Air Traffic Control Radar Products

S and X-Band
Solid State GaN
Power Amplifiers

S, X, Ku, and Ka-Band
RPs and Limiters

L, S, X, Ku and Ka-Band
Magnetrons

• Solid State Power Amplifiers • Integrated Microwave Assemblies • Receiver Protectors
  • Control Components • Transmitters • Amplifiers • Modulators • Magnetrons
  • Crossed Field Amplifiers • Ring Loop Traveling Wave Tubes • Power Couplers
S-Band Solid State GaN Power Amplifiers for ATC

- Frequency range: 2.7 to 2.9 GHz
- BIT and controls via EIA-422 remote connection
- 1.3 kW pulsed modules
- 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

For use in Air Traffic Control radar systems

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
- 1 kW pulsed modules at 10% duty
- High efficiency GaN transistors
- Can be combined for higher power levels
- Easy to maintain
Magnetrons

• L, S, X, Ku and Ka Band Magnetrons
• Excellent frequency stability
• Mechanically Tunable frequency
• Air cooled anode
• Peak power up to 1 MW

Air Traffic Control Radar Products

CPI BMD 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 BMD 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 Beverly Microwave Division, we provide high quality microwave products supporting air traffic control radar with either Klystron or magnetron based technology.

Check out all our ATC radar products at www.cpii.com/bmd

Receiver Protectors and Limiters

• S, X, Ku, and Ka-Bands
• High peak power
• Very fast recovery times
• Low output leakage
• Superior broadband isolation
• Fast recovery time
• Low noise figures
Air Traffic Control Radar Product Platforms
Customized for your application.

Magnetrons

<table>
<thead>
<tr>
<th>Band</th>
<th>Frequency (GHz)</th>
<th>Peak Power</th>
<th>Duty Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>1 - 2</td>
<td>1 W</td>
<td>Various</td>
</tr>
<tr>
<td>S</td>
<td>2.7 – 2.9</td>
<td>800 kW</td>
<td>Various</td>
</tr>
<tr>
<td>X</td>
<td>8.5 – 9.6</td>
<td>250 kW</td>
<td>Various</td>
</tr>
<tr>
<td>Ku</td>
<td>15.6 – 16.7</td>
<td>40 kW</td>
<td>Various</td>
</tr>
<tr>
<td>Ka</td>
<td>32.9 – 33.5</td>
<td>60 kW</td>
<td>Various</td>
</tr>
</tbody>
</table>

Receiver Protectors and Limiters

<table>
<thead>
<tr>
<th>Band</th>
<th>Peak Power</th>
<th>Average Power</th>
<th>Insertion loss</th>
<th>Recovery Time</th>
<th>Flat Leak</th>
<th>Spike Leak</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Up to 1.25 MW</td>
<td>Up to 10 kW</td>
<td>&lt; 0.8 dB</td>
<td>&lt;1 µs</td>
<td>&lt; 50 mW</td>
<td>&lt; 250 mW</td>
</tr>
<tr>
<td>X</td>
<td>Up to 300 kW</td>
<td>Up to 300 kW</td>
<td>&lt; 1.0 dB</td>
<td>&lt;1 µs</td>
<td>&lt; 50 mW</td>
<td>&lt; 250 mW</td>
</tr>
<tr>
<td>Ku</td>
<td>Up to 300 kW</td>
<td>Up to 300 kW</td>
<td>&lt; 1.0 dB</td>
<td>&lt;1 µs</td>
<td>&lt; 50 mW</td>
<td>&lt; 250 mW</td>
</tr>
<tr>
<td>Ka</td>
<td>Up to 300 kW</td>
<td>Up to 300 kW</td>
<td>&lt; 1.0 dB</td>
<td>&lt;1 µs</td>
<td>&lt; 50 mW</td>
<td>&lt; 250 mW</td>
</tr>
</tbody>
</table>

Solid State GaN Power Amplifiers

<table>
<thead>
<tr>
<th>Band</th>
<th>Frequency (GHz)</th>
<th>Peak Power (kW)</th>
<th>Duty Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>2.7 - 3.7</td>
<td>1.3</td>
<td>10%</td>
</tr>
<tr>
<td>X</td>
<td>9.0 – 10.0</td>
<td>1.0</td>
<td>10%</td>
</tr>
</tbody>
</table>

With our history of producing high power, high quality products, let us help you with your air traffic control radar needs.

CPI: At the Heart of Leading Technologies

Communications & Power Industries (CPI) develops, manufactures and globally distributes components and subsystems used in the generation, amplification, transmission and reception of microwave signals for a wide variety of systems including radar, electronic warfare and communications (satellite and point-to-point) systems for military and commercial applications, specialty products for medical diagnostic imaging and the treatment of cancer, as well as microwave and RF energy generating products for various industrial and scientific pursuits.

The values listed above represent specified limits for the product and are subject to change. The data should be used for basic information only. Formal, controlled specifications may be obtained from CPI for use in equipment design.

For information on this and other CPI products visit our web page at www.cpii.com/BMD, or contact:
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