

TEKTRONIX

DG2030

The Tektronix DG2030 is a high-performance Data Pattern Generator designed for testing high-speed logic devices and digital circuits. Operating at data rates up to 409.6 Mb/s with 256 Kwords of memory depth per channel, it delivers precise control over digital output parameters, including variable delay, output levels, and rise/fall times. It is ideal for logic characterization, digital functional verification, and automated test equipment (ATE) applications.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488.2), RS-232-C
Display	9.5-inch Color TFT LCD, 640 × 480 pixels

Physical

Power Supply	90 V to 250 V AC, 48 Hz to 63 Hz, 300 W max
Operating Temperature	10 °C to 40 °C °C
Dimensions (W×H×D)	362 mm × 185 mm × 490 mm mm
Weight	10.5 kg kg

Pattern and Channel Specs

Number of Data Output Channels	4 (standard), expandable to 8 (with Option 01)
Maximum Data Rate	409.6 Mb/s
Minimum Data Rate	0.1 b/s
Pattern Memory Depth per Channel	256 Kwords (262,144 words)
Data Formats	NRZ
Channel-to-Channel Deskew Range	-2.5 ns to +5.0 ns
Channel-to-Channel Deskew Resolution	10 ps (0.01 ns)

Signal Levels and Electrical Characteristics

Output Connector Type	SMB
Output Impedance	50 Ω
Output Voltage High Level Range	-1.25 V to +3.50 V (into 50 Ω)
Output Voltage Low Level Range	-1.50 V to +3.25 V (into 50 Ω)
Output Amplitude Range	0.10 Vp-p to 4.75 Vp-p (into 50 Ω)
Voltage Level Resolution	5 mV
Output Rise Time (20% to 80%)	≤ 800 ps
Output Fall Time (20% to 80%)	≤ 800 ps
Output Tristate Control	High impedance (Hi-Z) selectable via inhibit or pattern data

Clock and Timing Parameters

Internal Clock Frequency Range	0.1 Hz to 409.6 MHz
Internal Clock Frequency Resolution	4 digits
Internal Clock Frequency Accuracy	±10 ppm
External Clock Input Frequency Range	10 Hz to 409.6 MHz
External Clock Input Impedance	50 Ω
External Clock Input Connector	BNC (rear panel)
External Clock Input Threshold Range	-2.5 V to +2.5 V
External Clock Input Resolution	0.1 V
External Clock Input Minimum Pulse Width	1.2 ns
External Reference Clock Input (10 MHz)	BNC, 10 MHz, 1.0 Vp-p to 5.0 Vp-p, 1 k Ω
Reference Clock Output	BNC, 10 MHz, >1.2 Vp-p into 50 Ω
Clock Output Connector	SMB

Sequencer and Triggering

Maximum Number of Sequence Steps	4096
Maximum Loop Count	65536 (or infinite)
Sequence Nested Loop Levels	4
External Trigger Input Connector	BNC (rear panel)
External Trigger Input Impedance	10 k Ω
External Trigger Input Threshold Level	-2.5 V to +2.5 V
External Trigger Input Resolution	0.1 V
Minimum External Trigger Pulse Width	15 ns
Event Input Connector	SMB (rear panel)
Event Input Impedance	1 k Ω
Event Input Threshold Level	-2.5 V to +2.5 V
Sync Output Connector	SMB
Sync Output Voltage Level	>1.0 V into 50 Ω

System Connectivity and Interfaces

GPIO Interface	IEEE-488.2 compliant
RS-232C Port	D-sub 9-pin
External Storage Medium	3.5-inch Floppy Disk Drive (2HD/2DD, DOS format)
Command Language	SCPI compatible

User Interface and Display

Display Type	Color TFT LCD
Display Size	9.5-inch
Display Resolution	640 × 480 pixels
Built-in Editor Tools	Graphic pattern editor, table editor, block copy/paste, shift, invert

Power Specifications

AC Input Voltage Range	90 V to 250 V AC
AC Line Frequency Range	48 Hz to 63 Hz
Power Consumption	300 W max

Environmental and Physical Attributes

Operating Temperature Range	+10 °C to +40 °C
Storage Temperature Range	-20 °C to +60 °C
Operating Humidity Range	20% to 80% RH (non-condensing)
Storage Humidity Range	5% to 90% RH (non-condensing)
Maximum Operating Altitude	3000 m (10,000 ft)
Maximum Non-Operating Altitude	12,000 m (40,000 ft)
Warm-up Time	20 minutes
Unit Width	362 mm
Unit Height	185 mm (with feet)
Unit Depth	490 mm
Unit Weight	10.5 kg

Compliance and Safety

Safety Certifications	UL1244, CSA22.2, EN61010-1
Electromagnetic Compatibility (EMC) Standards	EN55011, EN50082-1

Performance

Internal Clock Jitter	< 50 ps rms (at 400 MHz)
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Inhibit Input

Inhibit Input Connector	BNC (rear panel)
Inhibit Input Impedance	1 kΩ
Inhibit Input Threshold Level	TTL compatible (High: >2.0 V, Low: <0.8 V)
Inhibit Input Minimum Pulse Width	10 ns

Connectivity

GPIO Interface Functions	SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, C0, E2
Printer Port	Centronics parallel (DB-25)

Environmental

Operating Vibration	0.27 Grms, 5 Hz to 500 Hz
Non-operating Vibration	2.28 Grms, 5 Hz to 500 Hz
Operating Shock	294 m/s² (30 G), half-sine, 11 ms duration

Clock Sweep

Frequency Sweep Range	100 Hz to 400 MHz
Frequency Sweep Modes	Linear, Logarithmic
Frequency Sweep Time Range	1 ms to 1000 s

Setup Storage

Internal Setup Memory	3 configurations
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Clock Output

Clock Output High Level Range	-2.0 V to +2.0 V (into 50 Ω)
Clock Output Low Level Range	-2.0 V to +2.0 V (into 50 Ω)
Clock Output Resolution	0.1 V
Clock Output Rise and Fall Time	≤ 1.5 ns (20% to 80%)

Pattern Memory Architecture

Minimum Block Size	8 words
Block Size Increment	8 words
Maximum Number of Blocks	2048

Options

Rackmount Kit	Option 1R
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TECHNOLOGY

Data Pattern Generator

APPLICATIONS

Logic device characterization, digital circuit design, functional testing, and high-speed digital logic testing

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