Overview

An ideal solution for both mobile and fixed Communication terminals. The Cascade-Line SSPAs / BUCs are designed for high efficiency resulting in an optimal compact form factor with high performance and reliability. With the advanced customer interface and HTTP embedded web page, the operator is able to monitor and control the BUC and the System Redundancy.

- Ku-Band GaAs: 80W / 100W / 125W
- C-Band GaAs: 150W / 200W / 250W
- X-Band GaAs: 150W / 200W / 250W

Features

- Compact size
- Available in AC
- Up to 250W of Linear power
- Built-in monitoring of critical parameters such as: RF power detection, mute control, over temperature shutdown, summary alarm
- IP55 rated housing and fan (weather proof construction)
- M&C Interfaces included: RS485, RS232, Ethernet and dry-contacts
- WEB interface and SNMP monitoring
- Redundant Ready
- 1:1 and 1:2 built into the BUC eliminating external controller
- Ku-Band: Optional Dual LO (Switchable), covers both regular and ext. Ku-Band
- Other frequency ranges available
- Optional 10MHz reference
- Optional output sample port
- Optional Remote control unit
# Cascade-Line GaAs SSPA BUC

## Technical Specifications

### Ku-Band

<table>
<thead>
<tr>
<th>Electrical Characteristics</th>
<th>80W</th>
<th>100W</th>
<th>125W</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Output at P1dB</td>
<td>49 dBm</td>
<td>50 dBm</td>
<td>51 dBm</td>
</tr>
<tr>
<td>RF Output at P Lin</td>
<td>46 dBm</td>
<td>47 dBm</td>
<td>48 dBm</td>
</tr>
<tr>
<td>Input Frequency Range</td>
<td>Lower Ku: 950 – 1450 MHz</td>
<td>Standard Ku: 950 – 1450 MHz</td>
<td>Extended Ku: 950 – 1700 MHz</td>
</tr>
<tr>
<td>Local Oscillator Frequency</td>
<td>Lower Ku: 11.80 GHz</td>
<td>Standard Ku: 13.05 GHz</td>
<td>Extended Ku: 12.80 GHz</td>
</tr>
<tr>
<td>Gain Stability Over Temp.</td>
<td>Low Ku Band: ± 1.5 dB nominal; ± 2.25 dB max</td>
<td>Standard Band: ± 1.5 dB nominal; ± 2.0 dB max</td>
<td>Extended Band: ± 1.5 dB nominal; ± 2.25 dB max</td>
</tr>
<tr>
<td>Gain Variation at fixed temp</td>
<td>Low Ku Band: ± 0.75 dB over max over 40 MHz; ± 2.25 dB over full band</td>
<td>Standard Band: ± 0.5 dB over max over 40 MHz; ± 2.0 dB over full band</td>
<td>Extended Band: ± 0.75 dB over max over 40 MHz; ± 2.25 dB over full band</td>
</tr>
<tr>
<td>Linear Gain</td>
<td>70 dB min.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Adjustable Gain</td>
<td>20 dB nominal in 0.5 dB steps</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### C-Band

<table>
<thead>
<tr>
<th>Electrical Characteristics</th>
<th>150W</th>
<th>200W</th>
<th>250W</th>
</tr>
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<tr>
<td>RF Output at P1dB</td>
<td>52 dBm</td>
<td>53 dBm</td>
<td>54 dBm</td>
</tr>
<tr>
<td>RF Output at P Lin</td>
<td>49 dBm</td>
<td>50 dBm</td>
<td>51 dBm</td>
</tr>
<tr>
<td>Output Frequency Range</td>
<td>Lower C: 5.725 – 6.425 GHz</td>
<td>Standard C: 5.85 – 6.425 GHz</td>
<td>Extended C: 5.85 – 6.725 GHz</td>
</tr>
<tr>
<td>Input Frequency Range</td>
<td>Lower C: 975 – 1675 MHz</td>
<td>Standard C: 950 – 1525 MHz</td>
<td>Extended C: 950 – 1825 MHz</td>
</tr>
<tr>
<td>Local Oscillator Frequency</td>
<td>Lower C: 4.75 GHz</td>
<td>Standard C: 4.9 GHz</td>
<td>Extended C: 4.9 GHz</td>
</tr>
<tr>
<td>Gain Stability Over Temp.</td>
<td>± 1.5 dB nominal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain Variation at fixed temp</td>
<td>± 0.5 dB over max over 36 MHz; ± 2.0 dB over full band</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear Gain</td>
<td>70 dB min.</td>
<td></td>
<td></td>
</tr>
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<td>User Adjustable Gain</td>
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### X-Band

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<td>RF Output at P Lin</td>
<td>49 dBm</td>
<td>50 dBm</td>
<td>51 dBm</td>
</tr>
<tr>
<td>Output Frequency Range</td>
<td>7.9 – 8.4 GHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Frequency Range</td>
<td>950 – 1450 MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Oscillator Frequency</td>
<td>6.95 GHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain Stability Over Temp.</td>
<td>± 1.5 dB nominal</td>
<td></td>
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<tr>
<td>Gain Variation at fixed temp</td>
<td>± 0.5 dB over max over 40 MHz; ± 2.0 dB over full band</td>
<td></td>
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<td>Linear Gain</td>
<td>70 dB min.</td>
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## Technical Specifications

### Ku, C Band

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<th>Ku-Band</th>
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<th>X-Band</th>
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<tr>
<td>Spectral Re-growth 30dBc @PLinear</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Third order IMD (2 equal tones 5MHz apart)</td>
<td>-25dBc,</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10MHz Reference</td>
<td>0dBm ± 5.0 dB - External via IF / (Internal 10MHz reference optional)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ref Phase Noise Requirement @ 100 Hz</td>
<td>-140dBc/Hz max</td>
<td>-150dBc/Hrz max</td>
<td>-155dBc/Hrz max</td>
</tr>
<tr>
<td>Ref Phase Noise Requirement @ 1KHz</td>
<td>-140dBc/Hz max</td>
<td>-150dBc/Hrz max</td>
<td>-155dBc/Hrz max</td>
</tr>
<tr>
<td>Ref Phase Noise Requirement @ 10KHz</td>
<td>-140dBc/Hz max</td>
<td>-150dBc/Hrz max</td>
<td>-155dBc/Hrz max</td>
</tr>
<tr>
<td>Ref Phase Noise Requirement @ 100KHz</td>
<td>-140dBc/Hz max</td>
<td>-150dBc/Hrz max</td>
<td>-155dBc/Hrz max</td>
</tr>
<tr>
<td>Output Spurious Harmonics @ 100 Hz</td>
<td>-63dBc/Hz max</td>
<td>-73dBc/Hz max</td>
<td>-93dBc/Hz max</td>
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### Power consumption

<table>
<thead>
<tr>
<th>Band</th>
<th>Power consumption (at rated power) AC version</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Ku-Band</td>
<td>80W</td>
<td>100W</td>
</tr>
<tr>
<td>C-Band</td>
<td>150W</td>
<td>200W</td>
</tr>
<tr>
<td>X-Band</td>
<td>150W</td>
<td>200W</td>
</tr>
<tr>
<td>Power consumption (at rated power) AC version</td>
<td>1250W</td>
<td>1400W</td>
</tr>
<tr>
<td>Power requirement</td>
<td>220 VAC</td>
<td></td>
</tr>
</tbody>
</table>

### Interface

- **Output Interface**
  - Ku-Band: Waveguide, WR75G (Grooved)
  - C-Band: Waveguide, CPR 137G (Grooved)
  - X-Band: Waveguide, CPR 112G (Grooved)

- **Input Interface**
  - N-Type Female, 50 Ohms

- **Connectors**
  - AC Connector: MS3102R16-10P
  - M&C: MS3112E14-19P
  - Redundancy: MS3112E14-15P (Optional)

### Mechanical

- **Dimensions (L x W x H)**: 16.0 x 16.9 x 5.2 / 41.0 x 43.0 x 13.2
- **Weight**: 45 / 20.4

### Environmental

<table>
<thead>
<tr>
<th>Temperature Range (ambient)</th>
<th>Humidity</th>
<th>Altitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>-40°C to + 55°C (operating)</td>
<td>0 to 100% (condensing)</td>
<td>10,000 ft ASL</td>
</tr>
<tr>
<td>-40°C to + 75°C (storage)</td>
<td></td>
<td></td>
</tr>
</tbody>
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