FEATURES

- (11) Channel, 2.5 GS/sec per Channel.
- Voltage Swing: 0V to 2V into 50 ohms.
- 8 MPoints/Chan (8,388,608).
- Full scale Trise/Tfall = 250 picoseconds (typ)
- Internal/External Trigger
- 1ppm Internal Clock Stability, < 3psec Jitter
- Internal Master Clock, 25 MHz to 2.5 GHz
- Programmable segmentation size, trig, looping, etc.
- Alum Box 5.3" x 5.3" x 1" with USB, Pwr Brick.
- Software GUI and API for Windows XP, Windows 7/10 (32-bit/64-bit), and others (email).

APPLICATIONS

- FPGA Testing
- Memory Testing
- High Resolution Timing
- Multi-Instrument Synchronization
- Embedded Microprocessor Testing
- General Purpose I/O Testing

DESCRIPTION

General

The 11 channel, 2.5 GSPS, DPG11 is a highly versatile PC controlled Digital Pattern Generator. It incorporates many advanced features such as programmable segment sizes, looping, and individual segment triggering. It also has unique output drivers that can produce extremely clean LVTTL signals with 250 picoseconds rise/fall times into 50 ohm loads.

The high speed Digital Outputs can be clocked internally or externally (opt.). The on-board clock source uses an extremely stable oscillator (1ppm) with ultra-low phase noise (1 psec rms). These specs combined guarantee that the generator will produce what you expect so you can concentrate on your application.

Also, the timing resolution of 400 psec along with the programmable clock rate allows you to create a stress test for almost anything.

Triggering

The DPG11 board can be triggered by a TTL signal, pulsed PECL, or software command. Looping can be set for continuous or under user program control.

Memory

The DPG11 comes standard with 8 Mega-Samples of independent memory PER channel. Segment size controls are common to all channels.

GUI Interface and SDK

The DPG11 comes with a GUI program that can perform tasks like loading waveforms from a file to generating various digital patterns, changing clock rates, triggering etc. The user programming interface for the DPG11 is a simple DLL that uses C type software calls that are compatible with most software development tools.
**SPECIFICATIONS**

**Digital Outputs:** (11) Data

**Digital Inputs:** (1) Trigger, (1) 10MHz Ref / optional Ext. Clock

*(T=25°C unless otherwise stated)*

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<tr>
<th>Parameter</th>
<th>Conditions/other</th>
<th>Typical Values</th>
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<tr>
<td>Vertical Resolution</td>
<td>Fclk = 2.5 GHz</td>
<td>0V or 3.0V</td>
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<tr>
<td>Output Impedance/Coupling</td>
<td></td>
<td>50 ohms / DC Coupling</td>
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**Amplitude**

(11) Fixed outputs Fclk = 2.5GHz

0V to 2.0V swing typical single-ended into 50 ohms (SMA connectors)

**Rise Time** (20-80%, no filters)

250 psec typical into 50 ohms

**Fall Time** (20-80%, no filters)

250 psec typical into 50 ohms

**Internal Clock Jitter**

< 3 psec typical

**Delay between trigger and output**

36 ns typical @ 2GHz

**Maximum re-trigger rate**

2 MHz

**Internal Clock Rate Generator**

Frequency range

25 MHz to 2.5 GHz

Resolution

< 10 KHz (typ.)

Stability

T = 0°C – 70°C +/- 1 ppm

**Memory**

Waveform Base Model

8 MWords x 11 Channels

**TTL Trigger Input**

Rising Edge Retriggerable SMA connector, DC coupled, Threshold=1.0V, 50 ohms.

**ENVIRONMENTAL (DAx12000)**

**Temperature**

Operating 0°C to 50°C Ambient

Non-operating -40°C to 85°C

**Humidity**

Operating 20% to 80% (no condensation)

Nonoperating 5% to 95% (no condensation)

**Power**

+5V TBD Watts @ 2MWords Typical Not Active

TBD Watts @ 2 MWords Typical Active

**Size**

DPG11-8M L=5.30", W=5.3", H= 1.0" (Alum Box)

**DIGITAL INPUTS:**

Ext. Clk Input

(custom Option) 50 ohms SMA inputs: 100 MHz to 2.0 GHz, square Wave, 0dBm-10dBm, AC coupled.

**ORDER INFORMATION**

<table>
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<tr>
<th>Model Number</th>
<th>Description</th>
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<tr>
<td>DPG11-8M*</td>
<td>11-Ch, 2.5 GSPS Digital Pattern Generator w / 8 MEG Memory/Ch</td>
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