

# ST4060 1 MHz Function Generator

- Frequency Range: 0.1Hz-1MHz
- Operating Modes: Sine, Square, Triangle, DC
- 30V Peak to Peak Output
- Low Signal Distortion
- FM-Input / External Sweep
- Overdrive indicator
- TTL/CMOS Trigger output
- Display for Frequency & Amplitude



Scientech ST4060 is an extremely versatile Function Generator. It has a wide frequency range with a digital display for frequency and amplitude. The output amplitude can be varied upto  $30V_{pp}$  (open circuit) and can be attenuated to **60 dB**. All outputs are short-circuit proof. LED indication (Over drive) for signal clipping is provided while using **ST4060** in DC offset mode. It has a switchable  $50\Omega/600\Omega$  output. TTL/CMOS out also available for Digital Lab experiments.

Additional features indicating its high quality include **constant amplitude flatness** and **low distortion factor of signals**. It is a new laboratory standard offering low cost solution to all your needs.

## Technical Specifications

### Operating Modes

Sine - Square - Triangle - DC  
Free running or external frequency modulated, with or without DC offset

### Frequency Range

0.1Hz - 1MHz in 7 decade steps, variable control between steps

**Frequency Stability** :  $<0.1\%$  / h or  $0.3\%$  / 24h at constant ambient temp. (medium position of frequency control)

### Waveform Characteristics

#### Sine Wave Distortion :

0.1 Hz to 100 kHz : max.0.5%  
100 kHz to 500 kHz : max. 1.5%  
500 kHz to 1 MHz : max. 3%

**Square Wave Risetime:** max. 70ns (10 to 90%)

**Overshoot** :  $\leq 5\%$  (when output is terminated with  $50\Omega$ )

**Triangle Non-Linearity:**  $\leq 1\%$  (upto100 kHz) approx.

### Display

Display switchable for frequency and amplitude, with automatically positioned decimal point. LED indicator for Hz, kHz, mV and V.

**Frequency** : 4 digit 7 Segment LED  
**Accuracy** : upto 100 kHz :  $\pm 1\% \pm \text{LSD}$   
upto 1MHz :  $\pm 3\% \pm \text{LSD}$

**Amplitude:**3 digit 7 Segment LED

**Accuracy:**  $3V_{pp} - 30V_{pp}$  :  $\pm 3\%$   
 $300mV_{pp} - 3V_{pp}$  :  $\pm 5\%$   
 $30mV_{pp} - 300mV_{pp}$  :  $\pm 5\%$

**Overdrive:** indicated with two LEDs

### Outputs

**Signal output** : (short-circuit proof)  
**Impedance** :  $50\Omega / 600\Omega$  switchable  
**Output Voltage** : max.  $15V_{pp}$  into  $50\Omega$   
 $30 V_{pp}$  open circuit

### Attenuation :

2 steps :  $-20\text{dB} \pm 0.2\text{dB}$  each  
Variable attenuation : 0 to  $-20\text{dB}$  total to  $-60\text{dB}$

**Amplitude Flatness** : (sine / triangle) with  $50\Omega$  termination

0.1 Hz to 100 kHz : max. 0.2 dB  
100 kHz to 1 MHz : max.0.5 dB

**DC Offset** : Continuously variable (switchable)

**Offset range** : max.  $\pm 6.25\text{V}$  into  $50\Omega$  max.  $\pm 12.5\text{V}$  open circuit

**Trigger Output** : Switch selectable TTL/CMOS. TTL more than 4V, CMOS level adjustable upto14 V approx

### FM Input / External Sweep

**Frequency change** : approx. 1 : 100  
**Input impedance** :  $100k\Omega || 25pF$   
**Input voltage** : max  $\pm 30V$

### General Information

**Supply** :  $230\text{V AC}, \pm 10\%, 50\text{Hz}$   
**Power Consumption** : 20 VA approx.  
**Operating Conditions:**  $0-50^\circ\text{C}, \text{RH}95\%$   
**Dimensions (mm):** W196, H80, D 262  
**Weight** : 2.5 kg (approx.)

(Subject to change)