AETECHRON

3110 Audio- Bandwidth Standards Waveform Generator

Features

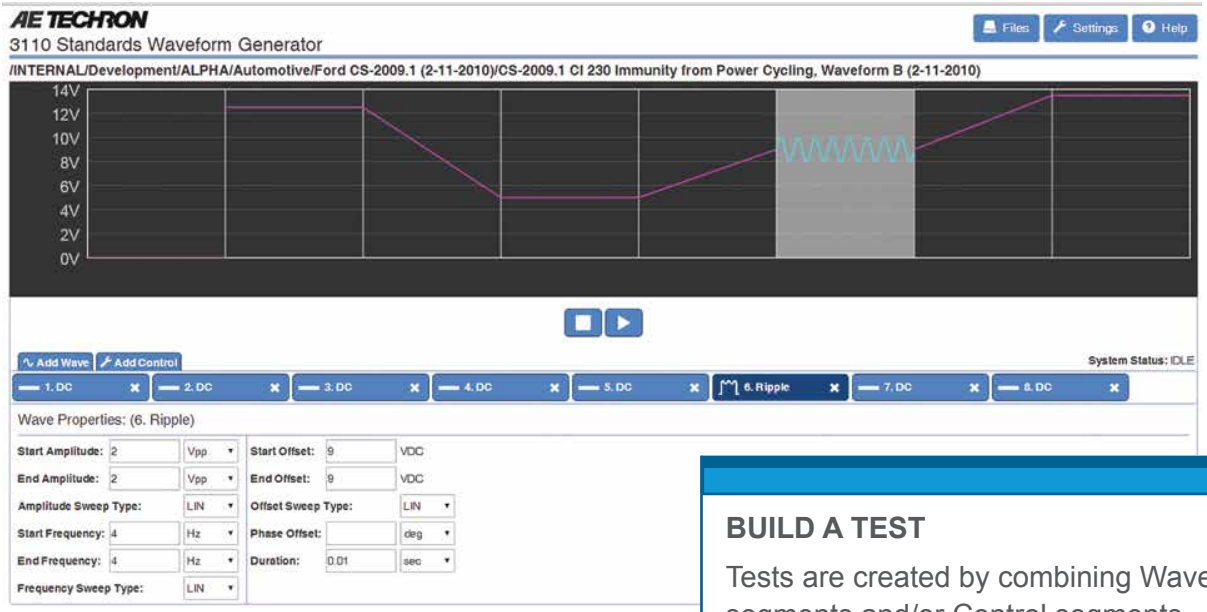
- Includes a large library of Automotive and Aviation Standards' test routines
- Drag and drop interface makes it easy to modify existing tests or build new waveform sequences
- Loop entire tests or test sections; repeat loops with increments of up to four variables
- Form multi-test programs by quickly linking tests from the Standards Library
- Instantly halts testing if an amplifier fault occurs, saving time and preventing potential equipment damage*
- Can be used as a free-standing test system or connected to an Ethernet network and controlled remotely

*When used with AE Techron 7000-series amplifiers.

AE Techron's *3110* is a simple-to-use yet powerful standards waveform generator. It can be combined with other AE Techron products to quickly create a wide range of powerful and intelligent EMC test solutions.

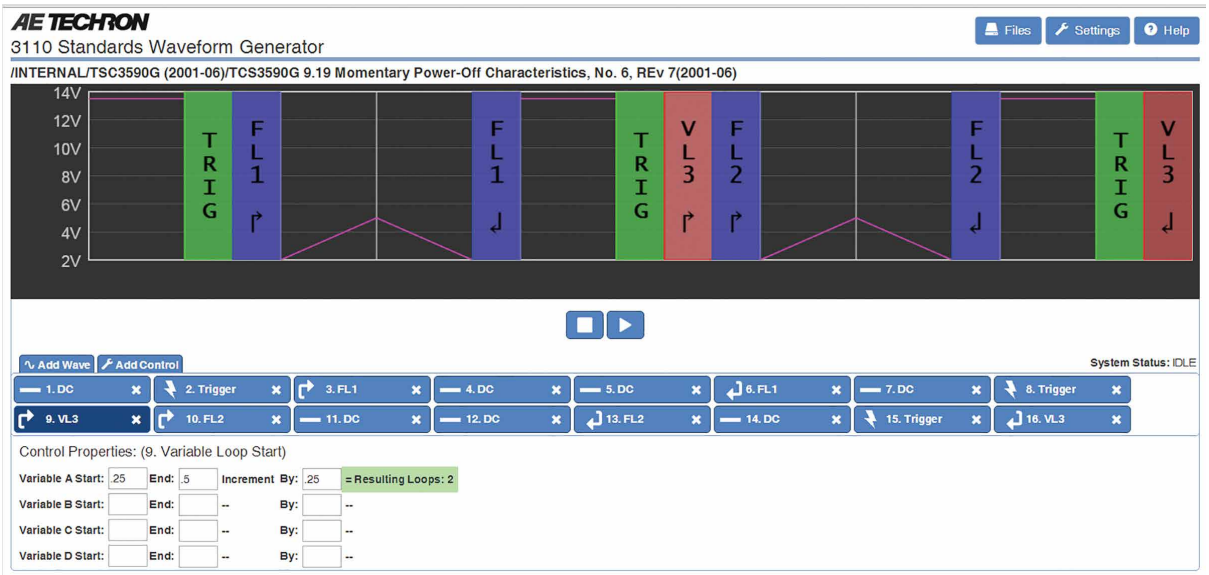
Standards Library

The 3110 comes with an extensive library of tests for many automotive and aviation Standards. Tests can be modified and saved for future use in the 3110's library, which has the space to store more than 300,000 tests total.



BUILD A TEST

Tests are created by combining Wave segments and/or Control segments together. An individual segment within a test, can be as short as 10 µS or as long as 49 days.



WAVE CONTROLS like Fixed Loop, Variable Loop and Trigger, make the 3110 able to reproduce the most complex standards.

The test shown above highlights several key abilities made possible by these wave controls A multi-step waveform can start at one level/condition, then be repeated, with up to 4 variables changing.

Single or multi-step waveforms can be made to repeat (or loop) and these repeating (looping) waveforms can be nested within a larger simple or repeating waveform. At any point during a simple or repeating wave form, it is possible to cause the program to stop (either holding the previous condition or muting) and wait for an external trigger.

Performance

The 3110 produces standard signals and waveforms with or without a DC offset. Frequency, amplitude and DC offset can be fixed or swept, and sweeps can be linear, logarithmic or exponential. It can create dropouts and surges with rise and fall times as fast as 3µs. Individual signal duration can be as short as 10µs or as long as 49 days. It can also produce ripple waveforms of up to 300 kHz.

Signal Control

The 3110 offers unique and powerful “wave controls” that make it easy to build complex tests containing repeating waveforms with up to four variables concurrently changing. In addition, tests can be imported from the 3110 library and linked to form multi-test programs that can also be set to repeat, loop or wait for a trigger.

BUILD A SYSTEM

Together, the 3110 and 7000-series amplifiers create an intelligent, modular test system. When used for automotive testing, test system capabilities include 13.5 VDC with a surge potential of up to 100V, or continuous power ratings from 15A to 240A DC. For aviation testing, system capabilities include 14 VDC/28 VDC or 115 VAC/230 VAC with surge voltages up to 360 VAC.

Modular Systems

The 3110 can be used with other AE Techron products to create versatile audio-frequency test systems capable of performing tests for a wide range of automotive and aviation Standards. Choose the 7000-series model that meets your output requirements, or combine two or more amplifiers to create a multi-amp system for additional voltage or current output.

When the 3110 is used with a 7000-series amplifier, it operates as an intelligent system controller, continuously monitoring the amplifier's status. If an amplifier fault occurs, the 3110 will instantly halt testing, saving time and preventing potential damage.

Technical Details - Hardware

Output channels: 1

Output Voltage: 10 Vpk

Signal Generation:

DAC:
18 bit
DC – 20 kHz (any wave form)
3 µs full scale (includes settling time)

Sine:
14 bit
DC – 300 kHz
400 Msps
0.01 Hz frequency resolution or better
0.002° phase granularity

Amplitude:
76µV resolution

Frequency:
Stability: ±50 ppm
Accuracy: ±0.1%

Control, Status, I/O

Front Panel:
On/Off/Breaker
Signal Input: BNC (analog - 10Vp)
Signal Output: BNC (analog - 10Vp)
LED Displays: Power, System Fault, Signal-In Enabled

Back Panel:
Power Connection:
120VAC: IEC cable with NEMA 5-20
230VAC: IEC cable with CEE 7/7
Fuse: 2A, 250V slow blow (5 mm)
Signal Input: BNC connector (analog)
High Voltage Input: High-voltage banana connectors (200 Vp-p max)
Multi-Amp Connect: DB-9 connector
Accessory: DB-15 connector
To Amplifier: DB-25 connector
Mouse: USB 2.0 connector
Network: RJ-45 connector (1 GB)
Keyboard: USB 2.0 connector
Memory Card: MicroSD card slot
Monitor: HDMI connector

Physical Characteristics

Chassis:
The 3110 is designed for table-top or rack-mounted operation. The chassis is aluminum with a black powder-coat finish. The unit occupies two EIA 19-inch-wide units.

Weight:
9.5 lbs (4.31 kg)

Shipping Weight: 19.5 lbs (8.85 kg)

AC Power:
Single phase, 120VAC, 50/60 Hz, 1.0VA service; 230VAC, 50/60 Hz, 0.5VA model available

Dimensions:
19 in. x 11.75 in. x 3.5 in.
(48.3 cm x 29.8 cm x 8.9 cm)

Technical Highlights – Software

Waveforms Supported:
Sine, Ripple, DC, Triangle, Square, Sawtooth

Waveform Modifiers:
Amplitude: Fixed or Sweep
(Linear, Log, Exponential)
Frequency: Fixed or Sweep
(Linear, Log, Exponential)
DC Offset: Fixed or Sweep
(Linear, Log, Exponential)

Waveform Controls:
Trigger, Fixed Loop, Variable Loop, Template Playback

Test Capabilities:
Maximum Waveform Duration: 1193 hours
Minimum Waveform Duration: 10 µs
Maximum Number of Loop Repeats: >1 million

Storage Capabilities:
Number of Tests: 300,000
(expandable to 1 million)