

The Advanced Photon Source 352-MHz RF Systems – A Case for Solid State?

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The Advanced Photon Source (APS) booster and storage ring rf systems utilize 352-MHz, 1.2 MW klystrons as final rf amplifier devices. After seventeen years of APS operation, optimized system designs and detailed preventative maintenance activities have resulted in rf system reliability statistics that have exceeded the wildest expectations hoped for at the start of APS operations. How we learned to bullet-proof rf systems and tame skittish klystrons will be discussed. The conceptual design for a solid state conversion at APS will also be discussed with a focus on the daunting challenge of matching the reliability of our existing klystron-based rf systems.

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