Spread Spectrum — Profiles & Starting Points

- Profiles: triangular sweep, pseudo-random jitter; center-spread vs down-spread modes.

- Start with 3–6% depth; modulation rate outside audible band unless randomized sufficiently.

- Map datasheet options to real knobs: depth, rate, profile, enable/disable conditions.

Spread Spectrum — Side-Effect Matrix

- Audible noise (whine/beats), interaction with load cycles or clock domains.

- Loop-gain variation near crossover; ripple redistribution and efficiency changes.

- Energy relocation into sensitive bands (radio masks); verify both conducted and radiated

Spread Spectrum — Verification Flow

- Baseline spectra (conducted/radiated); enable profile A/B and overlay measurements.

- Sweep depth and rate; select minimal depth that meets limits with margin.

- Check cross-domain timing: PWM sync, data converters, audio subsystems.

Spread Spectrum — When to Use / Not Use

- Use when narrowband DM peaks dominate and layout/snubber are already optimized.
- Avoid as a first-line fix for strong CM/cable paths or severe ringing—fix geometry first.
- Document chosen profile and keep it as a reproducible knob in manufacturing test.