Data Sheet

20MHz DDS Sweep Function Generator

Model 4040DDS

The model 4040DDS is a low cost, full featured Direct Digital Synthesis (DDS) generator with a menu-driven front panel interface that includes a large, easy-to-read graphical LCD display. Waveform parameter changes and data entry can be made using the front panel rotary knob. The unit generates superb quality waveforms with high signal precision and stability. It provides sine & square wave outputs over the frequency range from 0.1 Hz to 20 MHz in one extended range (triangle/ramped wave outputs to 2 MHz). A full range of triggering capabilities is available, including internal-external trigger source and gated modes of operation.

- 20MHz Frequency Range (sine & square only)
- Sine, Square & Triangle
- Modulation in both AM & FM
- Lin or Log Sweep Function
- Adjustable Duty Cycle
- Adjustable DC Offset
- Bright Informative LCD

Model	4040DDS
FREQUENCY CHARACTERISTICS (STANDARD WAVEFORMS)	
Sine	0.1Hz to 20MHz
Square	0.1Hz to 20MHz
Triangle , Ramp	0.1Hz to 2MHz
Accuracy	0.01 % (100 ppm)
Resolution	4 digits or 10mHz
OUTPUT CHARACTERISTICS	
Amplitude Range	10mV to 10Vp-p into 50Ω
Resolution	3 digits (1000 counts)
Amplitude Accuracy	± 2% ± 20mV of the programmed output from 1.01V- 10V
Flatness (for sine wave at 5 Vp-p into 50 Ω)	0.5 dB at 1MHz, 1 dB to 20 MHz
Offset Range	± 4.5V into 50Ω, depending on the Amplitude setting
Offset Resolution	10 mV with 3 digits resolution
Offset Accuracy	± 2% ± 10mV into 50Ω
Output Impedance	50Ω
Output Protection	The instrument output is protected against short circuit or accidental voltage practically available in electronic laboratories, applied to the main output connector
WAVEFORM CHARACTERISTICS	
Harmonic Distortion (for sine wave at 5 Vp-p into 50 Ω)	0-20KHz, -50 dBc, 20KHz-100KHz, -45dBc 100KHz-1MHz, -40 dBc, 1MHz-20MHz, -30 dBc
Spurious	DC-1MHz, <-55 dBc
Square Rise/Fall Time	< 20ns (10% to 90%) at full amplitude into 50Ω
Variable Duty Cycle	20% to 80% to 2MHz for Square and 10%-90% for Triangle
Symmetry at 50%	< 1 %
OPERATING MODES	
Continuous	Output continuous at programmed parameters.
Triggered	Output quiescent until triggered by an internal or external trigger, then one waveform cycle is generated to programmed parameters, up to 2MHz
Gate	Same as triggered mode, except waveform is executed for the duration of the gate signal. The last cycle started is completed.
Trigger Source	Trigger source may be internal, external or manual. Internal trigger rate 10us to 10s.
MODULATION CHARACTERISTICS	
Amplitude Modulation	
Internal	Sine signal of 1000Hz Variable modulation from 0% to 100% in 1% steps
External	5 Vp-p for 100% modulation, 10KΩ input impedance, DC to 20KHz bandwidth.
Frequency Modulation	
Internal	Sine signal of 1000Hz
External	5 Vp-p for 100% deviation, 10KΩ input impedance, DC to 20KHz bandwidth.
SWEEP CHARACTERISTICS	
Sweep Shape	Linear and Logarithmic, up or down
Sweep Time	10 ms to 50 s.
INPUTS AND OUTPUTS	
Trigger In	TTL compatible. Max. rate 2MHz. Minimum width 50ns.
Sync Out	TTL pulse at programmed frequency, 50Ω source impedance.
Modulation IN	5 Vp-p for 100% modulation . 10KΩ input impedance. Dc to >20KHz minimum bandwidth.
GENERAL	
Dimensions (WxHxD)	8.4" x 3.5" x 8.3" (213mm x 88mm x 210mm)
Weight	5.5 lbs. (2.5 Kg)
Power	90V-264V, 30 VA max
Temperature	
Operating	0ºC to +50ºC,
Non-operating	-10ºC to +70ºC
EMC	According to EN55011 for radiated and conducted emissions.
Electrical Discharge Immunity	According to EN55082
Safety Specifications	According to EN61010
	Three Year Warranty
Supplied Accessories	Manual and Power Cord
Optional Accessories:	TLFG Kit

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