Precise Time and Frequency, Inc

ptf 1203C Distribution Amplifier

Operation and Maintenance Manual

Document #	10312
Revision	E

Certificate of Conformance

This certificate confirms that the following equipment:

Unit type: ***ptf*** 1203C RF Distribution Amplifier

Serial Number: _____

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.

Inspected and verified by: Date:

_____ _____

For Precise Time and Frequency, Inc

Declaration of Conformity

This certificate confirms that the following equipment:
Unit type: ***ptf* 1203C** RF 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

Introduction

Congratulations on your purchase of the ***ptf*** 1203 Distribution Amplifier !

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* 1203C Distribution Amplifier - Technical Overview**

The ***ptf*** 1203C uses at its heart an RF design combining 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 12 separate outputs, and insure maximum isolation between individual output signals.

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

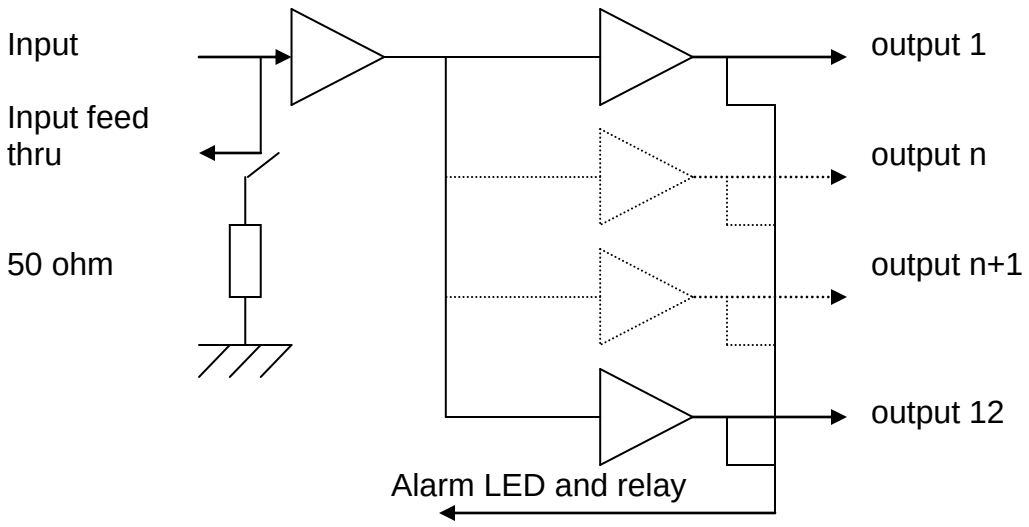


Figure 1. ***ptf*** 1203 Schematic

2. *ptf* 1203C Distribution Amplifier - Specifications

2.1.1. Electrical

RF Output (twelve)

Frequency Range 900kHz to 50MHz

Level 1V rms (nominal)

Harmonic Distortion <-40 dB

Non-Harmonic Signals <-80 dB

Load Impedance 50.

Isolation >90 dB*

Connectors BNC

*Isolation alternating channels one to 12 >130 dB

Additive SSB Phase Noise

(1 Hz bw) Offset from carrier

1 Hz	-132 dB
10 Hz	-150 dB
100 Hz	-160 dB
1,000 Hz	-165 dB
10,000 Hz	-165 dB

RF Input

Frequency Range 900kHz to 20MHz

Level 1 V rms (nominal)

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,

2.1.2. Power Input

Standard AC power input:

Input voltage	85 to 264 V AC
Input Frequency range	45 to 65 Hz

2.1.3. Dimensions

Chassis	Height 1.75 Inches. Width 17 Inches Depth 12 Inches Maximum.

2.1.4. Weight

Chassis	< 10 pounds

2.1.5. Environmental

Operating Temp:	-0 C to +55 C
Humidity	to 95% RH non-condensing

3. Unpacking/Inspection/Installation

3.1. Unpacking/Inspection

The ***ptf*** 1203C Distribution amplifier 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*** 1203 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.

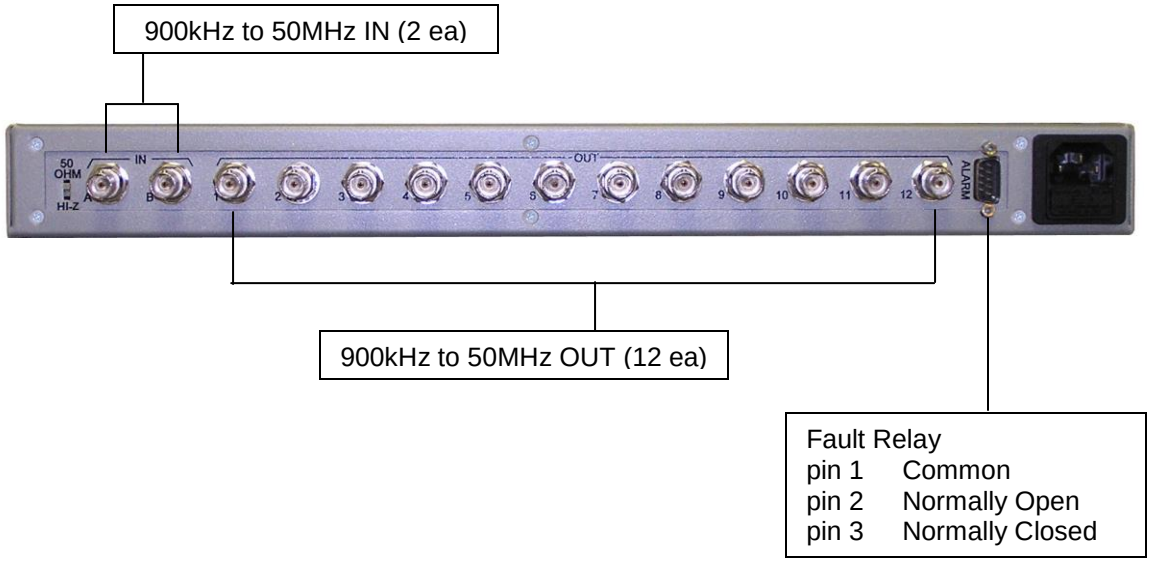
Attention should be given to the internal rack environment to insure the unit operates within it's specified operating temperature range of 0 to 50 deg. C also noting that the unit relies upon convection for cooling, so there should be sufficient air flow to accommodate this.

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*** 1203 outputs.



4. ***ptf*** 1203C – Operation

Operation of the ***ptf*** 1203C is extremely straightforward. Once all of the required input and out RF connections have been made power can be applied for the unit.

Note that an additional “feed thru” input connector is provided so that if it is desired to drive more than one ptf 1203 distribution amplifier from the same input signal, the input can be coupled to the next unit.

In this case, the units that the signal is “fed thru” should not be terminated at the input (see input termination switch). Only the last unit in the chain should be terminated to optimize impedance matching.

5. Maintenance

5.1. Overview

The ***ptf*** 1203C distribution amplifier 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 4848
   Fax: (+1) 781 245 3549
   E-mail: service@ ptfinc.com

   Shipping address is:

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

   Attn: Service Manager

   Billing address is:

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

   Attn: Accounts