S-Band GaN SSPA for Air Traffic Control

VSS3617

Features:

• 12 kW power combined (minimum)
• BITE and controls local/remote
• Fully redundant
• Soft fail power combining
• Independent short and long pulse 50 dB sector power control
• Dual receiver channel inputs
• Internal processors with health monitoring
• Built-in programmable attenuation
• Touch screen front panel display

Benefits:

• High efficiency
• Excellent pulse fidelity
• Excellent AM/PM, phase noise, and spectral regrowth performance

CPI-Built Radar Transmitter

High efficiency, high power, and compact with proven GaN transistor technology.

CPI’s VSS3617 Solid State Power Amplifiers are reliable, highly-efficient and easy to maintain. The VSS3617 Solid State Power Amplifiers are designed for use as air traffic control radar transmitters and cover the 2.7 – 2.9 GHz frequency band. GaN transistors are combined into 1.3 kW bricks which are air cooled. The 1.3 kW bricks are power-combined using radial combiners and waveguide combiners.

Applications:

• Air Traffic Control

Optimized for Air Traffic Control Radars

This amplifier utilizes GaN transistors to provide high gain, high efficiency and excellent pulse fidelity. This results in exceptional AM/PM, phase-noise and spectral regrowth performance.

• 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 GaN Solid State Power Amplifier - VSS3617

### Specifications

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>2.7 to 2.9 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Saturated Peak RF Output</td>
<td>12 kW</td>
</tr>
<tr>
<td>Typical Pulse Width</td>
<td>1 to 100 µsec</td>
</tr>
<tr>
<td>Maximum Pulse Droop</td>
<td>0.5 dB</td>
</tr>
<tr>
<td>Maximum Duty Cycle</td>
<td>10%</td>
</tr>
<tr>
<td>Output Power Flatness across frequency range</td>
<td>1 dB</td>
</tr>
<tr>
<td>Nominal Small Signal Gain</td>
<td>62 dB</td>
</tr>
<tr>
<td>Stability</td>
<td>65 dB</td>
</tr>
<tr>
<td>Maximum Output VSWR</td>
<td>1.5:1</td>
</tr>
<tr>
<td>Maximum Harmonic Output</td>
<td>-65 dBc</td>
</tr>
<tr>
<td>Maximum Interpulse Thermal Noise</td>
<td>-160 dBm / Hz</td>
</tr>
<tr>
<td>Noise Power Density</td>
<td>-100 dBc into a MHz bandwidth</td>
</tr>
<tr>
<td>Pulse Double</td>
<td>800Hz – 1KHz</td>
</tr>
<tr>
<td>NTIA Compliance</td>
<td>Compliant with customer pulse shaping as required.</td>
</tr>
</tbody>
</table>

### Prime Power

- **Prime Power**: 380 VAC, 3 Phase, 50-60Hz

### Ambient Temperature

- **Relative Humidity**: 100% non-condensing
- **Altitude**: 10,000 feet (3.05km)
- **Shock and Vibration**: Air & Truck Transportation

### Cooling

- **RF Input Connection**: N type female
- **RF Output Connection**: WR 284
- **RF Output Monitor**: Control Connector
- **Dimensions (width)**: 32 in (81.28cm)
- **Dimensions (height)**: 74 in (187.96cm)
- **Dimensions (depth)**: 24 in (960.96cm)
- **Weight**: Less than 900 lbs. (408.23kg)

### Output Circulator

- **Output Circulator**: Provided for VSWR protection.

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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 webpage at www.cpii.com/bmd, or contact:

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