

Chronos TimePort Documentation

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1 Introduction

This document outlines information regarding the Chronos TimePort. It is meant to be used as a short manual for it with steps in performing some functions with the device. This is by no means an extensive or complete manual. It was used to compile all information about the TimePort gathered during the final year project.

The Chronos CTL4540 Timeport is a low powered portable device that is able to maintain its time to a high accuracy when disconnected from a synchronisation source. It is able to maintain accuracy within a couple hundred nanoseconds without needing to be connected to **GPS! (GPS!)**. It also has an internal LiPo battery. This enables the device to be used to transport and measure time.

With the above features in mind, it is thus suited for a number of markets, including the power industry and telecommunication network operators. It can also be used to correct for any time errors caused by any cabling or equipment.

Typical methods of doing this would involve using a Caesium atomic clock [REF] or setting up a **GPS!** antenna and connecting this to some other equipment. The TimePort is best suited over these two operaitons because it is much lower power and much more transportable than an atomic clock. It also removes the requirement of **GPS!** equipment.

2 Diagram of a TimePort

A labelled diagram below has been given, labelling the important parts of the TimePort

Figure 1: A labelled TimePort Diagram

The labelled parts are:

Part 1

Part 2

Part 3

A block diagram below has been created of the basic operation of the TimePort, with some brief explanations of each block below that.

An Internal block diagram of the TimePort

Part 1

Part 2

Part 3

3 How to set the TimePort up as a Grandmaster

4 Problems and Solutions

5 Conclusion