

ChronoLogic Maestro – Master Timing Hub (MTH)

- USB-inSync™ Master Hub
- High Speed USB 2.0
- 6 USB 2.0 ports (480Mb/s)
- Enables ± 1 ns accuracy across entire setup
- Phase offset and propagation delay compensation
- 6 Transaction Translators (enabling maximum bandwidth across all ports)



Overview

ChronoLogic's "Maestro" series of Master Timing Hubs (MTH) are part of the "USB-inSync™" product family which allows you to use multiple modules, combined with software to create a powerful virtual/synthetic instrument offering precision timing and synchronisation capability in a distributed platform.

The Maestro MTH enables attached USB-inSync™ devices to generate nanosecond phase and frequency accurate clocks across a distributed USB network.



With ChronoLogic's USB-RealTime™ technology, the MTH can also lock its precision oscillator to an external reference clock, such as GPS, enabling multiple PC's to share a common clock and allow synchronisation of multiple USB networks anywhere in the world.

ChronoLogic's Maestro MTH can operate at full bandwidth in a mixed USB1.1 and USB2.0 environments. This is a unique feature, which is enabled by the fact that every downstream USB port on the Maestro has its own transaction translator. This means that high speed USB 2.0 devices will not have their bandwidth compromised by attaching low speed USB 1.1 devices.

The Master Hub also eliminates clock skew associated with different length USB cables. The MTH determines the propagation time for each USB cable and hub in the system and provides phase offset correction to each USB-inSync™ device to ensure all devices operate in complete synchronicity.

Choice of 2 Models

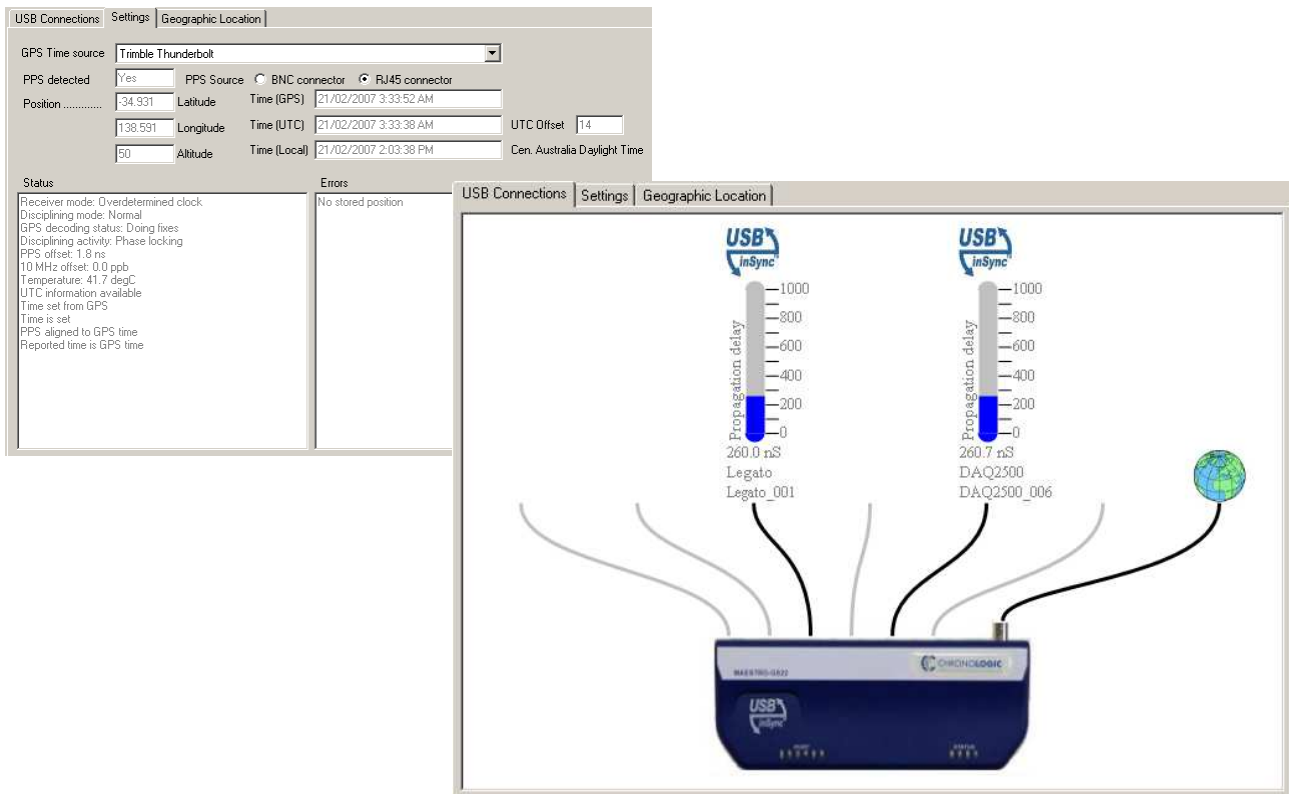
Maestro MTH Model	Temp Compensated Internal Oscillator	External Time Reference	GPS Enabled
Maestro MTH iS22	X		
Maestro MTH GS22	X	X	X

Features and Benefits

- 6 Downstream USB 2.0 ports (480Mb/s) – every port with it's own transaction translator
- 2ppm frequency accuracy through temperature compensated precision reference oscillator
- External reference clock input, including option of USB RealTime GPS, for global multi PC synchronisation
- Phase offset and propagation delay compensation
- Full bandwidth in mixed USB1/USB2 environments
- Plug and Play functionality of USB makes the Maestro MTH easy to set up and reconfigure
- Supplied with FREE ChronoLogic Control Center software suite with simple to use GUI, COM server and LabVIEW™ drivers

Software

To provide flexibility and easy control, the Maestro MTH is supplied with ChronoLogic's Control Center software platform, complete with a simple to use Graphical User Interface (GUI). For advanced users, access to extended low-level device functionality is available through our COM Server. This enables interfacing through Windows based software application including MS Office, Visual Studio and National Instruments LabVIEW™. Additional LabVIEW™ device drivers are available so that USB-inSync™ devices can be quickly implemented within an existing test environment.



Detailed Product Specifications

Spec Description	Spec
Operating System (for supplied software)	Windows XP/Vista
Bus interface	USB 2.0 (480Mb/s)
Dimensions	198mm(w) x 80mm(d) x 34mm(h)
Weight	200g
USB Ports	6 Downstream (each with its own transaction translator) 1 Upstream
Inputs	External reference clock (BNC connector) External reference data (RJ45 connector)
Input Voltage	5VDC, 4amps
Maximum Power	20W
Typical USB cable length measurement resolution (clock phase resolution)	<5cm = approx 200psec

Certifications & Standards

The Maestro Master Timing Hub meets the requirements for the following certifications:

Safety

- UL 60950-1 / CSA60950-1
- IEC 60950-1 2002
- EN 60950-1 2002

EMC/EMR

- FCC – Title 47 of CFR, Part 15, subpart B for Class A Digital Device
- EN 55024: 1998 + A1: 2001 + A2: 2003
- EN 55022: 1998 + A1: 2001 + A2: 2003
 - Class A Device
- ICES-003, Issue 4 for Class A Device

In addition, the Maestro MTH meets the Australian C-tick verifications

- C-tick – ACA C-tick number: N14788