

# Time and Frequency Modular Time and Frequency System Model: 9100



## Application - Defense (Military) ■ SatCom ■ Wireless

- Communications Networks
- Satellite Ground Stations
- Mobile Radio Synchronization
- Station/BITS Clock
- Test and Measurement Systems

## Features

- Single or Dual Redundant Configurations
- GPS Discipline of Crystal and Rubidium Oscillators
- Low Phase Noise and Spurious on Sine Wave Outputs
- Modules "Hot Swappable"
- RS-232 and Network Interfaces
- Network Time Server



## Description:

The Model 9100 is a robust and versatile modular frequency and time system. Ultra-stable frequencies, rates, and telecom outputs are all referenced to GPS. Disciplined oscillators include both double oven crystal oscillators and rubidium oscillators. Once synchronized to GPS, sophisticated oscillator discipline algorithms maintain a high degree of precision and smoothness on all outputs. The Model 9100 is highly configurable, featuring a wide selection of hot swappable, plug-in functional modules. Dual redundant configurations include two antennas, GPS receivers, oscillators, and power supplies. For increased versatility, the Models 9200 and 9300 Distribution Units are available for producing additional frequency, digital, and telecom outputs. For users requiring large quantities of output signals, up to four Model 9200's or 9300's may be "daisy chained" to a single Model 9100 with status of all units communicated through the Model 9100. Model 9200 has 56 outputs and Model 9300 has 48 outputs.

The Model 9100 system consists of a main frame with plug-in modules and provides precise time and frequency outputs from GPS derived references. While the Model 9100 was designed as a redundant system, it can be configured for non-redundant operation. With its modularity and as timing requirements change, fielded units are easily upgraded with addition or change of appropriate modules (within constraints of available module locations).

## Specifications:

GPS Reference Module Slots:	Two	Weight:	25 Pounds With Full Complement of Modules
Distribution Module Slots:	Six	Finish:	Clear Anodized Aluminum
Fault Sense Module Slots:	Two	Operating Temperature:	-30° C to +60° C, With Modules
Power Supply Module Slots:	Two	Humidity:	95% Relative, Non-Condensing, With Modules
Dimensions:	5.22 High (3U), 19 Inches Wide, and 15 Inches Deep	Agency:	CE Mark
		Approvals:	FCC, Class B

Specifications subject to change without notice.

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## Model 9100 Modules

Operational functionality of the Model 9100 is determined by four basic plug-in module types. These are GPS Reference, Distribution, Fault Sense, and Power Supply. The GPS Reference module includes a GPS timing receiver, oscillator disciplined by GPS and generators supplying various system references. Two GPS Reference modules are supplied in redundant configurations. Distribution modules include frequency distribution, digital distribution, sine wave generator, digital rate generator, and telecom (framed and clock). The Fault Sense Unit module monitors status of all installed modules and provides several communications I/O port types. Power Supply module supplies operational power for modules in the Model 9100 and can have either AC or DC power inputs. Two Power Supply modules are supplied in redundant configurations.

All modules are "intelligent" and interact with the Fault Sense Unit providing fault/status and accepting control and set up commands. As timing requirements change, simply determine a suitable module type, order and plug into appropriate Model 9100 module slot. No hardware/software field changes are required.

Below is a list of currently available modules. Following this list are individual module data sheets describing each module and are presented in the same order as the list below. Consult factory for your particular timing function not shown.

### Reference Modules:

- Model 9101-5 GPS Reference, With Double Oven Crystal Oscillator, Antenna and 50 Feet of Coaxial Cable
- Model 9101-3 GPS Reference, With Rubidium Oscillator, Antenna and 50 Feet of Coaxial Cable

### Distribution

- Model 9106 4-Channel Digital Distribution Module (DDM), TTL Levels
- Model 9107 4-Channel Frequency Distribution Module (FDM), Sine Wave and Time Code Distribution
- Model 9109 Sine Wave Generator (SGM), 5 MHz From System 10 MHz
- Model 9111 Telecom Generator (TEL), T1 or E1 Framed and Clock
- Model 9114 Digital Rate Generator (DRG), Various Digital Rate Outputs

### Fault Sense

- Model 9104 Fault Sense Unit (FSU) Monitors Status of all Installed Modules, Provides Several Communications I/O Port Types, Alarms, and Network Interface with Network Time Server

### Power Supply

- Model 9120 Universal AC Power Input, 100 to 240 VAC
- Model 9121 DC Power Input, 20 to 60 VDC

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