



# Application Note

## Generating Spectrally Clean Output

*Applicable Products*

SF1000
SF100E
SF800
SF800E

### Description

The Signal Forge Signal Generators provides an AC coupled output that can source a sinusoidal output in the range of 100KHz to 1GHz. This output provides a signal with harmonics at least 20 dB down (from 300 MHz to 1GHz) at programmable output power levels. If a cleaner sinewave signal is needed, for example, to drive the LO or a receiver mixer, an external filter may be attached.

### Operation

An external low pass filter (for an octave of frequency range usually) or a bandpass (BW as required) may be connected to the SMA connector of the SF1000 or SF800 AC Coupled output. There are several filter design and simulation programs that can be used to design a low pass filter.

### Implementation Notes

A low pass filter implementation is shown below. It can be built on FR4 material at very low cost. The SF800 has an output driver with a 50-ohm source impedance, capacitively coupled to the external load. S-Parameters for this output driver are available upon request.

