

METRAVI ECO

DDS-9-6 DDS-9-12 DDS-9-25 DDS FUNCTION GENERATORS

PRODUCT INTRODUCTION

The Metravi DDS-9 Series Function Signal Generators are high-performance, dual-channel DDS generators designed to deliver accurate, stable, and flexible waveform outputs.

The model number's last 2 digits (e.g. DDS-9-25) indicate the maximum sine wave output frequency in MHz, offering a clear frequency reference at a glance.

Built using large-scale CMOS integrated circuits and a high-speed microprocessor, these instruments ensure exceptional signal stability, thanks to an internal active crystal oscillator benchmark. The adoption of surface-mount technology further enhances interference resistance and long-term reliability.

With support for sine, square, triangle, sawtooth, and user-defined waveforms, the DDS-9 Series offers full control over amplitude, offset, and phase.

It also features TTL level output, external frequency measurement, counter functionality, and both linear and logarithmic sweep modes, with user-configurable sweep frequency and duration.

Ideal for engineering labs, production environments, research, and education, the DDS-9 Series provides a comprehensive solution for all waveform generation needs.



GENERAL SPECIFICATIONS

Display	: Backlit LCD
Interface	: USB to Serial Port; 9600bps transfer speed
Buzzer	: Can be turned ON/OFF
Warm-up time	: 30 minutes under the specific temperature (18°C~28°C), for specified accuracy
Operating Environment	: 0°- 40°C; <80%RH
Dimensions	: 200 x 190 x 90 mm (L x W x H)
Weight	: Nett 750gms; Gross 900gms

*Images and Specifications are subject to change without prior notice

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FEATURES & FUNCTIONS

- Built-in arbitrary waveform with **250 MSa/s sampling rate**
- 4 downloadable 2048 dots arbitrary waveform memories
- With **12 bit wide waveform generator**, the output waveform can be more delicate with low distortion
- **Fully numerical control**. It can display and numerical control amplitude, offset, frequency, duty cycle of current signal output and phase difference of two channels. And dual-channel arbitrary integer multiples of the frequency output when no phase error signal phase drift
- Each **function can be adjusted** by host computer
- Pre-installed **17 common waveforms**
- **High frequency accuracy**: magnitude 10 - 6
- **High resolution**: Full range frequency resolution can be 10 mHz
- Both main and subsidiary wave duty cycle are adjustable separately (0.1% - 99.9%)
- **All ranges continuously adjustable**, digital directly setting
- **High waveform accuracy**: The output waveform synthesised by function calculation is of high accuracy and low distortion
- **Arbitrary waveform**: User can load arbitrary waveform according to the need
- **Sweep Function**: Linear sweep and Logarithmic sweep. Starting and stop points can be set optionally
- **Save function**: 20 sets of parameters defined by the users can be saved and loaded anytime
- Operation mode: Button and knob controlled with LCD1602 display, digital set directly or knob adjusted continuously
- **Highly reliable**: Large scale integrated circuit, Surface mounting technology, reliable and durable
- **Frequency measurement**: Frequency of internal / external signal can be measured through built-in 100MHz frequency meter
- **Follow function**: Built-in parameter follow function covering frequency, amplitude, offset, duty cycle, waveform etc. for user's convenience.
- **Trigger output function**: User can choose manual trigger, external trigger or CH2 trigger to control the main output to output waveforms of specified periodicity. This periodicity can also be defined by the user
- **FSK frequency shift keying and ASK amplitude shift keying** signal output





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TECHNICAL SPECIFICATIONS

FREQUENCY			
MODEL	DDS-9-6	DDS-9-12	DDS-9-25
Sine	0~6MHz	0~12MHz	0~25MHz
Square		0~6MHz	
Ramp/Triangle		0~6MHz	
Pulse		0~6MHz	
TTL/CMOS		0~6MHz	
Arbitrary Wave		0~6MHz	
Resolution		0.01Hz(10mHz)	
Accuracy		$\pm 5 \times 10^{-6}$	
Stability		$\pm 1 \times 10^{-6}$ / 3 Hours	
Phase Range		0~359°	
Phase Resolution		1°	
WAVEFORMS			
Types	Sine, Square, Triangle (Ramp), Arbitrary, Sawtooth, Pulse, Noise, etc.		
Length	2048Points		
Sampling Rate	250MSa/s		
Vertical Resolution	12 Bits		
Sine	Harmonic Suppression	$\geq 45\text{dBc}(<1\text{MHz}); \geq 40\text{dBc}(1\text{MHz}\sim 20\text{MHz});$	
	Total Harmonic Distortion	$<0.8\%$ (20Hz~20kHz,0dBm)	
Square	Rise/Fall Time	$\leq 20\text{ns}$	
	Overshoot	$\leq 7.5\%$	
	Duty Cycle	0.1%~99.9%	
Sawtooth	Linearity	$\geq 98\%$ (0.01Hz~10kHz)	
OUTPUT			
Amplitude (50Ω)	10mVpp~20Vpp (No load)		
Amplitude Resolution	10mV		
Amplitude Stability	$\pm 0.5\%$ / 5 Hours		
Amplitude Flatness	$\pm 5\%$ ($<10\text{MHz}$) ; $\pm 10\%$ ($>10\text{MHz}$)		

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TECHNICAL SPECIFICATIONS

WAVEFORM OUTPUT		
Impedance	50Ω±10% (Typical)	
Protection	All channels can work more than 60 seconds when the load is short-circuited.	
DC OFFSET		
Offset Range	±10V	
Resolution	0.01V	
TTL OUTPUT		
Dual-channel TTL electric level synchronize with CH1 and CH2. Phase differences are adjustable.		
Electrical Level	>3Vpp	
Amplitude	Fan-out >20 TTL Load	
Rise/Fall Time	≤20ns	
CMOS OUTPUT		
Low Electric Level	<0.3V	
High Electric Level	1V~10V	
Rise/Fall Time	≤20ns	
EXTERNAL MEASUREMENT		
Frequency Meter	Range	1Hz~100MHz (Gate Time 1S)
Counter	Range	0-4294967295
Voltage Input	Range	2Vpp~20Vpp
SWEEP		
Only 1 channel available		
Type	Linear or Logarithm	
Objects	Frequency	
Time	1S~999S/Step	
Range	Starting position and Finishing position can be set arbitrarily	

