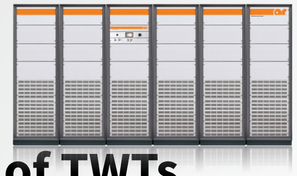
Powerful and Reliable: AR **Solid State Amplifiers** deliver all the Benefits

AMETEK®
COMPLIANCE TEST SOLUTIONS



... and none of the **risks of TWTs**

If you've experienced the uncertainties and risks associated with High Power high-frequency TWT amplifiers, it's time to revolutionize your approach. Say goodbye to the limitations of traditional TWTA amplifiers and embrace the future with the new generation of-solid-state amplifiers.

Re-thinking Solid State Technology Limits:
Our groundbreaking high-power amplifiers are redefining the boundaries of solid-state applications. with the power and frequency capabilities traditionally associated with TWT technology.

Seamless Expansion with Advanced Combiner Technology:
Our advanced combiner technology means you can scale up to unprecedented power levels, setting new benchmarks in solid state amplifier performance. The technology ensures seamless expansion, providing you with the flexibility to meet evolving demands.

Why THINK Solid State?

TWT

INDUSTRY **DECLINE**:
With a dwindling industry and a shortage of skilled personnel, the maintenance of TWT ampli- fiers becomes a daunting challenge.

LONG WARM-UP TIME AND MAINTENANCE:
TWTAs require a warm-up period before reaching optimal operating temperature for optimal performance.

POOR **HARMONIC PERFORMANCE**
TWTAs are inherently non-linear devices. This means that when they amplify a signal at a specific frequency (fundamental frequency), they also generate unwanted signals at multiples of that frequency (harmonics). These harmonics can cause several problems requiring the additional purchase of harmonic filters to remove the unwanted signals.

RELIABILITY CHALLENGES:
TWTAs can be delicate as they rely on fragile vacuum tubes that require constant maintenance

EXTENDED **REPAIR TIMES:**
A failed TWT amplifier can lead to agonizing repair lead times of up to 12 months, disrupting critical operations.

CATASTROPHIC **FAILURE:**
A tube failure in TWT amplifiers means complete breakdown, leaving you without amplification when you need it most.

HIGH COST OF OWNERSHIP:
Due to the long repair time of TWTA additional spares are typically purchased that are used to minimize down time in mission critical applications.

Solid State

SUPERIOR RF **PERFORMANCE:**
AR SSPAs exhibits lower noise figures and offers better linearity compared to TWTAs. This translates to a cleaner signal with minimal distortion, both are particularly crucial in applications like radar and communication systems.

IMPROVED **HARMONIC PERFORMANCE:**
More linear operation, design techniques and lower operating power all contribute to ensure AR's SSPAs have excellent harmonic performance negating the need for additional harmonic filters

ENHANCED RELIABILITY:
Using robust semiconductors our solid-state alternatives are built for versatility, ensuring reliable performance and long MTBF even in dynamic, mobile scenarios.

SWIFT MAINTENANCE:
Experience minimal downtime with our solid-state technology that allows for quick and efficient maintenance, measured in hours or days, not months.

CONTINUED OPERATION DESIGN:
Unlike TWT amplifiers, our solid-state alternatives utilize a multiple module design, allowing for soft failures. Even if some modules malfunction, the amplifier remains operational at a reduced power level.

COST-EFFICIENT OWNERSHIP:
Reduce the total cost of ownership significantly with our solid-state alternatives. Maintenance is simplified, a single amplifier is typically purchased and customers can replace defective modules themselves, saving both time and money.

World First Solid State Industrial Amplifiers

With over two decades of experience in the defense sector, we possess a deep understanding of the distinctive needs within this specialized market. Our track record includes successfully addressing challenges for global defense organizations through groundbreaking applications of solid-state amplifiers, marking several world-first achievements.

Frequency	Power Level	Amplifier Type	Customer	Country	Application
1.0-6.0GHz	3 kW	CW	European Defense Agency	France	HIRF EMC (High Intensity Radiated Fields) & Radar
0.1-1.0GHz	10 kW	Pulse	U.S. Department of Defense	USA	Electronic Warfare
1.0-6.0GHz	5 kW	Pulse	U.S. Department of Defense	USA	Electronic Warfare
1.0-6.0GHz	50 kW	Pulse	European Defense Agency	Germany	Radar & Electronic Warfare
1-400MHz	80 kW	Pulse	U.S. Department of Defense	USA	NEMP (Nuclear Electromagnetic Pulse)
8.5-10.5GHz	30KW	Pulse	U.S. Department of Defense	USA	Electronic Warfare
0.1-1.0GHz	150KW	Pulse	U.S. Department of Defense	USA	HIRF EMC (High Intensity Radiated Fields) & Electronic Warfare

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