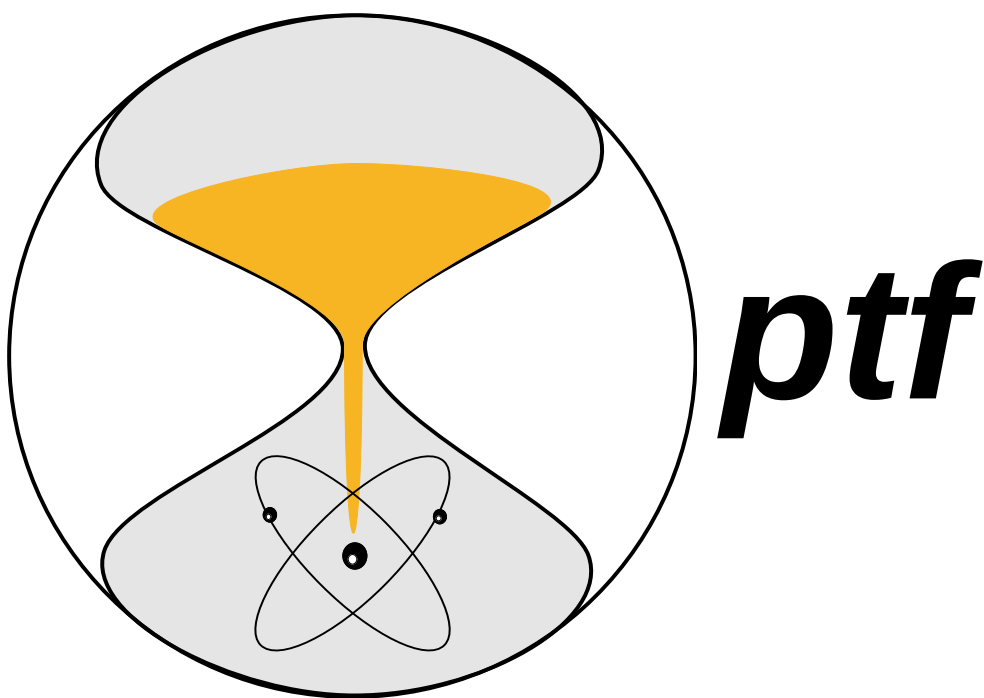




Precise Time and Frequency, Inc

***ptf* 1206A/1207A Configurable
Distribution**

Operation and Maintenance Manual



Document # 10906
Revision C

Certificate of Conformance

This certificate confirms that the following equipment:

Unit type: **ptf** 1206A/1207A Configuration Distribution Amplifier

Serial Number: 911-01821-01

Has successfully passed a FINAL ACCEPTANCE TEST and conforms in all respects of form, fit, and function to current specifications, including regulatory requirements and certifications.

This part is RoHS 2 (DIRECTIVE 2011/65/EU) / RoHS 3 (DIRECTIVE EU 2015/863) compliant with no exemptions.

This part is REACH compliant (EC/NO 1907/2006) per ECHA SVHC list 209, June 25,2020

Inspected and verified by:

Date:

Julie Sawyer

November 25, 2024

For Precise Time and Frequency, LLC

Declaration of Conformity

This certificate confirms that the following equipment:

Unit type: **ptf 1206A/1207A** Configurable Distribution Amplifier
is in conformity with the relevant provisions of the following standard(s)
or other normative document(s):

EU EMC Directive 89/336/EEC:

EN55022	Limits and methods of measurements of radio disturbance characteristics of information technology equipment
EN61000-3-2 (2001)	Limits for harmonic current emissions (equipment input current up to and including 16A per phase)
EN61000-3-3 (1995)	Limitation of voltage fluctuations/flicker in low voltage supply systems for equipment with rated current # 16A
EN55024 (1998)	Information technology equipment – immunity characteristics - Limits and methods of measurement
EN61000-4-2 (1995)	Electrostatic discharge immunity
EN61000-4-3 (1997)	Radiated, radio frequency, electromagnetic field Immunity
EN61000-4-4 (1995)	Electrical fast transient/burst immunity
EN61000-4-5 (1995)	Surge Immunity
EN61000-4-6 (1996)	Immunity to conducted disturbances, induced by radio frequency fields
EN61000-4-8 (1994)	Power frequency magnetic field immunity
EN61000-4-11 (1994)	Voltage Dips, short interruptions and voltage variations immunity

EU Low Voltage Directive 72/23/EEC:

EN 60950-1 (2000)	Safety of Information Technology Equipment, including electrical business equipment
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Introduction

Congratulations on your purchase of the **ptf** 1206A/1207A Configurable Distribution unit !

This product meets the highest standards of quality and reliability, and Precise Time and Frequency, Inc wants to insure that you enjoy the maximum benefits and functionality that this unit can provide.

The technology within this unit uses the decades of experience in time and frequency applications of our engineering team, to provide a unit that is highly advanced, and gives a very powerful feature set in an inexpensive and compact package,

Operation of the unit is straightforward and the contents of this manual are designed to provide a basic understanding of the product, set-up and functionality, and procedures for maintenance and repair.

If you have any questions or concerns, please do not hesitate to contact our technical service department who will be pleased to provide assistance.

Please help us to live up to our stated objectives, our company motto is:

KNOW THE NEEDS AND EXPECTATIONS OF YOUR CUSTOMER...THEN DELIVER!

Once again, thank you for purchasing our product, and we look forward to you utilizing Precise Time and Frequency, Inc. for your future time and frequency instrumentation needs.



President
Precise Time and Frequency, Inc.

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1. **ptf 1206A/1207A Configurable Distribution - Technical Overview**

The **ptf** 1206A/1207A uses the four channel “QUAD Block” distribution card. The QUAD Block design combines the latest technology in low noise components, with decades of experience in low noise layout design, to buffer high quality input signals while preserving the integrity and purity of input signal by minimizing any phase noise addition.

The unit uses two stages of input signal buffering to distribute the input signal to 4 separate outputs, and insure maximum isolation between individual output signals. The first output can also be configured to be an input and provide 3 distributed channels of the selected input. In this way the 1206A/1207A can be configured with mix and match distribution for RF signals, Digital/Pulse signals, or IRIG timing signals. This option must be configured at the factory.

QUAD Blocks can be daisy chained for up to 12 outputs of the same signal in the 1 rack unit 1206A, or up to 36 outputs in the 2 rack unit 1207A.

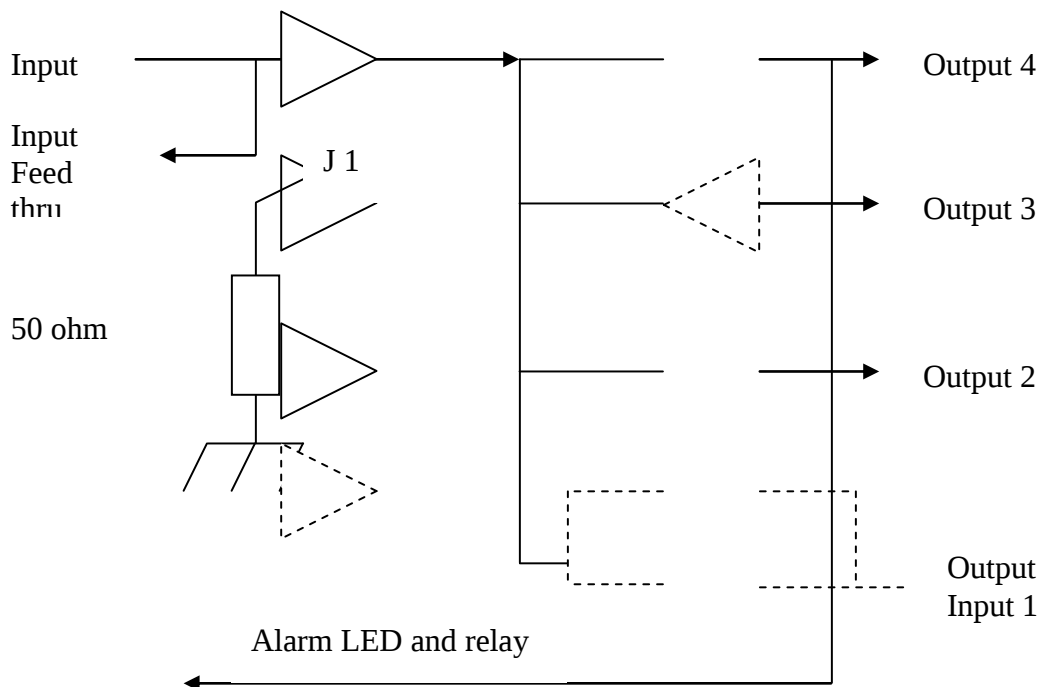


Figure 1. **ptf** 1206A/1207A Quad Block Schematic

2. *ptf 1206A/1207A* Configurable Distribution - Specifications

2.1.1. Electrical

RF DISTRIBUTION

RF Output

Frequency Range 900kHz to 20MHz

Level 1V rms/ 13dBm (nominal) – unity gain distribution

Harmonic Distortion <-40 dB

Non-Harmonic Signals <-80 dB

Mains Hum <-120 db

Load Impedance 50Ω

Isolation >90dB*

Connectors BNC

*Isolation for alternating channels >130dB

Additive SSB Phase Noise

(1 Hz bw) Offset from carrier

1 Hz	-130 dB
10 Hz	-145 dB
100 Hz	-150 dB
1000 Hz	-160 dB
10000 Hz	-165 dB

RF Input

Frequency Range 900kHz to 20MHz

Level 1 V rms/13dBm (nominal) – will accept 0 to 15 dBm

DIGITAL DISTRIBUTION

Digital Output

Pulse Rate Range 1 pulse per hour to 1,000,000 pulses per second

Level 5V logic (tolerant up to 10V)

Impedance 50Ω

Maximum Alarm Setting - 1 minute between pulses

Pulse Input

Pulse Rate Range 1 pulse per hour to 1,000,000 pulses per second

Level 5V logic (Tolerant up to 10V)

Impedance 50Ω

TIME CODE DISTRIBUTION

Time Code Output

Code Format	IRIG-B
Modulation Frequency	1kHz
Modulation Ratio	3:1
Amplitude	≤3V P-P into 50 Ω 50Ω source impedance
Connectors	BNC

Time Code Input

Code Format	IRIG-B
Modulation Frequency	1kHz
Modulation Ratio	3:1
Amplitude	≤3V P-P
Impedance	50Ω /Hi Z switch (50KΩ)

Alarm Output

Summary alarm indicates failure of any output signal

Non-alarm condition: Relay energized (fail safe)

Connector: 9 pin D-male

Alarm Indicator

Red LED,

Auto Switch-Over Option

Input - RF, Digital and Time Code input as described in above distribution options. One A/B switch is used per signal format. The signal format must be specified by customer and configured at the factory.

Impedance 50Ω

A/B Input Isolation > 50dB

Switching automatic < 3ms

Alarm A/B input Led's, green active, red fault
Summary alarm when both inputs fail.

2.1.2. Power Input

Standard AC power input:

Input voltage 85 to 264 V AC

Input Frequency range 45 to 65 Hz

DC power input:

Input voltage 120 to 270 V DC

Option DC Supply: 18 to 72 VDC

2.1.3. Dimensions

1U Chassis (HxWxD) 1.75 x 17 x 12 inches

2U Chassis (HxWxD) 3.5 x 17 x 12 inches

2.1.4. **Weight**

Chassis

< 10 pounds

2.1.5. **Environmental**

Operating Temp:

-0° C to +55° C

Storage Temp:

-40° C to +70° C

Humidity

to 95% RH non-condensing

QUAD Block Distribution Cards



1207A 2U Version Configurable Distribution



1207A rear view (w/multiple options)

3. Unpacking/Inspection/Installation

3.1. Unpacking/Inspection

The **ptf** 1206A//1207A CONFIGURABLE Distribution together with accessories is shipped in a custom designed package. Upon receipt the equipment should first be visually inspected for any signs of visible damage.

If visible damage is apparent immediate notification should be given to both Precise Time and Frequency, Inc., and the carrier responsible for shipment. Do not discard the shipping container, which should be made available for inspection by the carrier.

For purposes of unit reference, the unit serial number located on the rear panel of the unit should be quoted in all communications.

3.2. Chassis Installation

The **ptf** 1206A/1207A chassis is supplied with rack ears ready for simple installation into a standard 19-inch rack frame/cabinet.

For adequate support when mounted into the rack, a rear supporting bar or tray should be used as the rack ears are designed to secure the unit in the rack, NOT to support the full weight of the unit.

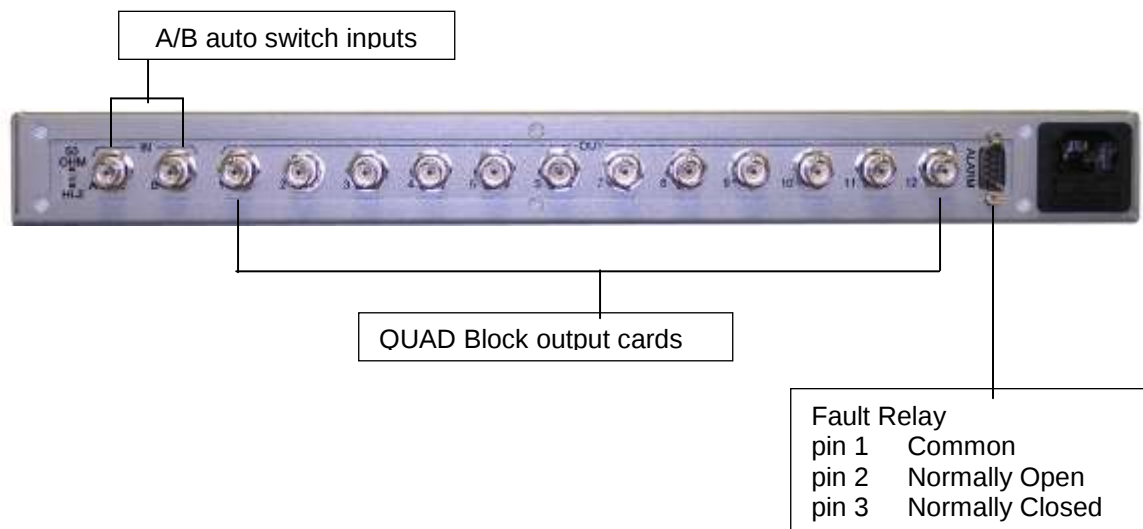
Attention should be given to the internal rack environment to insure the unit operates within it's specified operating temperature range of 0 to 50 deg. C also noting that the unit relies upon convection for cooling, so there should be sufficient air flow to accommodate this.

3.3. Power Connection

Power is supplied by connecting the supplied ac power cable to and AC source, at 120 or 230 V AC, +/-15%. The AC input is a universal input – no range switching is required.

3.4. Input/Output Connections

BNC connectors are provided for the standard **ptf** 1206A/1207A inputs and outputs.



4. **ptf** 1206A//1207A – Operation

Operation of the **ptf** 1206A//1207A is extremely straightforward. Once all of the required input and out CONFIGURABLE connections have been made power can be applied for the unit.

Note that an input module can be provided in place of the A/B auto switch so that the first QUAD Block can fully utilize four outputs and two additional QUAD Blocks can be added to provide alternative signal formats.

5. Maintenance

5.1. Overview

The **ptf** 1206A//1207A CONFIGURABLE Distribution uses state-of-the art solid state and semi-conductor, primarily surface mount, components.

All of the components are selected for their inherent high reliability, and as advanced techniques with highly sophisticated equipment, are used for assembly and test of the unit.

Due to the above, no periodic maintenance of the unit is required and the units can be expected to deliver many years of trouble free operation.

Any maintenance or service of the unit should be performed at a Precise Time and Frequency, Inc. authorized facility, to insure the appropriate equipment and expertise is available.

6. Contact Information – Technical Assistance

The Precise Time and Frequency, Inc service department normal hours of operation are from Monday to Friday, between the hours of 8.00 a.m. and 5.00 p.m. US Eastern Standard Time.

24 hour, 7-day technical assistance is available under special contract.

Before returning any equipment for service or repair please contact our service department for an RMA number.

Tel: (+1) 781.245.9090

Fax: (+1) 781.245.9099

E-mail: service@ptfinc.com

Shipping address is:

Precise Time and Frequency, Inc.
50 L Audubon Road
Wakefield, MA 01880
USA

Attn: Service Manager

Billing address is:

Precise Time and Frequency, Inc.
50 L Audubon Road
Wakefield, MA 01880
USA

Attn: Accounts