

# Air Traffic Control (ATC) Radar Products

## Klystrons

### Typical Operating Parameters

| Band   | Frequency (GHz) | Peak Power     |
|--------|-----------------|----------------|
| S-Band | 2.7 to 2.9      | 800 kW         |
| C-Band | 5.45 to 5.65    | 200 kW to 1 MW |

**Communications & Power Industries  
ATC Radar Product Platforms  
customized for your application.**

With a history of producing high power, high quality products, we can help you with your ATC radar.

Contact us at [ElectronDevices@cpii.com](mailto:ElectronDevices@cpii.com)  
or at call us at +1 978-922-6000

## Magnetrons

### Typical Operating Parameters

| Band | Frequency (GHz) | Peak Power | Duty Cycle |
|------|-----------------|------------|------------|
| L    | 1 - 2           | 1 W        | Various    |
| S    | 2.7 - 2.9       | 800 kW     | Various    |
| X    | 8.5 - 9.6       | 250 kW     | Various    |
| Ku   | 15.6 - 16.7     | 40 kW      | Various    |
| Ka   | 32.9 - 33.5     | 60 kW      | Various    |

## Solid State GaN Power Amplifiers

### Typical Operating Parameters

| Band | Frequency (GHz) | Peak Power (KW) | Duty Cycle |
|------|-----------------|-----------------|------------|
| S    | 2.7 - 3.7       | 1.3             | 10%        |
| X    | 9.0 - 10.0      | 1.0 and 1.8     | 10%        |

## Receiver Protectors and Limiters

### Typical Operating Parameters

| Band | Peak Power    | Average Power | Insertion loss | Recovery Time | Flat Leak | Spike Leak |
|------|---------------|---------------|----------------|---------------|-----------|------------|
| S    | Up to 1.25 MW | Up to 10 kW   | < 0.8 dB       | <1 μs         | < 50 mW   | < 250 mW   |
| X    | Up to 300 kW  | Up to 300 kW  | < 1.0 dB       | <1 μs         | < 50 mW   | < 250 mW   |
| Ku   | Up to 300 kW  | Up to 300 kW  | < 1.0 dB       | <1 μs         | < 50 mW   | < 250 mW   |
| Ka   | Up to 300 kW  | Up to 300 kW  | < 1.0 dB       | <1 μs         | < 50 mW   | < 250 mW   |



## Communications & Power Industries Air Traffic Control (ATC) Radar Products

### SOLID STATE GaN POWER AMPLIFIERS

S-Band  
X-Band

### RECEIVER PROTECTORS & LIMITERS

S-Band  
X-Band  
Ku-Band  
Ka-Band

### MAGNETRONS

L-Band  
S-Band  
X-Band  
Ku-Band  
Ka-Band

### KLYSTRONS

S-Band  
C-Band



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For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.  
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## Communications & Power Industries ATC Radar Products

### S-Band GaN High Power Transmitters

- Transmitter cabinet with 12 kW minimum peak output power
- Soft fail by virtue of power combining
- Full redundancy
- >160 dB of power attenuation available
- Designed for ATC shelter applications

### S-Band GaN High Power SSPAs

- 1.3 kW pulsed modules that can be power combined for higher peak power output
- Internal processor with BITE monitoring
- Self protecting

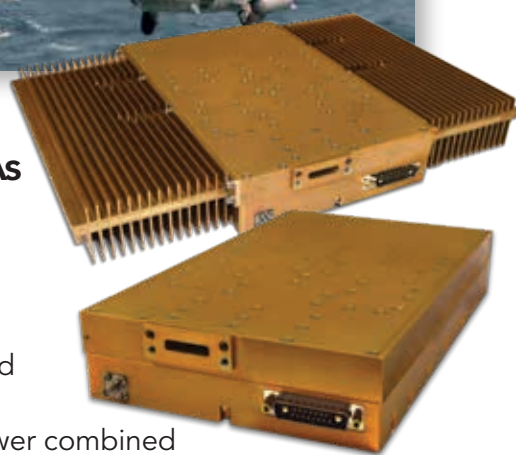


### X-Band SSPA's for airborne radar systems



### X-Band GaN High Power SSPAs

- Frequency range: 9.0 to 10.0 GHz
- BIT and controls via EIA-422 remote
- 1 kW and 1.8 kW pulsed modules at 10% duty
- Up to 12 kW when power combined



### Key features For Air Traffic Control

- BIT and controls via EIA-422 remote connection
- Built-in VSWR protection
- Compliant to NTIA regulatory requirements
- Provide high gain, excellent pulse fidelity
- Excellent pulse fidelity with low AM/PM, phase-noise and spectral regrowth performance
- Easy to maintain

### Magnetrons

- L, S, X, Ku and Ka Bands
- Excellent frequency stability
- Mechanically tunable frequency
- Air cooled anode
- Peak power up to 1 MW



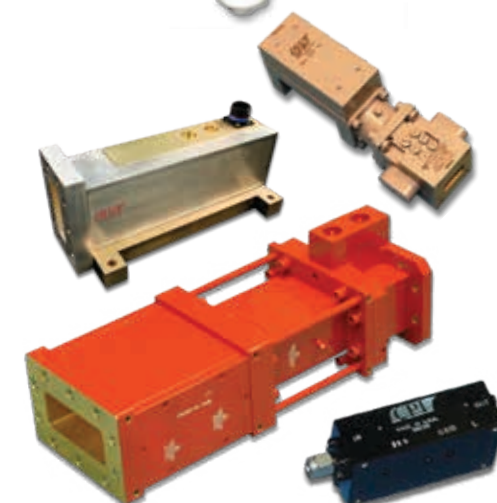
### Klystrons

- S-Band
- Excellent frequency stability
- Mechanically tunable frequency
- Air cooled
- Peak power up to 1 MW
- C-Band
- Excellent frequency stability
- Fixed tuned to 50 MHz IB
- Air cooled
- Peak power up to 250 kW



### Receiver Protectors and Limiters

- S, X, Ku, and Ka-Bands
- High peak power
- Low output leakage
- Superior broadband isolation
- Fast recovery time
- Low noise figures



### Check out all our ATC radar products at [www.cpii.com](http://www.cpii.com)

Communications & Power Industries is a major worldwide supplier of components for many ground based radar systems.

ATC is a service provided by ground-based controllers who direct aircraft on the ground and through controlled airspace. The primary purpose of the ATC systems is to prevent aircraft collisions and to organize and expedite the flow of airplane traffic in both commercial and military markets.

CPI is a major worldwide supplier of components for many ground based radar systems such as: Air Surveillance Radar, Air Route Surveillance Radar, Terminal Doppler Weather Radar (TDWR), Surface Movement Radar and Precision Approach Control and Landing Systems.

At CPI, we provide high quality microwave products supporting air traffic control radar with either klystron or magnetron based technology.