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# Liquid Cooled, Hot Swappable SSPA Family for High Power Applications



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*A new technologically advanced liquid cooled and scalable architecture is available from Empower RF Systems. This breakthrough solid state design replaces tube technology to bring new capabilities to applications where tens and hundreds of kilowatts of CW and Pulse power are required. Available frequency coverage from HF to X-band. This remarkable architecture brings together four major technology advancements.*

***First*** is the fully digital Peak and RMS Detection providing waveform flexibility and accurate metering allowing asymmetrical and random pulse width and duty cycle operation on Pulse amplifiers. Short and Long Pulse Capabilities are 100ns to 500+usec and up to 500KHz PRF's and 20% Duty Cycles.

***The second*** advancement is the combination of embedded firmware, software, and real time processing/control bringing multi-use flexibility to operate in any application. User selectable multimode operation can be dynamically configured. Important to note, CW amplifiers offer the same pulse performance as our pulsed amplifiers with no limit on duty cycle while pulsed amplifiers allow de-rated CW operation.

No single point of RF device failure is ***the third design element***. The amplifier layout consists of a system controller in a 3U and up to 16 hot swappable 2U amplifier drawers with each amplifier drawer contains an integrated power supply. With this arrangement, in the event of a failure, only a fractional reduction of output power occurs the amplifier system remains on air. The 2U amplifier drawers are hot swappable and there is no high voltage power supply within the transmitter.



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***The fourth*** major design element is scalability which creates an affordable upgrade path for future power needs by adding hardware to an existing system. Additional racks can be combined and for racks not fully populated, 2U amplifier drawers can be added without the need for tuning, since each 2U amplifier drawer and full system rack is digitally set for phase and gain.

Download Liquid Cooled Scalable SSPA Brochure:

[https://www.empowerrf.com/download/EmpowerRF\\_Liquid\\_Cooled\\_Systems.pdf](https://www.empowerrf.com/download/EmpowerRF_Liquid_Cooled_Systems.pdf)

Complete Empower RF Amplifiers lineup:

[http://www.empowerrf.com/products/rf\\_power\\_amplifier.php](http://www.empowerrf.com/products/rf_power_amplifier.php)

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*Empower RF Systems is the technology leader in high power amplifier solutions for reliable communications, defense, and industrial applications. Our products incorporate the latest semiconductor and power combining technologies and originate from an extensive library of "building block" designs. Solutions range from basic modules to multifunction PA assemblies with embedded real time microprocessor control.*

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