



**ptf**

## **1203D Matched Phase Broadband RF Distribution**

- **Input Frequencies 300kHz to 60MHz**
- **12 Broadband Outputs**
- **Low Additive Phase Noise**
- **Isolation (>80dB typical)**
- **Convenient 1U, 19" rack mount package**

The ptf 1203D Broadband RF Distribution amplifier provides high performance distribution of frequency references for laboratory or system use, with very low channel to channel phase skew, and very low phase change temperature coefficient.

The ptf 1203D uses a carefully designed transmission line layout to distribute the input signal to 12 separate outputs, to ensure minimum phase difference between individual output signals.

In most applications the phase noise capability of the *ptf* 1203D will outperform the input signal performance to such a degree that no additive phase noise will be noticeable on the outputs.

Isolation output to output is >80 dB and no harmonic exceeds -40 dBc. The unit provides a nominal gain of 1, and all outputs are provided on TNC connectors. Input to output voltage gain of unity (up to x 10 optionally available) provides up to 13dBm into a 50 ohm load.

BNC available, but not recommended for low electrical length temperature coefficient.

### **Options;**

|   |                |
|---|----------------|
| Option -1                                       |                |
| Standard unit                                   | ± 8.0 ps/deg.C |
| Option -2                                       |                |
| Very low phase delay<br>temperature coefficient | ± 1.3 ps/deg.C |



RevE. Specifications subject to change without notice

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## Specifications

### Electrical

|   |                                      |
|---|--------------------------------------|
| RF Output (twelve)<br>Freq. Range (-3dB BW) | 300kHz to 60MHz<br>Broadband outputs |
| Level                                       | 1V rms (nominal)                     |
| No Harmonic Exceeds                         | -40 dBc                              |
| Non-Harmonic Signals                        | < -80 dB                             |
| Load Impedance                              | 50 ohm                               |
| Isolation                                   | >80 dB*                              |
| Connectors                                  | TNC                                  |

\*Isolation of alternating output channels >100dB, up to 30MHz

|  |               |
|--|---------------|
| Additive SSB Phase Noise<br>(1 Hz Bandwidth) Offset from carrier |               |
| 1 Hz   | < -120 dBc/Hz |
| 10 Hz  | < -135 dBc/Hz |
| 100 Hz   | < -145 dBc/Hz |
| 1,000 Hz   | < -155 dBc/Hz |
| 10,000 Hz  | < -160 dBc/Hz |

Channel to Channel Skew <250ps

Input to output delay <5ns  
nom. @ 10MHz

|                             |                         |
|-----------------------------|-------------------------|
| Input to output temp. coeff |                         |
| Option -1  tempco           | < 8.0ps / deg C         |
| Option -2  tempco           | < 1.3ps / deg C         |
|                             | (Over +17 to +31 deg C) |

|   |   |
|---|---|
| Input VSWR<br>(1MHz to 60MHz)<br>(at 10MHz) | < 1.5:1<br>( 1.2:1 typical)<br>< 1.04:1 |
|---|---|

|  |   |
|--|---|
| Output VSWR<br>(1MHz to 60MHz)<br>(at 10MHz) | < 1.5:1<br>( 1.2:1 typical)<br>< 1.04:1 |
|--|---|

|                             |  |
|-----------------------------|--|
| RF Input<br>Frequency Range | 300kHz to 60MHz  |
| Max Input Level             | 1 V rms  |
| Alarm Output                | Summary alarm.<br>(Alarms if at least one output is < -10dBm, nominal) |

Non-alarm condition: Relay energized (fail safe)

Alarm Connector: 9 pin D-male (SPDT contacts)

Controls & Indicators  
Power Green LED, (power connected)

Alarm Indicator Red LED, (output failure, input not present)

### Environmental & Physical

Temperature: 0° to 55° C operating  
-20° to +85° C storage

Relative Humidity: 0 to 95%, non-condensing

|                     |                    |
|---------------------|--------------------|
| Power Requirements  |                    |
| AC Input (±15%)     | 90 - 264 VAC, <10W |
| DC Input (optional) |                    |

Dim. (HxWxD): 1U (1.752") x 19" x 12"

Weight 4 lbs.

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