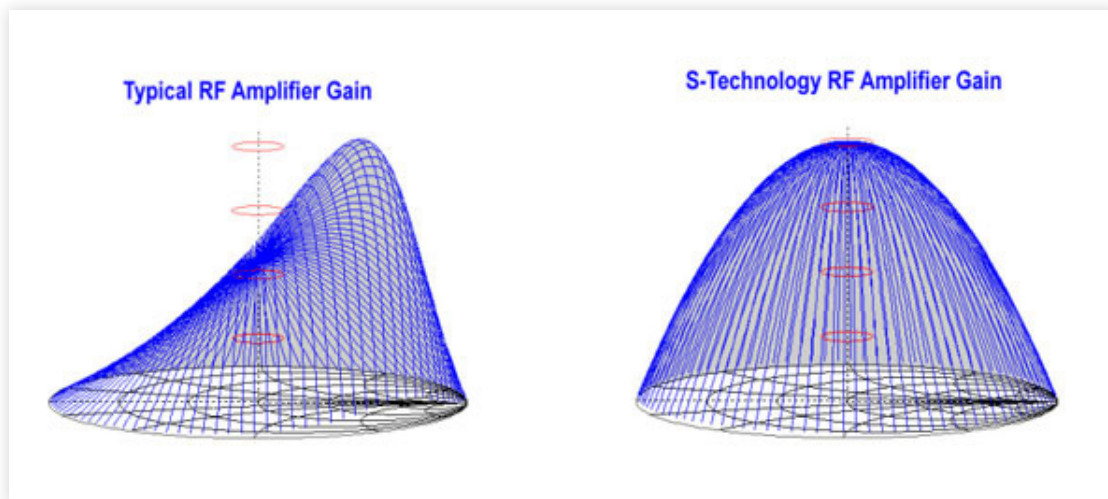
XP Power's latest generation of RF generators include S-Technology, a new stabilizing technology that greatly reduces the interaction of the plasma chamber--matching network load with the generator. S-Technology eliminates the oscillations or "squegging" that may occur during process tune-in and whenever process conditions change. This increased stability reduces process development time and improves process repeatability. Since oscillations can damage the matching network and the RF generator, S-Technology increases the life of these components and improves the reliability of the entire system.

What it does:

Optimizes amplifier performance, reducing power gain changes due to plasma impedance fluctuations. Eliminates RF plasma instabilities, headaches from transmission line length matching, mismatch conditions and process reliability issues.

Delivers:

- Enhanced process repeatability with a flat power delivery plane
- Improved system up-time allowing auto networks to properly tune
- Increased flexibility in selection of transmission line lengths
- Enhanced generator reliability
- Extended life of mechanical components in the matching network



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Traditional RF systems rely on a matching network that modifies the impedance of the circuit so the generator can maintain a stable output. This network works well under stable, well understood process conditions. When gas flows, chamber pressure or power levels change, however, the electrical system, made up of the plasma, the matching network and the generator, can become unbalanced. The result is a rapid fluctuation or jittering that changes faster than the matching network can respond. This jittering can damage components of the matching network and the RF generator, and may even result in wafer misprocessing.