



# SUCCESS STORY

## Low Phase Noise Amplifiers for Surveillance Radars

*Best in class residual phase noise for improved spectral fidelity*

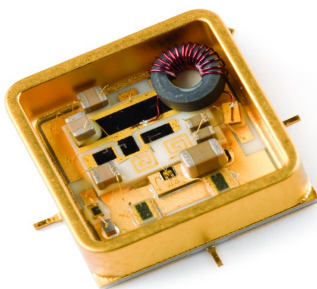
Phase noise is a critical characteristic in high-performance radar and communication systems, one that can seriously degrade performance. For surveillance radar systems, in particular, phase noise can affect the ability of the surveillance system to lock on its intended target. Degrading residual phase noise is one of the most difficult signal-processing challenges to overcome, but it can be addressed by using low phase noise amplifiers which improve the signal-to-noise ratio (SNR).

### A Clear Signal

Spectrum Control has significant expertise in amplifier designs. We guarantee high-quality, ultra-low phase noise performance across our extensive amplifier product line that's been proven in military systems, such as the Patriot guided missile air defense system, and in high-end FAA commercial systems.

***Standard and customized designs  
offered to meet unique requirements***

By incorporating expert design techniques, material selection, and in-house testing in the development process, Spectrum Control guarantees ultra-low phase noise performance in its line of Series PM Amplifiers. We ensure performance by using high-quality silicon, hybrid thick and thin film, chip and wire, and SMT processes with leading-edge semiconductor technologies. All Spectrum Control low phase noise amplifiers incorporate hermetically-sealed packaging for added environmental protection.



*Spectrum Control's amplifiers feature best in class phase noise for enhanced signal-to-noise ratio*



### Highest Reliability

Spectrum Control's PM Series amplifiers are designed and tested to MIL-PRF-38534 and MIL-STD-883 standards. Nearly all designs can be screened to MIL-PRF-38534 Class K to meet demanding space/flight applications. Units are tested a minimum of twice during the production cycle to ensure that all delivered units exceed expectations for performance and reliability.

Amplifier package options include our surface-mounted package and SMA connectorized housings for added flexibility. For higher-power requirements, the transistor is bonded directly to an AlN heat spreader to dissipate heat. The critical performance features of Spectrum Control low noise amplifiers includes:

- Phase noise performance as low as -181dBc/Hz (10kHz offset)
- Second order intercept performance as high as +113 dBm
- Medium power drivers to 1 watt
- Frequencies to 35 GHz
- MIL PRF Class K screening always available
- Guaranteed (100% tested) performance using high-quality transistors in unique circuits up to 3 GHz.