



New High-Performance SSPA Technology

Delivering a Higher Standard of Efficiency,
Reliability & Bandwidth



QORVO
all around you

High-Power, Ultra-Broadband Performance & Solid State Reliability Using Spatium® Technology

Patented Spatium RF power combining technology from Qorvo® provides a highly reliable, efficient alternative to traveling wave tube amplifiers (TWTAs) for commercial and defense communications, radar, electronic warfare (EW) and other defense systems. Spatium solutions are readily customizable and dramatically improve broadband RF power and efficiency through patented coaxial spatial combining techniques using Qorvo gallium nitride (GaN) MMIC amplifiers. Spatium's all solid-state construction delivers longer service lifetimes than comparable TWTAs or conventional planar power combining products; they provide clear size, weight, power and cost (SWaP-C) advantages. RF system designers can use Spatium to achieve unprecedented efficiency with output power from hundreds to thousands of watts.

Spatium Amplifiers

Frequency (GHz)	Psat (W)	Small Signal Gain (dB)	Power Gain (dB)	PAE (%)	Vd (V)	Power (VAC)	ECCN	Part Number
2-6	300	55	50	20	-	208-264	3A001.b.4.a.4	SPB1003
2-7.5	150	30	25	30	28	-	3A001.b.4.b.1	QPB1006*
2-18	75	20	18	18	22	-	3A001.b.4.b.4	QPB1000*
2-18	75	53	50	15	-	90-264	3A001.b.4.b.4	QPR1001*
2-20	15	45	44	8	-	90-264	EAR99	RM022020
6-18	300	27	23	20	20	-	3A001.b.4.b.4	QPB1004*
27.5-31	200	18	16	23	20	-	3A001.b.4.b.4	QPB1003*
27.5-31	120	21	19	25	20	-	3A001.b.4.b.4	KA120W-2731

Typical parameters at 40C baseplate

* In development

Benefits of Spatium Technology

- Ultra-broadband operation: up to decade BW
- Efficiently combines 10, 16, 20 or 32 amplifiers
- 93% combining efficiency/high-operating frequency
- Smaller than comparable TWTAs
- High reliability: 7+ years compared to TWTAs
- No limiting microstrip or other legacy architectures
- Graceful degradation
- Lower supply voltage: 20-48V
- No warm-up

Applications

- Electronic warfare
- Satellite & terrestrial communications
- Radar systems
- Test & measurement

