

# Time and Frequency

## Disciplined Frequency Standard Module for Model 9100B

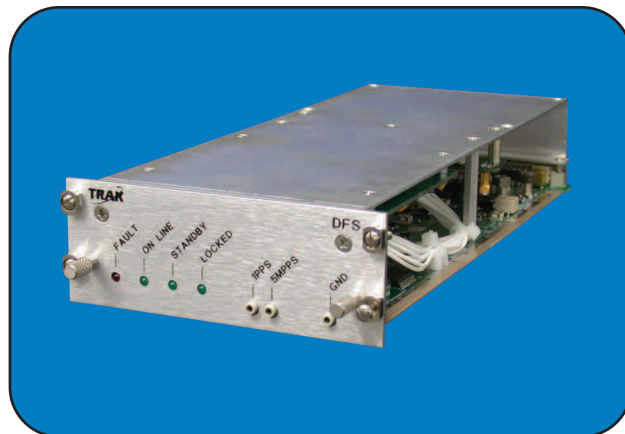
Model: 9102B



Application - Defense (Military) ■ SatCom ■ Wireless

### Description:

This module is designed to discipline either a rubidium oscillator or double oven crystal oscillator, from an external GPS or other precise 1 PPS source and provides all Model 9100B system references. Time output is not available with the DFS. Output reference signals are distributed, through back plane buses, to various modules. Front panel test points and fault and status indicators are provided.



### Specifications:

#### DFS Module with Rubidium Oscillator

Long Term Freq. Stability Locked to GPS:	$<1 \times 10^{-12}$ (24 hour average)
Short Term Freq. Stability Locked to GPS:	$<3 \times 10^{-11}$ (1 second)
Phase Accuracy with GPS:	50 - 100 ns, after 1 hour from power up
Holdover Freq. Stability:	$<2 \times 10^{-11}$ / day, after 72 hours locked to precise 1PPS
Holdover Phase Accuracy:	1 day, $\pm 2 \mu\text{sec}$ 5 days, $\pm 10 \mu\text{sec}$ , after 72 hours locked to precise 1PPS

#### DFS Module with Double Oven Crystal Oscillator

With the exception of performance specifications, this GPS Reference module is functionally equivalent to the rubidium model.

Long Term Freq. Stability Locked to GPS:	$<1 \times 10^{-12}$ (24 hour average)
Short Term Freq. Stability Locked to GPS:	$<3 \times 10^{-11}$ (1 second)
Phase Accuracy with GPS:	50 - 100 ns, after 1 hour from power up
Holdover Freq. Stability:	$<1 \times 10^{-10}$ / day, after 72 hours locked to precise 1 PPS
Holdover Phase Accuracy:	1 day, $\pm 7 \mu\text{sec}$ , after 72 hours locked to precise 1 PPS

#### 10 MHz Phase Noise, System Output

	Rubidium	D.O. Crystal
10 Hz	-100 dBc	-115 dBc
100 Hz	-125 dBc	-135 dBc
1 KHz	-140 dBc	-145 dBc
10 KHz	-145 dBc	-150 dBc
100 KHz	-145 dBc	-150 dBc

#### Indicators

Fault:	Faults within the module
On Line/ Standby:	In redundant systems indicates which source is on line
Locked:	Source is within a certain accuracy level

Specifications subject to change without notice.