Full Digital Control Dual-Channel DDS FunctionArbitrary Waveform Generator 50MHz

Product Description

The fully controlled dual-channel DDS function/arbitrary waveform generator has a sampling rate of up to 266MSa/s. It features a high-definition 2.4-inch LCD display, independent dual-channel waveform output with continuous phase difference adjustment, and a wide frequency

range, with signal frequencies up to 60 MHz. The output signal can reach up to 20Vpp for frequencies below 11 MHz. Pulse parameters (pulse width, period) are precisely adjustable. The device also offers more flexible sweep functionality, diverse trigger modes (manual, internal, external AC, external DC), and comprehensive measurement features (counting, measurement). It supports arbitrary waveform output with a complete process for arbitrary wave editing, from drawing to downloading and outputting selected waveforms. It also offers programmable control, provides upper computer software and communication protocols, and supports secondary development. The high-quality flame-retardant casing, patented appearance design, and built-in rotating stand make it easier to operate and view data.

- ## Product features

  Dual channel coherent output; High resolution frequency synthesis; Arbitrary waveform generation; Low phase noise; Touch interaction interface

- ## Part Number

  MP-ESG-AW-DS6600-50MHz

Application area

Communication protocol simulation | Radar system testing | Medical instrument development | Material research | Educational experiments

Core parameters

Sine Wave Frequency Range	Pulse Width Adjustment Range
0-50MHz	30nS-4000s

General Parameters

Parameters

	MP-ESG-AW-JD S6600-15MHz	MP-ESG-AW-D S6600-30MHz	MP-ESG-AW-JD S6600-40MHz	MP-ESG-AW-D S6600-50MHz	MP-ESG-AW-JD S6600-60MHz
Sine Wave Frequency Range	0~15MHz	0~30MHz	0~40MHz	0~50MHz	0~60MHz

Square Wave Frequency Range	0~15MHz	0~25MHz	0~25MHz	0~25MHz	0~25MHz
Triangle Wave Frequency Range					
Pulse Wave Frequency Range	0~6MHz	0~6MHz	0~6MHz	0~6MHz	0~6MHz

TTL Digital Wave Frequency Range					
Arbitrary Wave Frequency Range					

Pulse Width Adjustment Range	100nS~4000s	50nS~4000S	40nS~4000s	30nS-4000s	25nS~4000S
Square Wave Rise Time	⩽25ns	⩽15ns	⩽10ns	⩽10ns	⩽10ns

Frequency Minimum Resolution	0.01uHz(0.00000001Hz)
Frequency Accuracy	±20ppm
Frequency Stability	±1ppm/3h

Waveform Characteristics		
Waveform Types	Sine wave, square wave, pulse wave (duty cycle adjustable, pulse width and period time adjustable),triangle wave, offset sine wave, CMOS wave, DC level (DC amplitude set via bias adjustment), half wave, full wave, positive ramp wave, negative ramp wave, noise wave, exponential rise, exponential fall, multi-tone wave, sinc pulse, Lorentz pulse, and 60 types of user-defined waveforms.	
Waveform Length	2048 points	
Waveform Sampling Rate	266MSa/s	
Waveform Vertical Resolution	14 bits	
Sine Wave	Harmonic Suppression	⩾45dBc(<1MHz); ⩾ 40dBc(1MHz~20MHz)
	Total Harmonic Distortion	<1% (20Hz~20kHz,0dBm)

Square Wave and Pulse Wave	Overshoot	⩽5%
Pulse Wave	Duty Cycle Adjustment Range	0.1%-99.9%
Offset Sine Wave	Duty Cycle Adjustment Range	0.1%~99.9%
Sawtooth Wave	Linearity	⩾98%(0.01Hz~10kHz)

Output Characteristics			
Sine Wave Amplitude Range	Frequency⩽ 11MH	11MHz⩽Frequency ⩽31MHz	31MHz⩽ Frequency
	2mVpp~20Vpp	2mVpp~10Vpp	2mVpp~5Vpp
Square/Triangle Wave Amplitude Range	Frequency⩽10MHz	10MH⩽Frequency⩽25MHz	
	2mVpp~20Vpp	2mVpp~10Vpp	
Amplitude Resolution	1mV		

Amplitude Stability	**±0.5%/5h**
Amplitude Flatness	**±5%(**
Waveform Output	
Output Impedance	**50Ω±10%（Typ.）**
Protection	**All signal output ports can operate for up to 60 seconds under short-circuit load conditions**
DC Bias	
Bias Adjustment Range	**-9.99 V ~ 9.99 V adjustable, with the relationship between output amplitude and bias: -10 V ⩽ Bias + Amplitude / 2 ⩽ 10 V**
Bias Resolution	**0.01 V**

Phase Characteristics	
Phase Adjustment Range	**0~359.9°**
Phase Resolution	**0.1°**
TL/CMOS Output	
Low Level	**<0.3V**

High Level	1V~10V	
Rise/Fall Time	⩽20ns	
External Measurement Functions		
Frequency Counter Function	Frequency Measurement Range	1Hz~100MHz
	Measurement Accuracy	Gate time 0.01 s ~ 10 s, continuously adjustable
Counter Function	Count Range	0-4294967295
	Coupling Modes	DC and AC coupling modes
	Counting Modes	Manual
Input Signal Voltage Range	2Vpp~20Vpp	
Pulse Width Measurement	0.01 μs resolution, maximum measurable time: 20 s	
Period Measurement	0.01 μs resolution, maximum measurable time: 20 s	

Sweep Function		
Sweep Channel	**H1 or H2**	
Sweep Type	**Linear scan, logarithmic scan**	
Sweep Time	**0.1s~999.9s**	
Setting Range	**Start point (0.01 Hz) and stop point can be set between the model's maximum output frequency**	
Sweep Direction	**Forward, reverse, and bidirectional**	
Burst Function		
Pulse Count	**1-1048575**	
Burst Mode	**Manual burst, H2 burst, external burst (AC), external burst (DC)**	
General Technical Specifications		
Display	**Display Type**	**24-inch FT color LCD**
Storage and Load	**Quantity**	**100 groups**
	Position	**Up to 9 positions (default to load position 00 at startup)**
Arbitrary Waveforms	**Quantity**	**1 to a total of 0 groups (default to 15 groups at startup)**

Interface	Interface Type	USB to serial interface
	Expansion Interface	Serial interface with TTL level for user secondary development
	Communication Rate	Standard 115200 bps
	Communication Protocol	Command-line-based, protocol is open
Power	Voltage Range	DC5V±0.5V
Manufacturing Process	Surface Mount Technology, large-scale integrated circuits, high reliability, long lifespan	
Audio	Users can enable or disable the beep sound via the program	
Operation Characteristics	Fully button-operated, with continuous adjustment via knob	
Environmental Conditions	Temperature: 0°C ~ 40°C, Humidity: < 80%	