

CPI SuperLinear® TWTAs: The Greenest and Most Efficient HPAs
COMPARE the SuperLinear® 1.25 kW Ku-Band TWTA to the latest GaN-Based SSPA

Both TWTAs and SSPAs continue to improve over time in terms of size, weight and efficiency.

CPI's SuperLinear® TWTAs are proven to be the most efficient amplifiers on the market at higher frequencies and power levels, even when compared with GaN SSPAs. Their superior power efficiency not only enables significant operational cost savings over other amplifiers, they also operate at cooler temperatures resulting in outstanding reliability and TWT MTBF that rivals SSPAs.

Similarly, the use of GaN devices allows SSPAs to be used at higher RF power levels in smaller packages than previously available using GaAs devices. GaN high power BUCs can be smaller and lighter than GaAs BUCs, which makes them very useful for mobile and transportable applications. GaN SSPAs are also more efficient than GaAs SSPAs, which helps users save operating costs.

This chart compares CPI's Ku-Band SuperLinear® outdoor TWTA against a comparable GaN-based HPA. All information is from published sources. For more information, contact your local CPI representative today or visit us at www.cpii.com/satcom.

	CPI TL12UO 1.25 kW Outdoor TWTA		Competitor 1.25 kW GaN-Based Outdoor SSPA
Operating Freq. (GHz)	12.75 - 14.50, 13.75 - 14.50, 13.75 - 14.80	✓	14.0 - 14.5, 13.75 - 14.50
PLINEAR where IMD = -25 dBc or better, w/ respect to each of two equal carriers	540 W (57.3 dBm) w/lin	✓	355 W (55.5 dBm)
Power Consumption	2200 W at PLINEAR	✓	4400 W at PLINEAR
Power Efficiency at Plin	24.5%	✓	8.1%
Operating Cost per Yr, 24/7 operation	Baseline	✓	2x more expensive
Cost per Linear Watt per Yr	Baseline	✓	3x more expensive
Heat Dissipation at 400 W Output Power	1800 W typ.	✓	4000 W typ.
Weight	79 lbs (36 kg)	✓	176 lbs (80 kg)
Volume	3,256 cubic inches (53.35 dm ³)	✓	8,814 cubic inches (142.8 dm ³)

Note: linear power as presented here may not match the stated linear power on certain data sheets, because the method of calculating available linear power has been converted to the widely used commercial method, where the specification is given with respect to each of two equal carriers, rather than with respect to the sum of both carriers.

