

## BRANDYWINE TIMING PRODUCTS

Unitronix offers superior products in the time and frequency marketplace as well as providing the latest technology in video encoding/decoding. Our mission is to provide the latest equipment coupled with excellent before and after sales service of precision time and frequency products. Products from Brandywine Communications range from components such as Oven Controlled Oscillators to complete systems like the top-of-the-line High Performance Timing System (HPTS). Please visit our website – [www.unitronix.com.au](http://www.unitronix.com.au) for further product information and links to datasheets.

### Time and Frequency References

#### NFS-220

The NFS-220 is a low cost precision time and frequency standard that uses GPS for use in WI-FI, Wi-Max, satellite communications, telecommunications, and military communications. This frequency standard is the newest of Brandywine's GPS Synchronizing clocks and utilizes a high performance 16 channel receiver with automatic position-averaging that enables the best use of GPS when operating in a fixed location. The NFS220 includes 4 low phase noise 10MHz outputs, 4 1PPS outputs with individual 600PS propagation delay compensation, IRIG, Have Quick, and NTP outputs.



#### GPS8

The GPS8 is a staple of Brandywine being a reliable, low cost time and frequency instrument offering a wide range of standard features in a compact, 1U rack-mount chassis. Precision time and frequency output, accurate to 40 nano-seconds to UTC/USNO and  $1 \times 10^{-12}$  respectively, are provided in a variety of signal formats. Applications for the GPS8 include central time and frequency systems, timing for power utility systems, and frequency standards for a wide variety of communication installations.



#### PTS-SAASM

The PTS-SAASM is a complete master clock, or primary reference source, containing a GPS rubidium oscillator. Both single and dual redundant models are available.

#### PTS

Disciplined Rubidium Time and Frequency Standard. Same design as the PTS-SAASM, this product offers complete remote control and monitoring via a web browser interface.

### Network Synchronisation – Precision Time Control

#### PTP Grand Master Clock

Precision Time Protocol (PTP), described in the IEEE 1588-2008 version 2 standard, allows for extremely precise synchronization of networks. An absolute timing accuracy of better than 100 nanoseconds to UTC can be achieved using this protocol as it uses hardware-generated timestamps. This provides significant improvements on the accuracy of network-distributed time over legacy Network Time Protocol (NTP) servers. The PTP80 uses an internal oscillator (OCXO as standard, factory upgradeable to Rubidium) disciplined by an integral GPS receiver as a highly stable time base. The use of precision oscillator options provides improved stability in holdover mode if the input source is interrupted for any reason. The front panel has a large alphanumeric LCD, status indicator and 5-segment button for easy status and minimal configuration. The main configuration and monitoring is through a secondary network port providing web access. A range of additional output options are available, including serial, pulse, time-code and frequency.



### Network Time Servers



#### NTV-100RG

Brandywine Communications NTV-100RG is a Network time server using NTP. This network time server, or NTP server, is a convenient and flexible means to accurately time synchronize computers, time displays, PBX's, and a wide variety of other equipment. The NTV-100RG is a small, rack mounted Network Time Server that can synchronize to GPS or to the IRIG B time code to provide NTP. With eight built-in channels in a compact 1U chassis, the NTV-100RG can also accept NTP and output serial time messages for synchronizing external devices such as time displays.



### ENTA

The Enhanced Network Time Appliance (ENTA) is a full function Network Time Server and Master Clock that offers the user precision time and frequencies in addition to the GPS synchronized time server. This unit is fully compliant with the NENA requirements of a Master clock and is available with single and dual network ports. The ENTA Network Time Server has multiple time code outputs available including: IRIG B, IRIG E, and Have Quick. The ENTA II is a top of the line NTP server based on Brandywine's proprietary IXO technology, providing the highest performance and technology of a GPS master clock at an affordable price.

### M210 and M211

The M210 & M211 Modular Timing Systems offer versatile solutions to many timing applications. This product line features two basic chassis, one with three option slots (M210) and one with nine option slots (M211). With over thirty standard plug-in options, this product offers a complete COTS Master Clock solution to your time and frequency needs.



### NTA-100

The Network Time Adapter (NTA-100) is used as a Network Time Protocol (NTP) server that receives its time from the Global Positioning System (GPS) and distributes this time via NTP and a serial port to almost any wall display or other serial devices. The convenient, low cost Network Time Server is an excellent source for accurately time synchronizing computers, time displays, PBX's and a wide variety of other equipment.

## Distribution Amplifiers

### FTSU

Time and Frequency Distribution and Transfer Switch. Compatible with Model PTS. Low phase noise, multiple outputs

### FTSU-100D

Advanced Frequency/ Time Distribution Amplifier. Will accept two sources such as 1PPS and a reference frequency such as 10MHz. This unit has hitless switching and very low phase noise outputs.



### FDU-240

Offers the most requested and reliable frequency distribution features: 24 outputs of 5MHz or 10MHz reference frequencies. This product is a very reliable low phase noise distribution unit.



### IBU-240

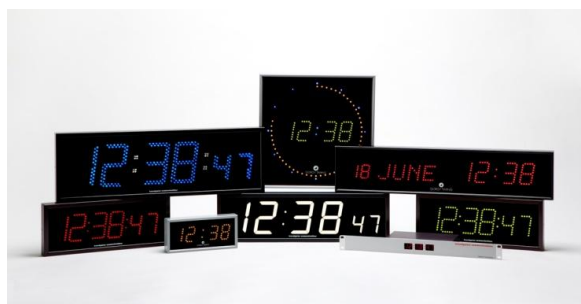
An IRIG time code reader that provides 24 isolated time code outputs. Designed for IRIG B, IRIG A time code outputs



### TDU-310

The TDU-310 is a high performance time signal distribution amplifier designed to distribute the precise time and time interval (PTTI) time signals generated by military GPS receivers compliant with ICD-GPS-060.

## Network Time Displays



### DISPLAYS

Brandywine provides all different sizes and shapes of precise Time Displays - both digital and analogue clocks to fit your needs with options such as IRIG-B, GPS or NTP synchronization. Brandywine's time displays also have optional date message and have sizes ranging from 6 inches up to 8 feet in size. Brandywine just upgraded all of their time displays with SNMP management for easy maintenance and use. Brandywine specializes in customizing your clock to fit your specific need. Our time displays are maintenance free and are used in many different places all over the world including hospitals, schools, train stations, and airports.

## Bus-level options

Unitronix offers the widest range of timing plug-in card form factors in the industry from the PCI timing card to PMC to VME cards. With the largest variety of options including standards like IRIG B, 1PPS, Have Quick, and GPS you can customize your timing card to fit your need. From the most requested PCI Synclock32 with optional GPS receiver, to the advanced conduction cooled PMC model to the staple VME card, these boards offer the latest technology as well as the most extensive list of standard features and options available to bus



level timing cards. Most of these timing cards include IRIG B, NASA, and 1PPS sync inputs as well as optional GPS synchronization. Zero latency time to the microsecond, external event time capture to 100ns and two programmable rate generators are standard on most PCI cards as well. A variety of options are available for our timing cards; the list of more common options are: extended temperature range, eight external event inputs, TCXO and OCXO time bases, and multiple output codes such as IRIG B and 1PPS

**For further information on these products or for technical support call:  
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