

## FEATURES

- Frequency Range 0.5GHz to 18GHz
- Single Tone and ENR noise
- High Speed Pulse Modulation
- Standby Mode
- -40°C to +85°C operating temperature
- Compact Size
- Mil-Std 810E

## APPLICATIONS

- Benchtop noise figure testing
- Automated Test Equipment (ATE)
- Built in test for RF receivers and radiometers
- Communication system testing
- Satelittle system testing
- Radar system testing
- SIGINT/EW system testing
- Jamming/Jamming Simulation

# NDR180

## 0.5 GHz to 18 GHz

### Signal Generator Module (SGM)

#### DESCRIPTION

The NDR180 Signal Generator Module (SGM) is a test source offering single tone (CW) source generation at frequencies between 0.5 and 18 GHz or leveled, broadband noise excitation over the full band. In addition, at least 50 dB of high-speed pulse modulation can be applied to both signal modes. Both modes are multiplexed to a common broadband coaxial (GPPO) output port with fastener points provided to mount a field replaceable bulkhead cable termination.

The single tone source generation is accomplished using a Fractional N PLL with integrated oscillators. The SGM can provide up to 14 dBm of leveled output power below 6 GHz, 10 dBm of leveled output power between 6 and 9 GHz, and 6 dBm of leveled output power above 9 GHz. User controllable attenuators provide over 50 dB of signal attenuation with less than 1 mSec response time. A blanking pin is provided on the external control interface that can be toggled to apply the full attenuation range as pulse modulation (PWM) with less than 10 nSec rise and fall time and minimum 100 nSec pulse width. Tuning speed is typically less than 1 mSec from the end of the digital command.



The second calibration signal generated by the SGM is broadband ENR noise. In noise mode, the SGM provides greater than 40 dB of leveled noise across the entire 0.5 – 18 GHz band to the common RF output port. Noise is internally leveled to +/- 2 dB across the band. The full signal attenuation range is available in noise mode, and the blanking line provides the same PWM specifications as CW mode.

The SGM is comprised of a single Printed Circuit Assembly (PCA) within an enclosed aluminum housing that provides EMI shielding and environmental protection. The SGM dissipates about 3 Watts of thermal energy through its bottom cover. Four mounting holes are provided to mount the chassis to an appropriate heat sink. The system requires an external 10 MHz or 100 MHz reference for frequency discipline, but can free-run from an internal crystal with +/- 100 ppm stability. The external frequency reference is provided using the same coaxial interface as the RF output. Digital control of the SGM is through a SPI bus interface provided through a 20-Pin flat flexible cable (FFC) connected to a zero-insertion force (ZIF) connector on the printed circuit board (PCB). The FFC interface also provides synthesizer lock, microprocessor busy, and EEPROM write protect signals, as well as the blanking line for PWM control.