



# DS335 Synthesized Function Generator

- **3.1 MHz direct digital synthesis source**
- **1  $\mu$ Hz resolution**
- **Sine, square, ramp and triangle waveforms**
- **Linear and log sweeps**
- **Spurious components less than -65 dBc**
- **FSK up to 1 MHz**
- **Optional RS-232 and IEEE-488 interfaces**

Finally, a high performance, low cost signal generator with synthesized frequency accuracy. Introducing the DS335 Synthesized Function Generator from SRS.

Using direct digital synthesis (DDS), the DS335 generates an extremely clean output with spurious components less than -65 dBc, and is capable of driving 10 V<sub>p-p</sub> into 50 ohms (20 V<sub>p-p</sub> into high impedance loads).

The sine and square wave functions provide frequencies up to 3.1 MHz with 1 $\mu$ Hz resolution. Ramps and triangles are generated to 10 kHz. The noise output provides a 3.5 MHz broadband (white) noise source.

Additionally, the DS335 performs linear and logarithmic frequency sweeps. Sweeps are phase continuous over the instrument's entire frequency range, with no disconti-

nities due to band switching. Sweeps are triggered internally or manually from the front panel.

Frequency shift keying (FSK) is an additional feature that steps between two frequencies at a given rate. The internal rate generator allows switching up to 50 kHz, while a rear panel input accepts external clocks at rates up to 1 MHz.

And the DS335 is fully programmable, making it ideal for automated systems. The optional IEEE-488 and RS-232 interfaces provide fast and easy communication with computers.

The DS335 represents a breakthrough in value, offering higher performance and more features than signal generators costing twice as much. For more information, or to place an order, call SRS at (408) 744-9040.



# Specifications

## FREQUENCY RANGE

Waveforms	
Sine	1 $\mu$ Hz to 3.1 MHz
Square	1 $\mu$ Hz to 3.1 MHz
Ramp	1 $\mu$ Hz to 10 kHz
Triangle	1 $\mu$ Hz to 10 kHz
White noise	DC to 3.5 MHz
Frequency resolution	1 $\mu$ Hz

## FUNCTION OUTPUT

Impedance	50 $\Omega$
Range	50 mVpp to 10 Vpp (20 Vpp into High Z)
Accuracy	0.1 dB
Resolution	12 bit (3 digits)
DC Offset	$\pm$ 5 VDC (50 $\Omega$ )
Offset resolution	10 mV
Isolation	40 V

## SINE SPECTRAL PURITY

Spurious response	< -65 dBc to 1 MHz (+6dB/oct > 1 MHz)
Harmonic distortion	
DC to 20 kHz	< -70 dBc
20 kHz to 100 kHz	< -60 dBc
100 kHz to 1 MHz	< -50 dBc
1 MHz to 3.1 MHz	< -40 dBc
Phase noise (30 kHz band centered on carrier)	< -60 dBc

## SQUARE WAVE

Rise/Fall time (10% to 90%)	15 ns $\pm$ 5 ns
Asymmetry	< (1% + 3 ns)
Overshoot (full scale output)	< 2%

## RAMPS AND TRIANGLES

Rise/Fall time (10% to 90%)	100 ns $\pm$ 20 ns
Linearity	$\pm$ 0.1% of full scale
Settling time	200 ns to 0.5%

## FSK AND SWEEPS

FSK rate	Internal - 50 kHz External - 1 MHz
FSK rate resolution	2 Digits
Sweeps	Linear and logarithmic
Sweep spans	Linear - 1 $\mu$ Hz to 3.1 MHz Log - Six decades
Sweep rate	0.01 Hz - 1 kHz

## TIMEBASE

Accuracy	5 ppm (20 - 30°C)
Aging	5 ppm/year
Optional Timebase	Accuracy - 2 ppm (20 - 50°C) Aging - 2 ppm/year

## GENERAL

Front panel outputs	Sync (TTL levels into 50 $\Omega$ )
Rear panel inputs	FSK
Rear panel outputs	Sweep/FSK
Interface option	GPIB and RS-232 inter- faces. All instrument functions are controllable over the interfaces.
Display	8 digit LED display
Non-volatile memory	9 instrument settings
Power	22 Watts, 50/60 Hz. 100/120/220/240 VAC.
Dimensions	8.5"x3.5"x13" (WxHxD)
Weight	8 lbs.
Warranty	One year parts and labor on materials and workmanship.

Specifications subject to change without notice (01/03)



# Ordering Information

## DS335

Synthesized  
Function Generator

## OPTIONS

-01  
-02  
-0345RMS  
-0345RMD

RS-232 and IEEE-488 interface.  
TCXO Timebase  
Single Rack Mount Kit  
Double Rack Mount Kit



## STANFORD RESEARCH SYSTEMS

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