33500B Series Waveform Generator featuring True*form* technology

QUICK FACTS

- Sine waves with 5x lower harmonic distortion
- Pulses up to 30 MHz with 10x less jitter
- Point-by-point arbitrary waveforms with sequencing
- 16 bits of resolution with 1 mVpp to 10 Vpp amplitude
- Choose among 8 models with the capability you need now and easily upgrade later

ADDITIONAL RESOURCES

Find demo videos, application content, and links to the 33500B Series at:
www.agilent.com/find/Trueform

QUICK DEMO

Equipment: 33500B series waveform generator, 3000 series or equivalent oscilloscope, BNC cable

Conventions: Hard keys are **bold** and soft keys are underlined

Summary: This demo creates a square wave and uses the sum features to modify it

1. Set up and turn on the scope and waveform generator. Connect the BNC cable to channel 1 of the scope and channel 1 of the waveform generator.
2. Above the yellow connector press channel setup **1** ⟶ Output Load ⟶ Set to High Z, matching the impedance of the waveform generator and the oscilloscope. Press Output On then move to the scope and press **Autoscale.**
   A 200 mVpp sine wave is displayed on the scope.
3. Press **Parameters** ⟶ Amplitude; use the key pad to enter **5** and press Vpp.
4. Press **Waveforms** ⟶ Square. Press **Autoscale** on the scope.
   A 5 Vpp square wave is displayed on the scope.
5. Press **Modulate** ⟶ Type ⟶ Sum ⟶ Sum Ampl; use the key pad to enter **10** and press Percent ⟶ Sum Freq; use the key pad to enter **10** and press kHz ⟶ Modulation On.
   We just added a 10 kHz sine wave at 10% amplitude to the square wave.
6. Press Shape ⟶ More ⟶ Noise.
   We just added 100 kHz (default setting) noise at 10% amplitude to the square wave.

Quick Demo Guide

WITH Trueform TECHNOLOGY

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Product Fair Spark Demo

The Spark Demo is designed to be an eye catching demo at a product fair. The demo creates the Agilent Spark on an oscilloscope. An oscilloscope typically displays waveforms over time. In this demo the scope will be used in XY mode. The function generator will create a signal for both the Y and the X axis. Communication waveforms that use IQ modulation can be created and displayed using this same technique. An important feature is the waveform is being created from a single file (Dual Arb) with data for both Ch 1 and Ch 2.

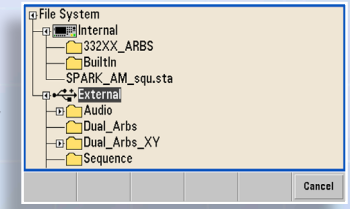
Equipment

1. Waveform Generator Ch 1 connected to Oscilloscope Ch1
2. Waveform Generator Ch 2 connected to Oscilloscope Ch 2
3. ACM Demo Stick inserted to USB drive on the front panel

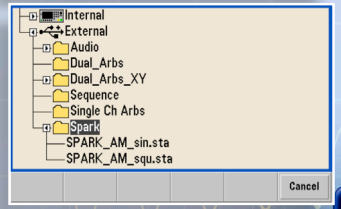
Setting up the Waveform Generator

From a default power-up state (or **System** → Set to Defaults)

1. The waveform generator will be configured using a stored state. Press **System** → Store/Recall → Recall State. Use the **knob** to select the External Drive (USB stick has to be inserted) → **Right arrow key** under the knob to display the contents of the USB drive. See right.



2. Use the **knob** to select Spark Folder. Use the **Right arrow key** to display the contents of the Spark folder as shown at right.



3. Select either state using the **knob** SPARK_AM_sin.sta (Spark will grow brighter) or SPARK_AM_squ.sta (Spark will flash). Press the Select button once a state has been highlighted.

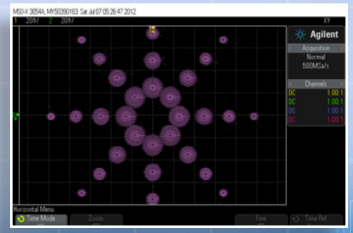
Setting up the Oscilloscope

1. Press **Autoscale** button

2. In the Horizontal controls press the **Horiz** then Time Mode softkey (far left) press multiple times to select XY Once XY is displayed wait and the scope will change to XY mode.

3. Adjust the position of the Spark: Press the two position **knobs** just below the lit Ch 1 button and below the lit Ch 2 button.

4. Adjust the size of the Spark: Adjust the vertical scale **knob** above the lit Ch 1 button to 20 mV then adjust the vertical scale **knob** above the lit Ch 2 button to 20 mV. The resulting display is shown here.



Spark Demo Guide

WITH True*form* TECHNOLOGY

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