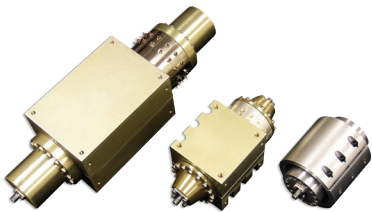


# New High-Performance SSPA Technology

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 applications. Spatium solutions are readily customizable and dramatically improve broadband RF power and efficiency through patented coaxial spatial combining techniques. Qorvo's solid-state gallium nitride (GaN) MMIC amplifiers deliver longer service lifetimes than comparable TWTAs or conventional planar power combining products. Spatium provides clear advantages in size, weight, power and cost (SWaP-C). RF system designers can use Spatium to achieve unprecedented combining 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 (WAC)	ECCN	Part Number
2-6	400	26	18	27	28	–	3A001.b.4.a.4	QPB1005
2-7.5	150	30	23	30	28	–	3A001.b.4.b.1	QPB1006
2-18	75	22	13	18	22	–	3A001.b.4.b.1	QPB1000
2-18	50	20	52	N/A	–	220	3A001.b.4.b.1*	QPR1006
2-20	15	43	37	N/A	–	90-264	EAR99	RM022020
8-11	750	27	24	32	28	–	*	QPB1024**
6-18	200	25	21	20	20	–	3A001.b.4.b.4*	QPB1004**
27-31	100	27	21	20	20	–	3A001.b.4.b.4*	QPB2731**
32-38	115	21	12	18	25	–	*	QPB1017**

Reference the respective data sheet on Qorvo.com for the current specifications. Demonstration units are available for several of the above products.

\* Forecasted ECCN. \*\* In development. RM022020 and QPR1006 are rack mounted, self-contained with power and cooling.

## 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
- Advanced product architecture provides graceful degradation
- Lower supply voltage: 20-48V
- Provides instantaneous bandwidth without warm-up time

## Applications

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

