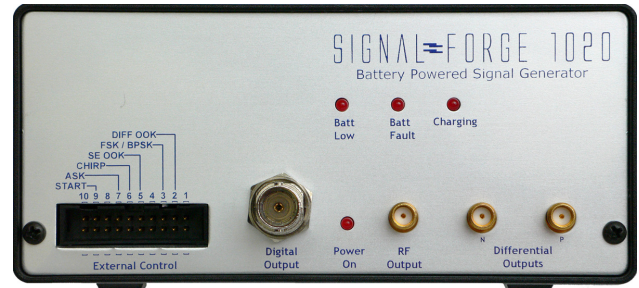




## BATTERY POWERED SIGNAL GENERATOR



FINALLY A SIGNAL GENERATOR THAT GOES INTO THE FIELD WITH YOU

Tired of lugging a big, heavy signal generator into the field? Try the Signal Forge 1020 (SF1020)—the first high-performance signal generator designed specifically for field engineers. The SF1020 represents a significant breakthrough in test tools—a high-performance signal generator in a small, battery-powered package. A 1 GHz frequency range combined with RF, digital and differential outputs, and numerous waveform modulation functions make the SF1020 the signal generator of choice for field test applications.



Size: 8.5in x 5.4in x 2.5in

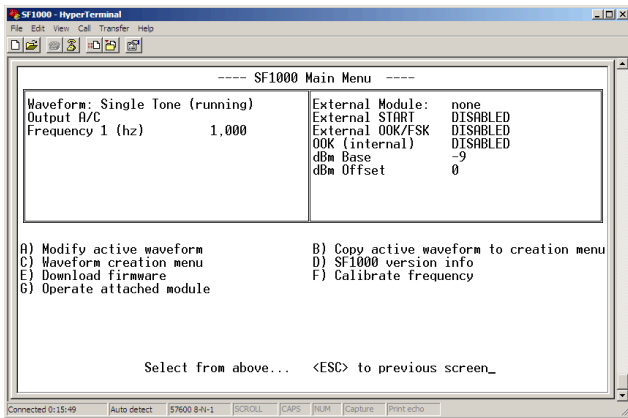
### KEY FEATURES

- ✓ Battery-powered – 3 hour run time per charge
- ✓ Small form factor (L 8.5 in x W 5.4 in x H 2.5 in)
- ✓ Frequency range of 1 Hz to 1 GHz
- ✓ RF, Differential and Digital outputs
- ✓ Sine wave 
- ✓ Square wave 
- ✓ AM, ASK, BPSK, Chirp, FM, FSK, OOK, Sweep
- ✓ Embedded Wave Manager software
- ✓ Auto-start – automatically starts stored waveform at power-up, enabling stand-alone operation



# CONTROL AND PROGRAMMING

## Main Menu Wave Manager Software



Setup, configuration and programming is accomplished using Wave Manager, a menu-driven application embedded on the SF1020.

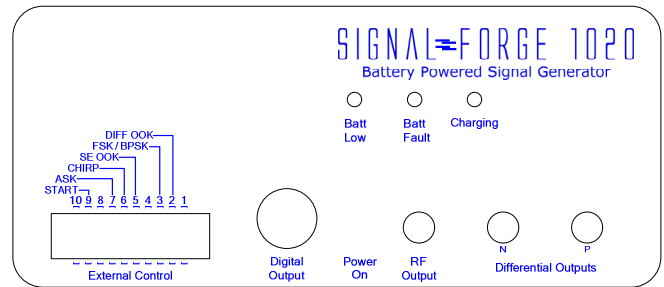
No need to install software on your PC—Wave Manager, simply connect your PC to the SF1020 using a standard serial connection (or USB with optional adapter) and terminal communication software such as Windows HyperTerminal or Signal Forge’s EZ Terminal (free download).

Use Wave Manager to configure all aspects of the SF1020 operation, including:

- ✓ Select output type
- ✓ Create waveforms – set freq. and modulation
- ✓ Modify waveforms
- ✓ Load arbitrary waveform definition files
- ✓ Setup auto-start

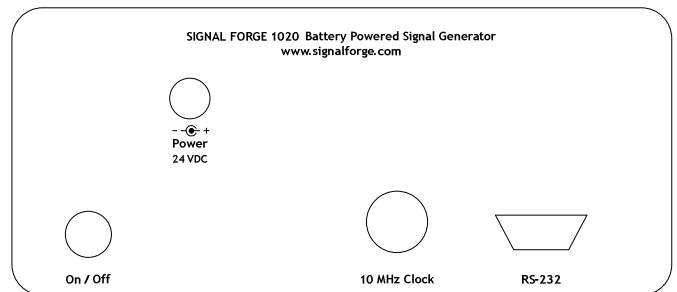
# CONNECTIONS AND OUTPUTS

## Front Panel



- ✓ RF (AC coupled): a sine wave output with a frequency range of 1 KHz to 1 GHz
- ✓ Digital: a TTL output supporting 3.3V, 2.5V and 1.8V voltage levels with a frequency range of 1 Hz to 110 MHz
- ✓ Differential: an LVPECL output with a frequency range of 50 MHz to 1 GHz
- ✓ External Control connector provides:
  - ▶ Remote start
  - ▶ ASK control
  - ▶ FSK control
  - ▶ OOK control

## Rear Panel



- ✓ RS-232 connector for the PC console (an optional USB allows connection via USB interface)
- ✓ 10 MHz reference clock
  - ▶ Output on model 1020
- ✓ AC power/battery charger connector
- ✓ On/Off button

# SPECIFICATIONS

## General

---

<b>Frequency Range</b>	1 Hz to 1 GHz
<b>Frequency Resolution</b>	1 Hz
<b>Power Range (AC Output)</b>	-12 to +12 dBm
<b>Amplitude Range</b>	RMS 50 mV to 500 mV P-P 143 mV to 1414 mV
<b>Amplitude Resolution</b>	1 dB
<b>Power Output Accuracy</b>	±2 dB from 100 KHz to 300 MHz ±3 dB from 300MHz to 1 GHz

## Operating Limits

---

<b>RF Output</b>	1 KHz to 1 GHz
<b>Differential Output</b>	50 MHz to 1 GHz
<b>Digital (TTL) Output</b>	1 Hz to 110 MHz

## Waveform Modulations

---

The following waveform modulations are supported by the SF1020: AM, ASK, BPSK, Chirp, OOK, Sweep. See the SF1020 User Manual for modulation ranges and details about these functions.

## Frequency Standard

---

<b>Output</b>	10 MHz into 50 Ω
<b>Frequency Accuracy</b>	4ppm
<b>Frequency Stability</b>	1ppm/year (may drift 3ppm in first year)
<b>Frequency Drift per Hour</b>	0.0002% (After warm-up)

## VWSR

---

<b>Output Match (VSWR)</b>	
<b>1 MHz to 7 MHz</b>	<1.5:1 @ +7 dBm
<b>7 MHz to 1 GHz</b>	<1.3:1 @ +7dBm

## External Control Header

---

A dual-row, 10-position connector on the front panel

<b>Input Voltage</b>	3.3V (5V Tolerant)
<b>Output voltage (TX_MOD pin)</b>	5V

## Spectral Purity

---

<b>Harmonics</b>	
<b>2 MHz to 50 MHz</b>	< -40 dBc
<b>50 MHz to 100 MHz</b>	< -40 dBc
<b>100 MHz to 500 MHz</b>	< -20 dBc
<b>500 MHz to 1 GHz</b>	< -20 dBc

<b>Non-Harmonics (worst case)</b>	
<b>100 KHz to 100 MHz</b>	< -50 dBc
<b>100 MHz to 500 MHz</b>	< -30 dBc
<b>500 MHz to 1 GHz</b>	< -30 dBc

<b>Clock Feed-Through</b>	< -85 dBm
---------------------------	-----------

<b>Phase Noise ≤100MHz</b>	
-50 dBc/Hz @ 10 KHz Offset	
-73 dBc/Hz @ 100 KHz Offset	
-90 dBc/Hz @ 1000 KHz Offset	

<b>Phase Noise &gt;100MHz</b>	
-20 dBc/Hz @ 10 KHz Offset	
-60 dBc/Hz @ 100 KHz Offset	
-90 dBc/Hz @ 1000 KHz Offset	

## Power

---

<b>Battery</b>	3 hour continuous operation per charge
<b>Charger / AC Supply</b>	24V charger / AC adapter included

## Signal Generator Models

- SF1020** Battery Powered Signal Generator
- SF1000** Digitally Synthesized Signal Generator  
Provides 10 MHz Clock Output
- SF1000E** Digitally Synthesized Signal Generator  
*External clock source required.*

## RF Frequency Expansion Modules

- 2500M** Frequency Expansion Module.  
Attaches to SF1000 or SF1020 and  
provides an RF output of  
1.5 GHz to 2.6 GHz
- 1800M** Frequency Expansion Module.  
Attaches to SF1000 or SF1020 and  
provides an RF output of  
950 MHz to 1.8 GHz

*NOTE: The 2500M and 1800M can only be used with  
the SF1000 and SF1000E*

## Accessories

- SF-BRK** 1 U Rack Mount Bracket.  
Holds 3 SF1000 units and mounts in a  
standard 19 in. rack

## Ordering Information

Products may be purchased directly from the Signal Forge web site at [www.signalforge.com](http://www.signalforge.com).

Purchase Orders may be submitted via email to [sales@signalforge.com](mailto:sales@signalforge.com) or fax to 512-275-3735.

For quotes, please send a request for quote to Signal Forge sales at [sales@signalforge.com](mailto:sales@signalforge.com) or call 512-275-3733, option 1.

For more product information and pricing, visit the Products page of the Signal Forge web site: [www.signalforge.com](http://www.signalforge.com).

Signal Forge, LLC  
2115 Saratoga Dive  
Austin TX 78733 USA  
T 512.275.3733  
F 512.275.3735  
[www.signalforge.com](http://www.signalforge.com)  
Sales and Customer Service  
[sales@signalforge.com](mailto:sales@signalforge.com)  
Technical Support  
[support@signalforge.com](mailto:support@signalforge.com)