



ZClock

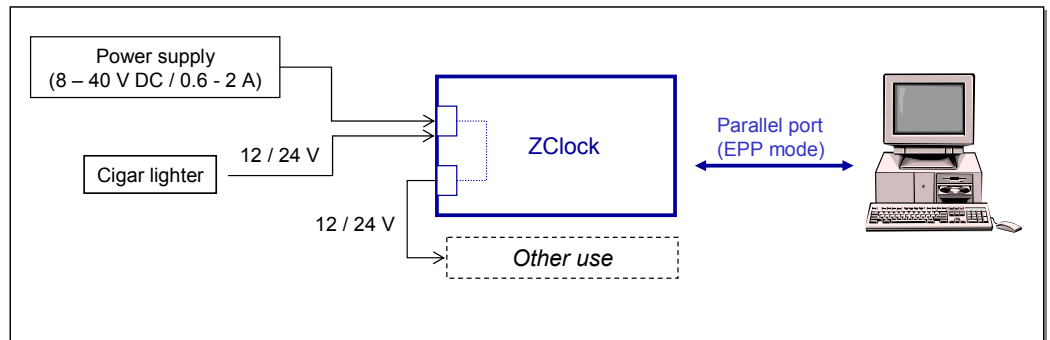
***Clock module with a very high degree of accuracy
for use on PC parallel port (EPP mode)***

***Main applications: Instrumentation, Metrology
and all very accurate measurements***

Why such a product?

The Real Time Clock (RTC) built into most machines is far from reliable and most RTCs drift considerably over time.

Based on a high stability and ultra stable OCXO (Oven-Controlled Crystal Oscillator) with a fast warm up, the ZClock product offers a very precise clock (0,27 ppm) to PC applications in a small and compact packaging.



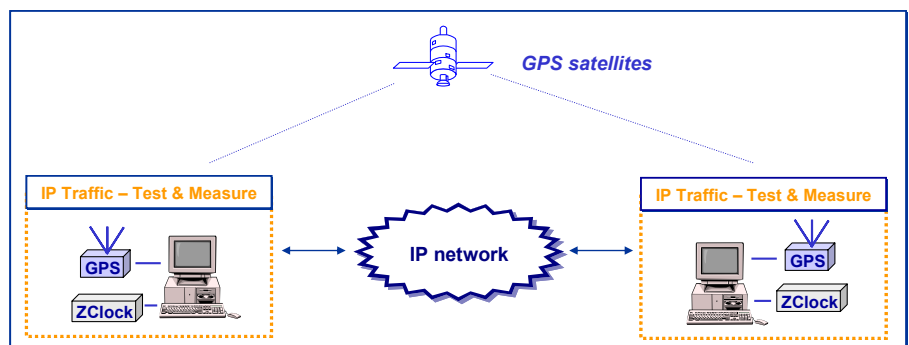
How does it work?

Once ZClock is powered on, the Red/Green bicolor led on the front face is red lighted (OCXO Warm Up is in progress < 5 mn). The bicolor led is green lighted as soon as ZClock is operational (OCXO steady state).

The PC application can then use the ZClock time reference via query / answer on the parallel port (Enhanced Parallel Port mode). An interrupt is generated on the parallel port from 200 microseconds up to 6,5535 seconds with a step of 100 microseconds. Thus by using ZClock, the application can rely on a precise clock with a drift lower than 1 millisecond for 1 hour on 1 year.

Example of use

ZTI has developed a software testing tool named 'IP Traffic—Test & Measure' to generate traffic and measure Quality of Service parameters over IP networks. In order to have very accurate measurements (precision = 1 millisecond), a GPS kit (to have an absolute time reference) and the ZClock product are used.



Main advantages

- ▶ To offer to PC applications a very precise clock
- ▶ To be free from the problems of precision and drift of the PC clock
- ▶ Can be used with a desktop or laptop

ZTI Computing & Telecoms
1 boulevard d'Armor
BP 20254
22302 Lannion Cedex
France
Phone: +33 2 9648 4343
Fax: +33 2 9648 1485
contact@zti-telecom.com
http://www.zti-telecom.com

OCXO Specifications

Frequency Stability:	OPERATING [0, + 50] °C	$< \pm 5 \times 10^{-8}$
Medium and long term stability	1 DAY	$< \pm 1 \times 10^{-9}$
(@ 25 °C after 30 days operation)	1 MONTH	$< \pm 3 \times 10^{-8}$
	1 YEAR	$< \pm 2 \times 10^{-7}$
Short Term Stability (Allan variance)	1 s, 10 s	$< \pm 1 \times 10^{-11}$
Warm Up Time @ 25°C	$\pm 1 \times 10^{-8}$	< 5 minutes

Environment

Temperature	STORAGE [- 30, + 70] °C
	OPERATING [0, + 50] °C
Supply voltage	8 - 40 V DC / 06 - 2 A

Package

Size: 157 x 94 x 36 mm
Weight: 260 g

Consumption according to the entry voltage

Voltage (V)	8	10	12	15	20	25	30	35	40
Warm Up current (mA)	550	400	330	250	200	160	130	110	100
Steady state current (mA)	250	180	150	120	90	70	60	50	40

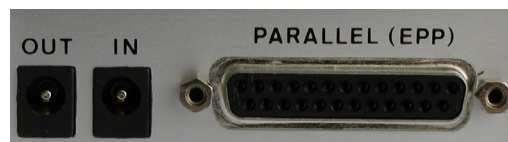
Interfaces

Front face: 1 Red / Green bicolor Led (Red / Green)

- **Red:** Oscillator Warm Up (up to 5 minutes depending of the ambient temperature). In this state, ZClock is not operational.
- **Green:** ZClock is operational.

Back face: 3 connectors

- **Power input** 8 - 40 V DC / 0.6 – 2 A
- **Power output** 8 - 40 V DC / 0 – 1.4 A (for other use)
- **Parallel interface** 25 pts Sub-D (EPP mode only)



Conformance with standards and directives

ZClock is in conformance with the following safety and electromagnetic compatibility Standards and Directives.

Safety

73/23 EEC, **Low Voltage Directive (Europe)**

IEC 60 950 (3rd edition, 1999) (**Worldwide**)

CB scheme, deviations for the following countries: Austria, Canada, Czechoslovakia, Denmark, Deutschland, Finland, France, Hungary, Norway, Poland, Russia, Singapore, Sweden, Switzerland, The Netherlands, United Kingdom, United States of America, South Africa.

Note: This list is not exhaustive. Others countries will be automatically added, as soon they will notify the 3rd edition of IEC 60 950 standard.

Electro-Magnetic Compatibility

89/336/ EEC Directive (Europe)

EN 50081-1 (1992)

EN 50082-1 (1997)

EN 61000-3-2 (1995) + A1 (1998) + A2 (1998) + A14 (2000)