

# NOVATECH INSTRUMENTS, INC.

## 30MHz DDS Signal Generator

### Model 2910B



2910A

The Model 2910B is a 30MHz DDS Signal Generator in a table top instrument case. The 2910B generates a synthesized output simultaneously from 100Hz to 30MHz in 1 $\mu$ Hz steps. The 2910B can be locked to an external frequency standard or used with its internal temperature compensated crystal oscillator (TCXO). The internal TCXO provides  $\pm 1$ ppm accuracy. Sine, TTL or squarewave differential outputs are available. Simple front panel controls or RS232 allows setting of all parameters, which can be saved into non-volatile memory upon power down.

## Specifications:

### OUTPUT

TYPES: Sine, TTL or Squarewave Differential.  
IMPEDANCE: 50 $\Omega$ , Sine and TTL. 100 $\Omega$ , Differential.  
RANGE: 100Hz to 30MHz in 1 $\mu$ Hz steps.

### AMPLITUDE

Sine: approx. +13dBm (1.0V<sub>rms</sub>) into 50 $\Omega$ . TTL: V<sub>ol</sub><0.5V, V<sub>oh</sub>>2.4V into a 15pF series terminated load. Differential:  $\pm 1.6$ V<sub>pp</sub> minimum into 100 $\Omega$ .

### CONTROL

Three front panel buttons and a rotary encoder per section allow setting of frequency and menu selections. The same functions can be set using RS232 to 19.2kbaud. Output Frequency, status and menus are displayed on a 2-line LCD.

### ACCURACY AND STABILITY (internal clock)

On-board TCXO gives  $\pm 1$ ppm at 18-28  $^{\circ}$ C. Stable to an additional  $\pm 1.5$ ppm per year, 18-28  $^{\circ}$ C.

### LOCK TO EXTERNAL STANDARD

LEVEL: 0.5-3V<sub>rms</sub> Sine or Square Wave can be applied to the EXT STD Input BNC. 50 $\Omega$ .  
EXT. STD. FREQUENCY: 1, 2, 5 or 10MHz, selectable from front panel or serial commands. The accuracy and stability of a locked 2910B are equal to the standard.  
LOCK RANGE: The 2910B will lock and track an EXT. STD. Frequency as long as the input frequency is equal to the selected frequency  $\pm 4$ ppm.

### SPECTRAL PURITY (Sine only, Typ. 50 $\Omega$ load)

Phase Noise: <-130dBc, 10kHz offset, 5MHz out.  
Spurious: <-60dBc below 10MHz (typ. 60MHz span)  
<-50dBc below 20MHz  
<-40dBc below 30MHz  
Harmonic: <-70dBc below 1MHz  
<-60dBc below 10MHz  
<-50dBc below 20MHz  
<-35dBc below 30MHz

### JITTER

<0.1% of Period or 100pS, whichever is greater, TTL and Differential Outputs only.

### POWER REQUIREMENTS

120/240VAC, 25VA Max. 50/60Hz.

### ENVIRONMENTAL

Temperature: +5 $^{\circ}$ C to +40 $^{\circ}$ C operating.  
Humidity: 80% to 31 $^{\circ}$ C, decreasing to 50% at 40 $^{\circ}$ C.

### CONFIGURATIONS

2910B: One Sine and One TTL, BNC connectors.  
2910B/01: Dual TTL Outputs, BNC connectors.  
2910B/02: Dual Differential Outputs, Triax connectors.  
(2910A/02 upgrade)

Consult factory for configuration availability.

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