

COMPARE the Peak Power 750 W C-Band ODU to the latest 600 W GaN-Based SSPA

Emergence of solid state gallium nitride (GaN) technology is one of the latest areas of innovation in the satcom amplifier industry. 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.

Other significant innovations are keeping TWTAs at the leading edge of technology: CPI's SuperLinear® TWTAs are proven to be the most efficient amplifiers on the market, 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 higher TWT MTBF that rivals SSPAs.

This chart compares CPI's 750 W C-Band Peak Power Outdoor TWTA against the latest comparable 600 W GaN-based HPA, based on published data. For more information, contact your local CPI representative today or visit us at www.cpii.com/satcom.

	CPI TL07CO 750 W ODU		600 W GaN-Based SSPA	
Operating Frequency (GHz)	5.850 - 7.025 GHz	✓	5.850 - 6.725 GHz	
PLINEAR <i>where IMD = -25 dBc or better with two EQUAL carriers</i>	325 W (55.1 dBm) min.	✓	251 W (54.0 dBm) nom.	
Gain Adjustment Range	0 to 30 dB typ.	✓	20 dB in 0.1 dB steps	
Power Consumption	1700 W at PLINEAR	✓	2200 W at PLINEAR	
Power Efficiency at Plin	19.1%	✓	11.4%	
Operating Cost per Year		✓	30% more expensive	
Cost per Linear Watt		✓	67% more expensive	
Heat Dissipation	1300 W max.	✓	1949 W nom.	
Weight	35.9 kg (79 lbs)		26 kg (57.3 lbs)	✓
Volume	53,548 cubic cm (3,262 cubic inches)		30,562 cubic cm (1,867 cubic inches)	✓

Summary: CPI's 750 W Peak Power TWTA provides 70 more watts of linear power while consuming 500 fewer watts. While the GaN SSPA is lighter and smaller, two units must be combined in order for it to achieve a system that is as powerful as the TWTA. See the comparison of this TWTA with the GaN 1000 W system for details.