The Dimatix Modular Fire Pulse Generator is an 8-channel, high-voltage DC pulse generator suitable for use with all Dimatix printheads and jetting assemblies.

The Modular Fire Pulse Generator is an 8-channel, high voltage DC pulse generator that provides the fire pulses needed to actuate piezoelectric elements in Dimatix printheads and jetting assemblies.

The MFPG controller drives up to 8-channels via separate power amplifier cards. Each power amplifier card is a separate fire pulse generator capable of driving 1024 jets, depending on the drive voltage and other usage parameters. The power amplifier card can produce fire pulse amplitudes up to 112 volts at firing frequencies up to 35 kHz. The fire pulse amplitude for each channel can be independently adjusted, while the fire pulse timing for all channels is driven by a common pixel clock.

Power distribution, serial data programming, signals display line, housekeeping and fire pulse outputs are routed through the logic board. Control and status communication is via a serial COM port using the identical protocol to the Head Drive Electronics Module (HDEM) used in the Apollo II Printheads Support Kit.

The MFPG controller is a compact, low cost and powerful fire pulse generator module that is easily integrated into a system. The powerful amplifier drives a fire pulse with no discernable signal degradation to a printhead or jetting assembly up to 10 meters or 35 feet away.

Features:
- Provides up to 8 separate channels of fire pulse outputs
- Each output channel can drive up to 1024 jets
- Programmable fire pulse amplitude, from 40 to 112 V
- Programmable fire pulse rise and fall times, from 1.2 to 4 microseconds
- Fire pulse frequency up to 35 kHz
- Same serial control protocol as the Apollo II HDEM
- Compact design
### Product Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>MFPG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum fire pulse frequency</td>
<td>35 kHz</td>
</tr>
<tr>
<td>Trapezoidal fire pulse</td>
<td>Programmable amplitude, width, rise/fall times</td>
</tr>
<tr>
<td>Power input</td>
<td>12 volts dc, 3 amps/120 volts dc, 2 amps</td>
</tr>
<tr>
<td>Communication</td>
<td>RS-232 (RS-485) serial communication (Same protocol as Apollo II HDEM)</td>
</tr>
<tr>
<td>Outputs</td>
<td>8 channels via separate amplifier cards</td>
</tr>
<tr>
<td>Load</td>
<td>20 watts/channel</td>
</tr>
<tr>
<td>Cable distances</td>
<td>Up to 1.5 meters [5 ft.]</td>
</tr>
<tr>
<td>– Logic board to amplifier</td>
<td>Up to 2 meters [6.5 ft.] [Twisted pair, 18 awg]</td>
</tr>
<tr>
<td>– Amplifier to printhead</td>
<td>Up to 10 meters [35 ft.] [Coax cable]</td>
</tr>
<tr>
<td>Max fire pulse amplitude</td>
<td>112 Vdc for 20 Watt</td>
</tr>
<tr>
<td>Programmable fire pulse amplitudes</td>
<td>from 40 to 112 V</td>
</tr>
<tr>
<td>Programmable fire pulse rise and fall times</td>
<td>from 1.2 to 4 microseconds</td>
</tr>
</tbody>
</table>

### Physical Dimensions

**MFPG Controller**
- Dimensions:
  - Width: 203 mm [8 in.]
  - Length: 178 mm [7 in.]
  - Depth: 45 mm [1.75 in.]
- Approximate Weight: 0.36 kg [12.7 oz]

**Power Amplifier**
- Dimensions:
  - Width: 102 mm [4 in.]
  - Length: 102 mm [4 in.]
  - Depth: 64 mm [2.5 in.]
- Approximate Weight: 0.22 kg [7.7 oz]

### Functional Diagram

![Functional Diagram](image)

Product data presented above are for guideline purposes only. For design and engineering work using this product, please contact Dimatix Technical Support for the appropriate Product Manual containing full Product Specifications.

---

**Dimatix**

FUJIFILM Dimatix, Inc.

109 Etna Road

Lebanon, NH 03766

USA

Tel: (603) 443-5300

Fax: (603) 448-9870

Email: info@dimatix.com

---

**Corporate Office:**

FUJIFILM Dimatix, Inc.

2230 Martin Avenue

Santa Clara, CA 95050

USA

Tel: (408) 565-9150

Fax: (408) 565-9151

Email: info@dimatix.com

---

**New Hampshire Facility:**

FUJIFILM Dimatix, Inc.

109 Etna Road

Lebanon, NH 03766

USA

Tel: (603) 443-5300

Fax: (603) 448-9870

Email: info@dimatix.com

---

**Japan Office:**

Advanced Marking Business Division

FUJIFILM Corporation

Midtown West, 7-3, Akasaka 9-Chome

Minato-ku, Tokyo 107-0002

Japan

Tel: +81 3 6271 1091

Fax: +81 3 6271 1165

E-mail: front.ambd@fujifilm.co.jp

---

**European Office:**

European Office:

Tel: +44 7739 863 525

Fax: +44 870 167 4328

Email: euro@dimatix.com

---

**China Office:**

Korean Office:

Tel: +82 2 6242 6012

Fax: +82 2 6247 6012

Email: korea@dimatix.com

---

**www.dimatix.com**

---

**Product Data**

**Modular Fire Pulse Generator**

**PDS00051 Rev. 02  04/01/10**