

Full Digital Control Dual-Channel DDS Function Arbitrary Waveform Generator 40MHz



● Product Description

Fully digital dual-channel DDS function/arbitrary waveform generator, with a sampling rate of up to 266MSa/s; features a high-definition 2.4-inch LCD display; independent dual-channel waveform output with continuously adjustable phase difference; wide frequency range, with signal frequencies up to 60MHz, and output signals up to 20Vpp at frequencies below 11MHz; precise adjustable pulse parameters (pulse width, period); more flexible



sweep function; a variety of burst functions (manual, internal, external AC, external DC); comprehensive measurement functions (counting, measurement); a wide variety of waveforms and arbitrary waveform output (full process for arbitrary waveform editing, drawing - downloading selected - output); programmable control, with PC software and communication protocols provided, supporting secondary development; high-quality flame-retardant housing with patented design, and built-in rotating stand for easier operation and data viewing.

- **Product features**

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

- **Part Number**

MP-ESG-AW-DS6600-40MHz

- **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
0-40MHz	40nS-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



Triangular Wave Frequency Range					
Pulse Wave Frequency Range					
TTL Digital Wave Frequency Range	0~6MHz	0~6MHz	0~6MHz	0~6MHz	0~6MHz



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	0.01uHz(0.0000001Hz)
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Minimum Resolution	
Frequency Accuracy	$\pm 20\text{ppm}$
Frequency Stability	$\pm 1\text{ppm}/3\text{h}$
Waveform Characteristics	
Waveform Types	<p>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.</p>
Waveform Length	2048 points
Waveform Sampling Rate	266MSa/s
Waveform Vertical Resolution	14 bits



Sine Wave	Harmonic Suppression	$\geq 45\text{dBc}(<1\text{MHz}); \geq 40\text{dBc}(1\text{MHz}\sim 20\text{MHz})$
	Total Harmonic Distortion	$<1\%$ (20Hz~20kHz,0dBm)
Square Wave and Pulse Wave	Overshoot	$\leq 5\%$
Pulse Wave	Duty Cycle Adjustment Range	0.1%-99.9%
Offset Sine Wave	Duty Cycle Adjustment Range	0.1%~99.9%
Sawtooth Wave	Linearity	$\geq 98\%$ (0.01Hz~10kHz)

Output Characteristics			
Sine Wave Amplitude Range	Frequency $\leq 11\text{MHz}$	$11\text{MHz} \leq \text{Frequency} \leq 31\text{MHz}$	$31\text{MHz} \leq \text{Frequency}$
	2mVpp~20Vpp	2mVpp~10Vpp	2mVpp~5Vpp
Square/Triangle Wave Amplitude Range	Frequency $\leq 10\text{MHz}$		$10\text{MHz} \leq \text{Frequency} \leq 25\text{MHz}$
	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: $-10\text{ V} \leq \text{Bias} + \text{Amplitude} / 2 \leq 10\text{ V}$
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%	