TwinPulse400 Dual Band RF Amplifier for NMR

- The new Tomco TwinPulse400 is a single, low-cost drop-in replacement for four different Herley/AMT 3900 models (3900-1S4, 3900-1S7, 3900B-15B, 3900C-12)
- Published specifications equal to or better than the equivalent Herley/AMT amps, including wider bandwidth, lower noise figure, lower blanked noise, longer pulse widths
- 100% compatible interface and connections
- Mechanically equivalent
- Low band 5-300MHz, 300W PEP
  High band 200-650MHz, 100W PEP
- These amplifiers are ready for use in a range of NMR systems, including the Varian Unity, Mercury and Inova systems. Can also be used in Bruker spectrometers.

Key Specifications

<table>
<thead>
<tr>
<th></th>
<th>Channel A</th>
<th>Channel B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandwidth</td>
<td>200-650MHz</td>
<td>5-300MHz</td>
</tr>
<tr>
<td>PEP @ 0dBm in</td>
<td>100W</td>
<td>300W</td>
</tr>
<tr>
<td>Max. pulse width</td>
<td>300ms</td>
<td>300ms</td>
</tr>
<tr>
<td>Max. duty cycle</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Power in CW mode</td>
<td>15W</td>
<td>30W</td>
</tr>
</tbody>
</table>
## TwinPulse400 Dual Band RF Amplifier for NMR

### Model
- TwinPulse400

### Amplifier type
- Class AB, LDMOS

### Frequency range
- **Channel A**
  - 200-650MHz
- **Channel B**
  - 5-300MHz

### Pulse power
- **Channel A**
  - 100W minimum
  - 300W minimum
- **Channel B**
  - 15W minimum
  - 30W minimum
  - Across full frequency range

### CW power
- **Channel A**
  - 15W minimum
  - 30W minimum
  - Into a 50W load

### Linearity
- **Channel A**
  - ±1dB from 0.08-80W
  - ±1dB from 0.25-250W
- **Channel B**
  - ±1dB from 0.08-80W
  - ±1dB from 0.25-250W

### Amplitude droop
- **Channel A**
  - 5% maximum
  - 5% maximum
  - at 300ms, 80W
  - at 300ms, 200W
- **Channel B**
  - 5% maximum
  - 5% maximum

### Pulse width
- 300ms maximum, both channels
- Blanking pulse width, internally limited

### Amplitude rise time
- **Channel A**
  - 150ns maximum
  - 500ns maximum
- **Channel B**
  - 150ns maximum
  - 500ns maximum

### Input VSWR
- 2:1 maximum, both channels

### Output noise blanked
- 15dB over thermal, maximum, both channels

### Noise figure
- 15dB maximum, both channels

### Max.RF input level
- 0dBm, both channels

### Maximum duty-cycle
- 20%, both channels

### Phase change over linear output power range
- 20° maximum, both channels

### Phase shift over pulse width
- 6° maximum, both channels

### Blanking delay
- 2ms maximum, both channels

### Protection
- Input overdrive, over duty, over pulse width, over temperature
- All protection is self-resetting upon correction of the fault

### Connectors
- RF input: BNC(F) x 2
- RF output: N-type (F) x 2
- Noise blanking: BNC (F) x 2
- Interface: D25 (F)
- All connectors are on the rear panel in the standard configuration. Front panel connectors are available as option

### Front panel LED indicators
- DC supply status
- Over pulse width / duty cycle
- Over temperature
- CW mode active (x2)

### Cooling
- Forced air, front to rear

### Operating ambient temperature
- 10 - 40°C

### AC supply
- 110-240V AC, 50-60Hz universal input

### AC supply rating
- 1000VA minimum

### Size
- 5.25"H x 19"W x 25.6"D

---

For further information please email info@tomcorf.com

Tomco Technologies  38 Payneham Road, Stepney, SA 5069, Australia          www.tomcorf.com