SCALABLE SOLID STATE POWER

IS A BETTER CHOICE

FEATURES

- Liquid Cooled Scalable Power Architecture in CW or Pulse Configurations
- No Single Point of RF Failure
- Distributed Power Supplies
- "On Air" Hot Swapping Capability is Available
- Only Fractional System Spares Needed for Complete Back up System

  Only Spare a Couple of 2U Amplifier Drawers and One Controller

  The Controller is Common Across the Portfolio

- System will Remain Operational and "On the Air" with Graceful Power Degradation

  In the Event of an RF Component Failure or High VSWR Condition

  Loss of an Amplifier Drawer is Only a Fractional Reduction of Output Power

- Asymmetrical and Random Pulse Width and Duty Cycle Operation
- Short and Long Pulse Capabilities - 200ns up to 500usec

  500KHz PRF's and 20% Duty Cycles

- Full Digital Peak and RMS Detection for Accurate Metering
- No External Cabling, Full Back Plane Implementation Ensures Electromagnetic Compatibility
- Ethernet Rapid Spanning Tree Architecture for Network Redundancy
- Performance Monitoring and Systems Reporting – Current, Voltage, Temperature down to the Pallet and Device Level
- Web API or SCPI for M2M Interface
- Continuous BIT, Down to the Device Level, Web AP or SCPI for
- Each 2U Amplifier "Building Block" is Digitally Set for Phase and Gain

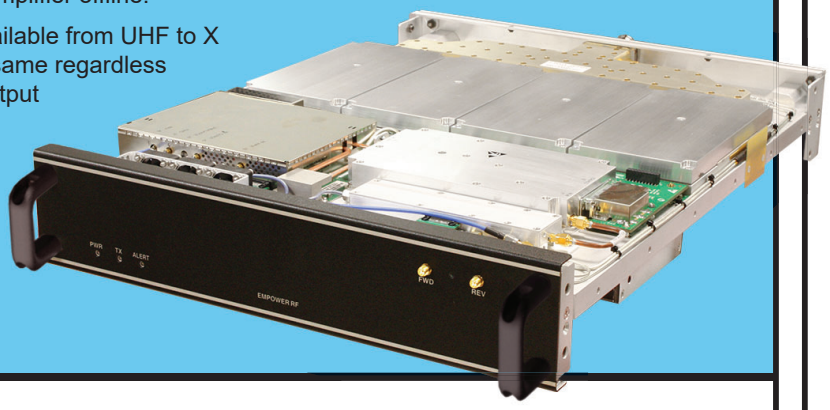
Band	Pulsed Model Output Power (20% Duty Cycle) Single 6' Cabinet	Pulsed Model Output Power (20% Duty Cycle) Two 6' Cabinets	CW Model Output Power Single 6' Cabinet	CW Model Output Power Two 6' Cabinets	Semiconductor Technology
HF	20 KW	36 KW	20 KW	36 KW	50V LDMOS
VHF	110 KW	200 KW	20 KW	40 KW	50V LDMOS
UHF	110 KW	200 KW	20 KW	40 KW	50V LDMOS
L	34 KW	61 KW	9 KW	17 KW	50V GaN on SiC
S	68 KW	122 KW	13 KW	24 KW	50V GaN on SiC
C	54 KW	103 KW	11 KW	20 KW	50V GaN on SiC
X	15 KW	28 KW	3 KW	6 KW	50V GaN on SiC

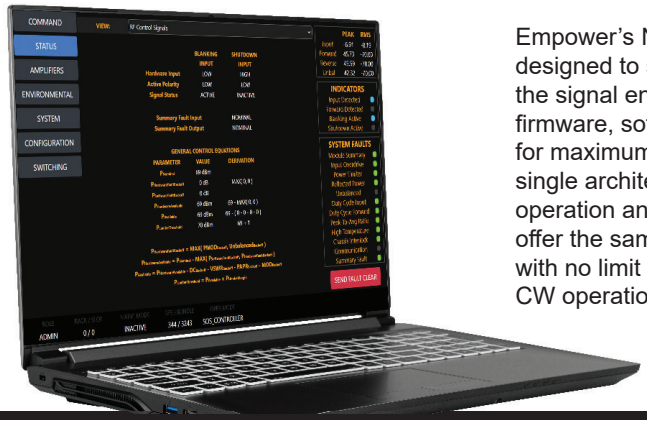
THE MOST FLEXIBLE AMPLIFIER SYSTEM AVAILABLE

Each amplifier “building block” includes an integrated power supply in its 2U chassis. This arrangement improves pulse droop performance while eliminating the risk of a single power supply failure taking the entire amplifier offline.

Narrow and broadband configurations are available from UHF to X Band CW or Pulsed. The architecture is the same regardless of frequency – RF configurations driven by output power requirements. Each amplifier drawer is fully “hot swappable” with proven dripless technology.

You can increase output power to an existing amplifier by adding 2U amplifier building blocks (in even numbers) or adding additional complete racks.





Empower’s Next Generation liquid cooled amplifier is designed to stay ahead of the increasing complexities of the signal environment. The combination of embedded firmware, software, and real time processing/control allows for maximum flexibility and operation in any application. This single architecture is capable of user selectable multimode operation and can by dynamically configured. CW Amplifiers offer the same pulse performance as our pulsed amplifiers with no limit on duty cycle and the Pulsed amplifiers allow CW operation 7dB below rated peak power.

USER SELECTABLE

OUTPUT POWER MANAGEMENT

- Automatic Gain Control (AGC) with Peak Power Detection
- AGC with RMS Power Detection
- Automatic Level Control (ALC) with Peak Power Detection
- ALC with RMS Power Detection
- Manual Gain Control (MGC)

INPUT SIGNAL MODULATION

- FM, AM, Pulsed, CW
- CDMA, FSK, QPSK, OFDM
- Multi-tone
- Frequency Hopping

INPUT AND OUTPUT DETECTORS

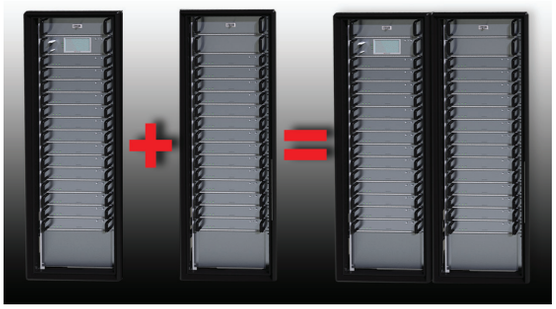
- Peak
- RMS

SCALABLE UPGRADE PATHS

PLANNING FOR AN UNCERTAIN FUTURE

Empower's scalable solutions offer an affordable upgrade path for future power needs by adding hardware to an existing system.

Our solutions provides three levels of scalability which can be exercised independently or in any combination:



- Increased number of 2U amplifier drawers per rack
  - *For racks not fully populated, 2U amplifier drawers can be added in pairs*
  - *A partial system contains an even number of 2U amplifier drawers (A full rack contains 16)*
- Increase number of racks
  - *Full racks can be combined with additional 1, 2,3, or 5 racks*
  - *For racks not fully populated, "like populated" racks can be combined*
- Increase the amplifier's duty cycle for pulsed systems - consult factory

INSTALLATION AND ENGINEERING SUPPORT

Empower offers liquid cooling system design support and installation for both closed loop systems or integration into existing facility chiller systems. In addition, we offer on-site acceptance testing support and user training of the complete amplifier system.

- Scalable cooling systems available
- Easily integrated into existing facility chillers
- Closed loop heat exchangers adaptable to your site
- External pump or integrated into rack
- Redundant pump systems optional
- Redundant cooling pumps and auto changeover optional

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