

Top 5 Uses of the 1510A Portable Signal Generator

As one of the most versatile and powerful hand-held signal generators on the market, the 1510A is a two-channel, battery-powered, microprocessor-controlled direct digital signal generator. It has an average battery life of 3 hours of continuous use. Weighing in at under two pounds, makes it ideal for use in the field.

There are many different ways this sophisticated device can be leveraged to perform precise test and calibration of equipment, wires, cables, sensors and much more.

Use Case 1 | Calibration of Balancing Equipment

The 1510A is uniquely designed to simulate all of the common types of vibration and speed sensors. The dual outputs of the 1510A can simulate a speed sensor, a vibration sensor, and the phase simultaneously. The 1510A output range is 0-100kHz, allowing it to simulate speed signals for large and small turbofan engines, APUs, turbochargers, pumps, compressors, and other rotating machinery. The 1510A can even simulate odd-tooth type tachometer signals that are commonly found in gas turbine engines and charge-mode sensors such as piezoelectric accelerometers.

Use Case 2 | Calibration of Condition Monitoring Systems

Condition Monitoring systems are typically composed for several sensors measuring a variety of process parameters for the purposes of recording system status and detecting developing faults. Many Condition Monitoring systems must be calibrated after installation in order to account for losses due to cabling and other environmental factors. The portability and durability of the 1510A make it an ideal device for in-field calibration. The 1510A can simulate all of the common types of sensors used to measure these parameters, including accelerometers, pressure transducers, microphones, speed sensors, temperature thermocouples, strain gages, EKG/EEG sensors, and eddy current probes.

Use Case 3 | Calibration of Charge Amplifiers

To accurately measure the physical phenomenon, such as vibration, exciting a piezoelectric accelerometer, the charge amplifier requires periodic calibration. Many charge amplifiers have adjustable bandwidth and gain settings that should also be confirmed. Over time a charge amplifier's signal response can drift or the charge amplifier or associated cabling can be damaged. The 1510A Handheld Signal Generator has been designed specifically for this purpose and can be used to simulate most types of piezoelectric accelerometers. The 1510A has both single-ended and differential charge output options.

Use Case 4 | Sensor Simulation

Often during development of a new system or process, all of the conditions that a system is expected to operate under cannot be created on demand and instead must be simulated. The simulation is not only necessary to test for the proper connection of wiring and electronics, but also to test all of the functions implemented in software and/or other signal processing blocks in the system. The 1510A can be used to generate signals that represent accelerometers, pressure transducers, microphones, speed sensors, temperature thermocouples, strain gages, EKG/EEG sensors, and eddy current probes.

Use Case 5 | Test Alarm Conditions

An essential function of Condition Monitoring systems is often to trigger an alarm or trip a safety switch when unwanted or dangerous conditions are detected. These alarms must be routinely checked for proper operation. The portability and durability of the 1510A make it an ideal device for in-situ testing of these alarms. The 1510 can be used to create gradually increasing/decreasing signals that can pass through the alarm condition, and thereby confirm that the prescribed alarms are triggered when they should be.

For more use cases go to:

<https://mtiinstruments.com/top1510A>

