

TFD8000

Ruggedised Ultra-Precision Modular Time & Frequency Distribution System

The TFD8000 is a powerful and versatile time and frequency distribution system designed for applications where a wide variety of high precision time and frequency signals are required. It is suitable for a wide range of high-end applications.



Features

- Proprietary Backplane system ensures the provision of any frequency, pulse rate or timecode from just three core signals
- Single, dual or triple redundant configurations available
- Internal or external time synchronisation source
- Optional selection of internal oscillators from Cesium to Quartz ensuring all stability requirements can be met
- Precision oscillator module available for low noise frequency outputs
- Available in a range of chassis configurations
- Wide range of option modules

Highly Stable Frequency Source

In demanding applications where the availability of a time synchronisation source is limited, the TFD8000 maintains an accurate time base by means of high stability frequency standards.

This enhanced holdover capability ensures both the continued provision of accurate time and frequency together with very high system availability. This feature is critical in applications such as when a submarine is submerged or when access to satellite synchronisation sources is denied.

TFD8000 System

Applications

The TFD8000 is particularly suitable for military systems in naval or airborne applications



The TFD8000 is particularly suitable for applications requiring highly accurate time and frequency in a variety of formats, e.g. military systems in naval or airborne applications such as:

- Communications Systems
- Encryption Devices
- Weapons Systems
- Navigational Equipment

The TFD8000 incorporates many features essential in mission-critical military systems:

- Ruggedised construction
- Modular platform
- Hot-swappable modules
- Configurable redundancy
- Optimal space envelope
- Sophisticated built-in monitoring and alarms



System Design

The sophisticated design of the equipment ensures high-speed digital pulse rates, timecodes and network interfaces are available together with low phase noise analogue frequencies in a single instrument.

The proprietary backplane system allows the distribution of any time or frequency format from just three core signals.

This ensures that advanced requirements such as dual or triple redundancy can be simply achieved by this equipment thus improving the overall availability of the system.



TFD8000 System

Configuration Options

The TFD8000 offers many different configurations, so the optimum system architecture may be constructed to meet your specific application. Wherever feasible, input and output modules are mounted in the rear of the equipment whilst the man/machine interface modules are mounted in the front of the equipment.

Synchronisation Sources

- GPS (external or integral)
- LF Radio Transmission (WWVB, MSF, DCF77)
- Timecode (IRIG-B, IRIG-E, XR3, 2137, AFNOR)
- HaveQuick (I, II, IIa, Saturn)

Signal Output

A wide range of signal and frequency output modules are available, including:

- Timecode output (IRIG-B, IRIG-E, XR3, 2137, AFNOR, TD1, TD2, HaveQuick, Saturn)
- Analogue frequencies (square wave or low phase noise sinusoidal)
- Pulse distribution
- Serial data distribution (RS232/RS422/RS485)
- Network Interfaces (ATM/NTP/PTP/SNMP)

Tracking Oscillator

The holdover performance of the system is dependant on the internal oscillator(s) selected for the application. Options include the following frequency standards.

- Quartz,
- Rubidium
- Cesium

Chassis Configurations

A range of chassis configurations is available dependant on the complexity of the requirement and the available space:

- Single Depth - 20 module slots – front only access
- Dual Depth - 34 module slots – both front and rear access
- Dual Pack - Additional chassis available for housing multiple Tracking Oscillator/ Clock modules

As standard, the chassis are 19-inch rack-mountable units, with the Dual Depth chassis providing significantly enhanced functionality, whilst remaining compact.

For the most complex applications including full redundancy, a complete TFD8000 System may comprise a number of chassis in combination, thereby fulfilling demanding system requirements with the minimum space envelope.

Power

The TFD8000 System can be configured to operate from the following power sources:

- 115/230VAC
- 24VDC
- 48VDC

Additionally, the system may also contain an integral standby supply.

Environmental Specifications

Temperature (Operating): 0°C to +50°C
 Temperature (Storage): -40°C to +70°C
 Humidity: MIL-STD-810E Procedure 507.3
 Salt Fog: MIL-STD-810E Procedure 509.3
 Altitude: MIL-STD-810E Procedure 500.3
 Vibration: MIL-STD-167-1

Shock: MIL-S-901-C
 EM: MIL-STD-461 CE01, CE102, CS101, RS101, RE101, CS114 (10kHz-30MHz), RE102 (10kHz-1GHz), RS103 (2MHz-19GHz)
 ESD: IEC801-2

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