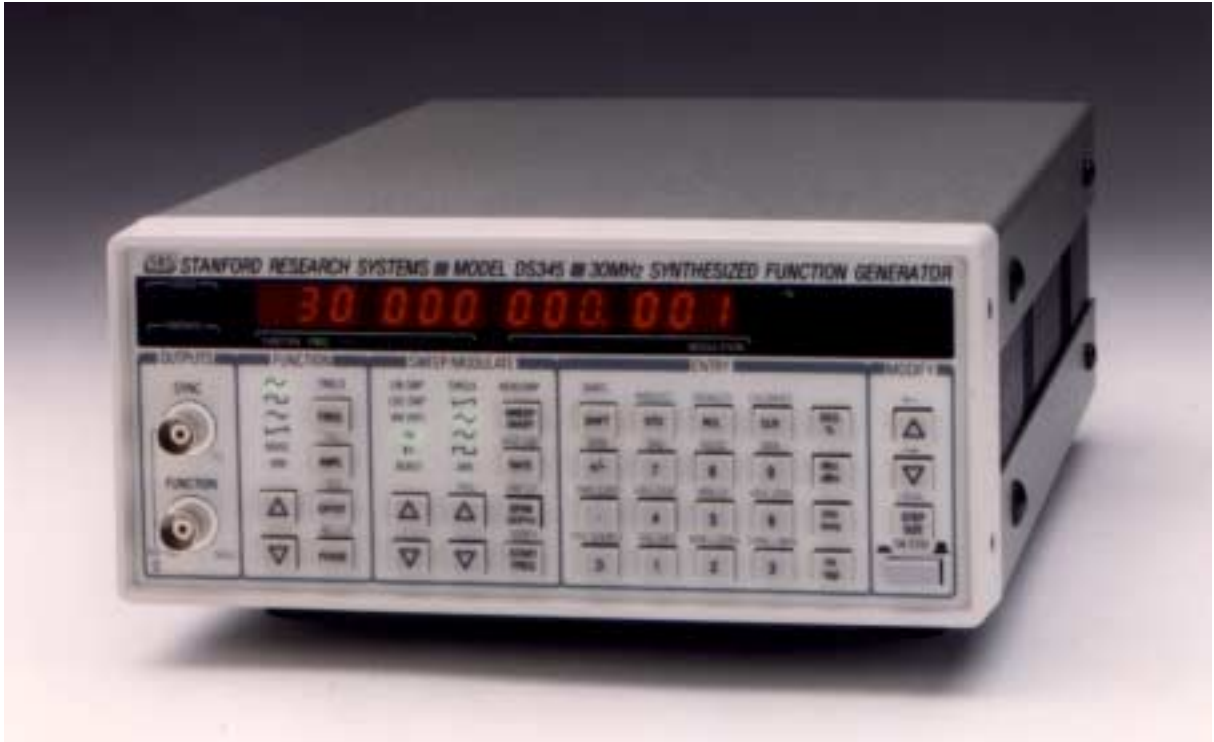


Product Demonstration

DS345: 30 MHz Synthesized Function Generator



The DS345 is a full featured 30 MHz synthesized function generator. It is capable of producing standard waveforms (sine, square, etc.) and includes a built-in arbitrary waveform generator.

Key Features

- Frequency output up to 30.2 MHz with 1 μ Hz resolution
- Sine, Square, Ramp, Triangle and Noise Output
- 12 bit, 40 Msample/s arbitrary waveforms
- Frequency Sweep
- AM, FM, Phase and Burst Modulation
- Optional RS232, GPIB interfaces

Required Test Equipment

- DS345
- 2 channel oscilloscope
- Several BNC cables
- A 50 ohm terminator

This product demonstration is designed to familiarize you with some basic functions of the DS345: continuous sine wave, frequency sweep and variable duty cycle square waves.

Note: Start every exercise by resetting the DS345. Hold down the CLR key while powering up the unit. Wait about three seconds and release the CLR key.



Simple sine waves:

1. Reset the DS345.
2. Press the AMPL key to set the amplitude. Press the "8" key, then the unit key "Vpp".
3. Press the FREQ key to set the frequency. Press the "2" key, then the unit key "kHz".
4. Use a BNC cable and connect the front panel FUNCTION output to the oscilloscope, terminating the output into 50 ohms.
5. A DC offset can also be added by using the OFFST key.

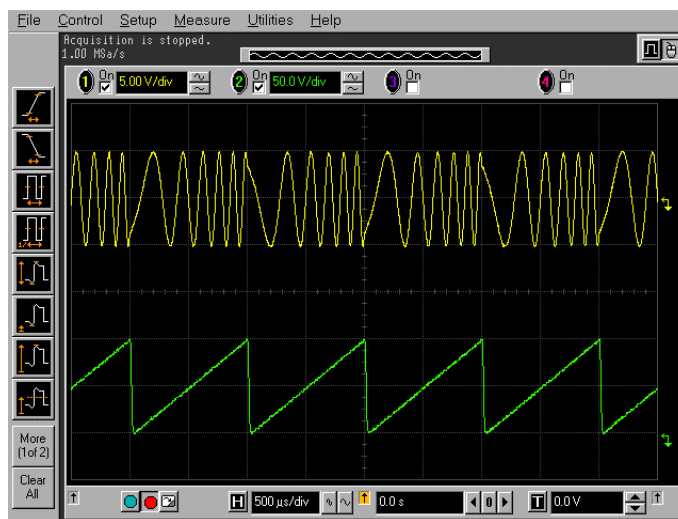


Linear Frequency Sweep

1. Reset the DS345. The default function output is sine wave.
2. Set the amplitude to 5 Vpp.
3. Choose Linear Sweep by pressing the Modulation Type Up/Down Arrow key to LIN SWP.
4. Set the sweep waveform to RAMP waveform by pressing the Modulation Waveform Up/Down Arrow key. The DS345 will sweep from the start to stop frequency, jump back to the start frequency, and repeat.
5. Set the duration of the sweep by pressing the RATE key. Enter 1 kHz by pressing the "1" keys, then the unit "kHz" key. The sweep will take 1 ms.
6. Press the START FREQ key to set sweep Start Frequency. Enter "1" then press the "kHz" key.

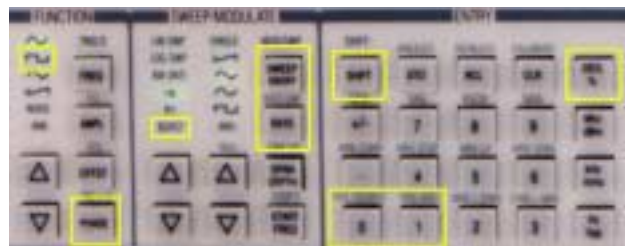


7. Press the SHIFT then START FREQ keys to set Stop Frequency. Enter the "10" key then press the "kHz" key.
8. Press the SWEEP ON/OFF key to turn the frequency sweep on.
9. Get two BNC cables. Connect the main output of the DS345 to channel one of the oscilloscope. And terminate the output into 50 ohms. Also connect the rear panel sweep output to channel two of the oscilloscope.
10. The main output should now show a linear sweep of sine waves. The rear panel sweep output shows a 0 - 10 V analog ramp, that follows the sweep.

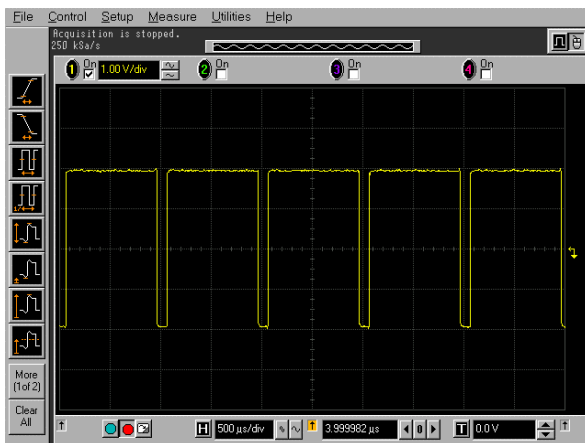


Variable Duty Cycle Square Wave

1. Start the exercise by resetting the unit.
2. Press the Function Down Arrow key to select the square waveform.
3. Set pulse Frequency to 5 kHz and Amplitude to 4 Vpp.
4. Set the unit to BURST mode with the Modulation Down Arrow key.
5. Press the SHIFT then the "0" key to set TRIG SOURCE. Use the MODIFY Up/DOWN Arrow keys on the far right to set trigger source to RATE.
6. Press the SHIFT then the "1" key to set TRIG RATE. Leave it as default rate of 1 kHz.



7. Press the SHIFT then RATE to set BRST CNT (Burst Count, ie. the number of pulses in a burst). Choose 1, the default number.
8. Press the SWEEP ON/OFF key to turn the burst on.
9. Use a BNC cable to connect the DS345 to an oscilloscope, again terminating the main Output into 50 ohms. The scope should show a 90% duty cycle pulse train with a repetitive rate of 1 kHz.
10. To get a 10% duty cycle pulse train, press the PHASE key and phase shift the output 180° (use the DEG key).



90% Duty Cycle Pulse Train



10% Duty Cycle Pulse Train

11. To get different pulse width, press the FREQ key and change the frequency. An offset may also be added by pressing the OFFST key.