



The following symbols may appear on the product:



Conforms to UL STD. 61010-1
61010-2-030,
Certified to CSA STD C22.2
N0.61010-1,61010-2-030



Product Kit and Accessories:



GENERAL SAFETY OVERVIEW

The Metravi DDS-30 strictly complies with the GB4 793 safety requirements for electrical equipment and IEC61010-1 safety standard during design and manufacturing. It complies with the safety standards for insulated over-voltage CAT II 300V and Pollution Level II.

INTRODUCTION

The Metravi DDS-30 is an economical, high-performance, multi-functional arbitrary waveform generator that uses direct digital synthesis (DDS) technology to produce accurate and stable waveforms. It can generate accurate, stable, pure and low distortion output signals. It has a convenient interface, superior technical indexes and user-friendly graphical display style, which helps users to complete study and test tasks quickly and improves work efficiency.

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MAIN FEATURES

- Frequency output of 30MHz, full-band resolution of 1μHz
- Uses direct digital synthesis (DDS) method, sampling rate of 200MSa/s and vertical resolution of 14 bits
- Low-jitter Square Wave Output
- TTL level signal compatible 7 digits high accuracy frequency counter
- 24 groups non-volatile arbitrary waveform storage
- Simple and useful modulation types: AM, FM, PM, FSK
- Supports frequency scanning and output
- Powerful upper computer software
- 4.3 inches TFT colour screen
- Standard configuration interface: USB Device
- Easy-to-use multi-functional knob and numeric keypad

TECHNICAL SPECIFICATIONS

Unless otherwise stated, when the following two conditions are satisfied, all the technical index specifications can be guaranteed.

1. The signal generator is in the calibration cycle and has been calibrated.
2. The signal generator has operated for over 30 minutes within specified temperature (18°C-28°C).

All specifications are guaranteed except those marked "typical value".

Specification	Details	
Channel	Dual channels	
Max frequency	30MHz	
Sampling rate	200MSa/s	
Waveform	Sine Wave, Square Wave, Ramp Wave, Pulse Wave, Noise, DC, Arbitrary Wave	
Working modes	Output gating, continuous, modulation, frequency sweep	
Modulation types	AM, FM, PM, FSK, Line, Log	
Frequency Characteristics		
Sine wave		
Frequency range	1μHz~30MHz	
Resolution	1μHz	
Accuracy	within 90 days: ±50ppm, within 1 year: ±100ppm (18°C-28°C)	
Harmonic distortion (typical value)	DC~5MHz	-60dBc
	5MHz~30MHz	50dBc
	30MHz~60MHz	-40dBc
THD (typical value)	/0.2% (DC~20kHz, 1Vpp)	
Spurious signal (non-harmonic wave, typical value)	test condition: output power 0dBm	
	DC~10MHz, <-70dBc	
	> 10MHz < -70dBc+6dB/octave	
Phase noise (typical value)	10 MHz: ≤125dBc/Hz (typical, 0dBm, 10kHz deviation)	

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Square Wave	
Frequency range	1μHz~15MHz
Resolution	1μHz
Rise/fall time	<16ns (typical value, 1kHz, 1Vpp)
Overshoot (typical value)	<2%
Duty ratio	0.01%~99.99% (limited by current frequency)
Symmetry (50% duty ratio)	1ns + 100ppm of period
Shake (typical value)	Typical value (1 MHz, 1Vpp, 500)
	≤5MHz: 2ppm+ 200ps
	>5MHz: 200ps
Ramp Wave	
Frequency	1μHz~400kHz
Resolution	1μHz
Non-linearity	3%±2mV (typical value, 1kHz, 1Vpp, symmetry 50%,)
Symmetry	0.0%~100.0%
Pulse Wave	
Frequency	1μHz~15MHz
Resolution	1μHz
Pulse width	≥22ns
Variable edge	15ns~8s
Overshoot	<2% (typical value 1Vpp)
Shake	150ps
Gauss Noise	
Bandwidth	30MHz(-3dB) (typical value)
DC Offset	
Range (peak AC+DC)	±5V (50Ω)
	±10V (high resistance)
Offset accuracy	±3% of offset set value ±6% of amplitude value ±2mV
Arbitrary Wave Characteristics	
Frequency range	1μHz~10MHz
Resolution	1μHz
Wave length	4kpts
Vertical resolution	14bits (symbol included)
Sampling range	200MSa/s
Minimum rising/falling time	< 20ns typical value
Shake	5ns±150ps
Nonvolatile storage	24 waveforms

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Output Characteristics	
Amplitude range	≤10MHz: 1mVpp~10Vpp; (50Ω) ≤60MHz: 1mVpp~5Vpp; (50Ω)
Accuracy (1kHz sine wave)	±(5% of set value+2mVpp)
Amplitude flatness (equal to 1kHz sine wave, 1Vpp/50Ω)	Test condition: typical value (sine wave, 2.0Vpp) ≤100kHz: ±0.1dB; ≤20MHz: ±0.3dB; ≤30MHz: ±0.5dB; ≤40MHz: ±0.6dB; ≤60MHz: ±0.8dB
Waveform Output	
Impedance	50Ω typical value
Insulation	Maximum 42Vpk to ground wire
Protection	Channel protection
Modulation Types	
AM Modulation	
Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave
Source	Internal
Modulation wave	Sine wave, square wave, ramp wave, noise, arbitrary wave
Modulation frequency	2mHz~200kHz
Modulation depth	0%~120%
FM Modulation	
Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave
Modulation wave	Sine wave, square wave, ramp wave, noise, arbitrary wave
Modulation frequency	1μHz~200kHz
Frequency deviation	DC~15MHz
PM Modulation	
Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave
Modulation wave	Sine wave, square wave, ramp wave, noise, arbitrary wave
Modulation frequency	2mHz~200kHz
Phase deviation	0°~360°
FSK Modulation	
Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave
Source	Internal/external
Modulation wave	Square wave (Duty ratio 50%)
Rate	2mHz~100kHz
Frequency sweep	
Carrier wave	Sine wave, square wave, ramp wave, arbitrary wave
Type	Linear or logarithmic
Frequency sweep time	1ms~500s ± 0.1%

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Sync Signal	
Output level	TTL compatible
Output frequency	1μHz~2MHz
Output frequency	50Ω, typical value
Coupled mode	DC
Trigger Input	
Input level	TTL compatible
Input impedance	> 10kΩ, DC coupling
Frequency Counter	
Input level	TTL compatible
Range of input frequency	100mHz-100MHz
Accuracy	±51ppm
Frequency resolution	7 digit
Coupled mode	DC
General Technical Specifications	
Display	
Display type	4.3 inches TFT LCD
Resolution	480x272
Power supply	
Power supply	DC5V, 2A
Power consumption	Less than 10W
Indoor Use	
Temperature range	Operation: 10°C~+40°C
	Storage: -20°C~+60°C
Cooling method	Natural cooling
Humidity range	Below +35°C: ≤90% relative humidity
	+35°C~+40°C: ≤60% relative humidity
Altitude	Below 2,000m
Mechanical Specification	
Dimensions	172mm x 90mm x 68mm
Net weight	0.33kg
Rough weight	0.77kg
Standard Configuration	A power line up to local standard
	A BNC-alligator clip cable
	A BNC cable (1m)
Power Adapter:	
Power voltage	100-240Vrms 50/60Hz 0.4A
Output voltage	5VDC
Output current	2A

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