
2+1 Redundancy Switch for the P7000 & IBUH/ IBDH series of frequency converters, and the ILAH series of Line Amplifiers

T2000LD, R2000LD, R2000LQ for use with P7001D/ 1Q/ 2D series IF/ L-Band synthesised multi-channel converters  
T2000HH(Ka), R2000HH(Ka) for use with IBUH(Ka), IBDH(Ka) series L/ SHF (Ka-Band) block converters  
A2000L for use with ILAH series L-Band line amplifiers  
A2000H for use with ILAH series SHF line amplifiers

The T2000, R2000, TR2000 & A2000L/H 2+1 redundancy switch units are designed to take advantage of the redundancy control interface which is built in as a standard feature of the P7000 series of synthesized converters, the IBUH, IBDH series of block frequency converters and the ILAH series of line amplifiers.

The system is designed to provide redundancy for a dual-feed system, maintaining maximum availability whilst allowing routine maintenance and repair work to be carried out on the standby unit, without the normally associated down-time.

The system maintains two ‘host’ units on-line whilst the other is held in hot standby and allows the user to select the on-line unit. The redundancy unit can be controlled from the front panel of the host units (local mode) or via the host units RS232/ 485 serial communications (or optional Ethernet) port (remote mode). In remote mode, the on-line units can be selected and monitored whilst keeping switch-over automatic in case of failure. In automatic mode, the system monitors the host units alarm status and if a fault condition develops within one of the on-line units, automatically switches traffic to the standby unit.

The unit is standard 19-inch rack mountable, however having no front panel controls can be mounted in the rear of the rack behind the converters and connected with the cables provided. The units are designed to pass the DC and 10MHz external reference frequency required to lock an LNB or BUC.

**Peak Features**

- High quality, matched IF, L-Band & RF (as appropriate) cable set included as standard
- Does not require rack ‘front panel’ space
- Fully compatible with Peak P7000, IBUH, IBDH & ILAH series of units

**IF, L-band & RF Interfaces**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>50Ω, BNC (f)</th>
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<tbody>
<tr>
<td>IF</td>
<td>50 to 200MHz</td>
</tr>
<tr>
<td>L-band/ RF</td>
<td>DC to 14.5GHz</td>
</tr>
<tr>
<td>RF (OBS)</td>
<td>to 18.4GHz</td>
</tr>
<tr>
<td>RF (Ka)</td>
<td>to 31.0GHz</td>
</tr>
</tbody>
</table>

**Connections**

- **Option 1:** 75Ω, BNC (f)
- **L-band/ RF:** 50Ω, N-type (f)

**Connections (for use with P7000 series converters)**

- **IF:** 50Ω, BNC (f)
- **L-band/ RF:** 50Ω, N-type (f)

**Connections (for use with IBUH, IBDH series converters)**

- **L-Band:** 50Ω, SMA (f)
- **RF (Ka):** 50Ω, K-Type (f) or 2.92mm (f)

**Connections (for use with ILAH series line amplifiers)**

- **L-Band/ RF:** 50Ω, SMA (f)

**Switch Element Parameters**

**Type:** Co-axial, latching

**General**

**Mechanical**

- **Width:** 19", standard rack mount
- **Height:** 1U (1.75")
- **Depth:** 150mm (6"), plus connectors
- **Weight (nom.):** 2kgs (4.4lbs)
- **Construction:** Aluminium chassis

**Environmental**

- **Operating temp:** 0 to +50°C
- **EMC:** EN 55022-part B & EN 50082-1
- **Safety:** EN 60950

**Control System**

- **Converter interface:** 9-way, D-type

**Typical System Performance**

The following gives the typical performance that can be expected from a system comprising Peak converters & using the high quality matched IF & L-band/RF cable set;

<table>
<thead>
<tr>
<th>Gain flatness</th>
<th>±1dB full band, band specific</th>
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</thead>
<tbody>
<tr>
<td>Insertion loss (excludes converter gain)</td>
<td>IF: 6.5dB (7.5dB for 75Ω option)</td>
</tr>
<tr>
<td></td>
<td>L-Band: 0.75dB</td>
</tr>
<tr>
<td></td>
<td>S-Band: 0.75dB</td>
</tr>
<tr>
<td></td>
<td>C-Band: 1.75dB</td>
</tr>
<tr>
<td></td>
<td>X-Band: 2.25dB</td>
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<tr>
<td></td>
<td>Ku-Band: 2.75dB</td>
</tr>
<tr>
<td></td>
<td>DBS-Band: 3.25dB</td>
</tr>
<tr>
<td></td>
<td>Ka-Band: 3.75dB</td>
</tr>
<tr>
<td></td>
<td>10MHz: 0.75dB</td>
</tr>
</tbody>
</table>

- **Switching speed:** <800ms (from fault to switch completion)

**Options**

1) 75Ω IF interface.

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**Wiring Configuration** (example for the T2000L connected to P7002, IF to L-band UpConverters):

![Wiring Diagram](image)

**Rear Panel** (T2000L example):

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