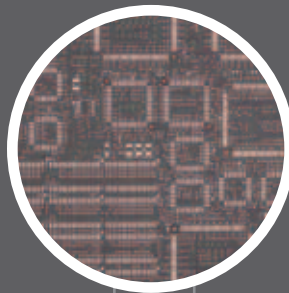


# DAPC

DYNAMIC & PROTO CIRCUITS INC



MANUFACTURING INNOVATION



## CORPORATE HISTORY

Founded in 1974, as Dynamic Circuits we mainly served customers with production volume demands. We soon found that the market also had strong requirements for quick-turn-around and prototype circuit boards that led to the formation of Proto Circuits in 1979.

In 1987, the continued growth of the firms enabled the new ownership to provide a solid technical and financial foundation for further advancement of the company. Dynamic & Proto Circuits Inc was born to fill the ever-increasing demand for our products in both production and prototype volumes. 1996 saw the firm move into a purpose-designed, state-of-the-art facility. Strategically situated in Southern Ontario, our manufacturing plant is midway between Toronto, Ontario and Buffalo, NY. Our location serves Canadian, U.S. and internationally based

customers with high-quality products, prompt delivery and engineering support.

Today, DAPC has been in business for **over 30 years** and is a leading manufacturer of technologically advanced, multilayer boards for use in electronic equipment. Being financially independent allows us to continually reinvest in new equipment and process enhancements. Dynamic & Proto Circuits Inc continually meets customers' growing design demands with a superior range of in house processes and engineering design tools. This allows us to provide the simplest double-sided to the high complexity 36 layer boards. Markets served include commercial, industrial, medical, computers, communications, aerospace and defense. DAPC reviews all designs for manufacturability.

## MARKETS SERVED

INDUSTRIAL

AEROSPACE

MILITARY

COMMERCIAL

MEDICAL

COMPUTER

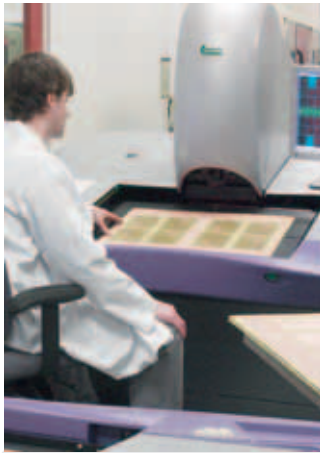


**Our facilities were opened in 1996 to meet the growing demand for high-quality, complex boards.**

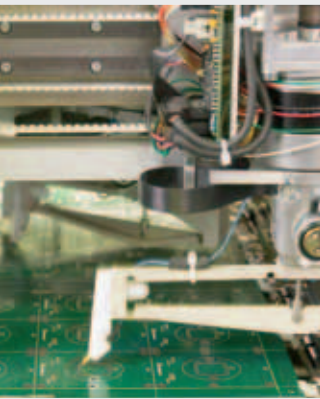
*Advanced state-of-the-art equipment enables production of complex multi-layer boards up to 36 layers.*



*In process Automated Optical Inspection monitors production quality.*



*Testing Bare Boards with Flying Probes and Netlist ensures circuit integrity.*



## OVERVIEW OF FACILITY

As a leading manufacturer of high reliability and quality Printed Circuit Boards, the company's comprehensive line includes double-sided boards, complex multi-layers, backplanes, heatsinks and a variety of special materials as well as SMT and Finline Technology.

**Our capacities range from small quantities of Fast Turn-Around Prototypes (2-10 days) to standard production runs with delivery times of 4 to 6 weeks.**

Our environmentally conscious manufacturing facility has in excess of 54,000 sq. ft. and keeps with our practices of production optimization and process efficiency. The 80% air conditioned manufacturing floor and environmentally controlled clean rooms for all our photo areas continue to contribute to an optimum working environment that maximizes the operator's efforts. All chemicals and plating processes are continuously reviewed so that our operation is a good neighbour to the environment and the surrounding community. All water and chemicals are treated or recycled to meet or exceed governmental environmental standards.

The company continues to make substantial investments in capital equipment to meet market requirements for increasingly complex PC Boards with the highest quality standards. This includes the installation of a comprehensive front-end CAM system (Leading PCB design software), state-of-the-art AOI (Automated Optical Inspection) equipment, TDR meter, photoplotter and plasma etch units.

## CAPACITIES

PROTOTYPES AND PREPRODUCTION 2 – 10 DAYS

PRODUCTION 4 – 6 WEEKS

## CORE VALUES

Dynamic & Proto Circuits Inc is committed to the continuous improvement of its manufacturing systems and support processes with the objective of providing our customers with the highest level of service.

## EXPERTISE

Dynamic & Proto Circuits Inc has manufactured printed circuit boards for over 30 years with three criteria in mind – efficiency, reliability, and capability.

We achieve maximum efficiency by combining advanced know-how with state-of-the-art

technology; reliability, by working consistently to meet, or surpass stringent testing regulations and IPC industry standards; and capability by expanding our facilities and areas of expertise to meet customers' growing demands for a superior range of products from simple to highly complex boards. What's more, we deliver on time, every time.

As a leading manufacturer of printed wiring products, DAPC continues to offer double-sided, backpanel and high layer count multilayer boards in various base materials for Prototype, Q.T.A and Production runs.

Our delivery, service and product performance is enhanced by:

*Focusing on the reduction of variation in our processes*

*Continuing to acquire superior equipment and facilities*

*The adherence to established production schedules is one of our top goals.*

*Both our company and our products are efficient, reliable, and dependable.*

*Our product meets your needs, our people anticipate them.*



Quality is assured by the integrity and resolution of our phototools.



*Our minimum drilling capacity is 0.004"*



*We are proficient with a wide range of solder mask technologies including liquid photo-imageable and dry-film aqueous.*



*We team the best people with the best equipment.*

## SERVICES

Due to our diversified manufacturing and engineering capabilities, we can offer the following:

- **Typical Quick Turn Around (Q.T.A) in 2 to 10 days**
- **Tetrafunctional FR-4, Polyimide, BT-Epoxy and Teflon base materials**
- **Mix Material**
- **Custom heat sink bonding**
- **Metal core**
- **Controlled impedance technology (including differential)**
- **BGA, Micro-BGA**
- **Buried and blind vias**
- **0.016" pitch S.M.T., and 0.003" lines and spacing in various surface finishes including tin, nickel, gold, silver, organic coating and horizontal hot air solder leveling**
- **Complete in-house capabilities**
- **An ISO 9001 and MIL-PRF-31032 Certified Quality System**

While components and craftsmanship establish a board's efficiency, a company's productivity level is determined by years of staff experience, our core competency as well as technology. That's why, DAPC is committed to maintaining & continuously training the best PCB people in the industry and utilizing the most advanced equipment and engineering processes available.

We understand that by giving people the right tools that maximum efficiency and quality is achieved. DAPC delivers average Quick-Turn-Around times of two to ten days, and standard production runs times of four to six weeks.

Also, to improve production accuracy and reduce variation, Statistical Process Control (SPC) techniques are utilized throughout our plant with all boards inspected at strategic points, then electronically tested before shipment. Design data is scrutinized before manufacturing begins, plus knowledgeable staff members work closely with clients to produce prototype boards for test run or low to medium volume production runs.

## QUALITY COMMITMENT

Our continuous quality improvement program, also referred to as the quality management (QM) program, includes the regular monitoring of product characteristics and process variables. It is such activities that fall within the scope of the SPC program, which is a central part of the QM program and integrates functions like product engineering, purchasing, fabricating, inspecting and testing.

DAPC has initiated a QM process leading to real-time monitoring of the main manufacturing processes variables. The selection of these variables is done through statistically designed experiments. The measuring of the variables takes place with in-house-calibrated test and measurement equipment, as well as external testing labs. Results are reviewed and processes are improved.

As a result, the conscientious efforts of all our associates and investment yielded our ability to manufacture PCB's to the following industry standards:

ISO 9001:2000

MIL-PRF-31032

MIL-PRF-55110

UL 796

## LEAD FREE

***DAPC is fully equipped to manufacture your PCB design to the International RoHS Standards.***

### ***Lead Free: What does this mean?***

“Electrical and Electronic products and/or components produced without the intentional use of lead in any raw materials, processing or assembly.”

Due to new legislation requirements of the European Union, DAPC now meets all Lead Free manufacturing requirements.

### ***The two new EU legislation requirements include:***

**RoHS** – Restriction of the use of certain Hazardous Substances for the Electrical and Electronic Equipment. It is a directive to remove six banned substances in electrical and electronic equipment and to contribute to the environmentally sound recovery and disposal of waste electrical and electronic equipment.

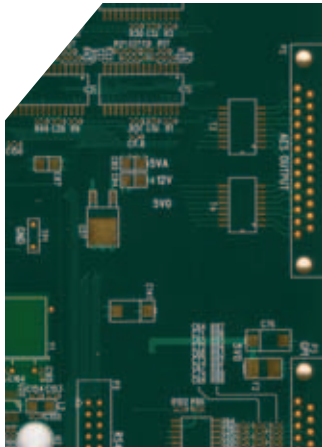
**WEEE** – Waste Electrical and Electronic Equipment Directive for components containing lead will have to be removed from any end of life electrical and electronic equipment that is destined for a landfill, incineration or recovery.

In keeping with the WEEE directive DAPC complies with the labeling of products and with their material content levels. Surface finishes and all manufacturing materials are available to manufacture your Lead Free PCB today.



**Substantial investments in capital equipment allows us to meet market requirements for increasingly complex PC boards.**

*Surface finishes and manufacturing materials are available to build your Lead Free PCB today.*



*Years of experience are going into pre-production activities.*



*Our modern metallurgical laboratory verifies conformance with specifications.*



## **CLASS 3/MILITARY CERTIFICATION**

DAPC was the first company in North America to achieve the stringent MIL-PRF-31032. This manufacturing qualification is still limited throughout North America. The company's quality control procedures and process controls are outlined in comprehensive manuals. All work meets or exceeds industry & military standards, including AQAP-4 and MIL-1-45208. A substantial part of the company's production are boards manufactured to MIL-P-55110 (GF and GI) standards and U.L. compliance. DAPC has successfully implemented the International Quality System ISO 9001:2000, which has been registered by QMI.

### **Our certifications include:**

- IPC-6012**
- IPC-A-600**
- MIL-PRF-31032**
- MIL-PRF-55110 (by virtue of 31032)**
- ISO 9001:2000 – International Standard Quality**

### **Systems**

- IPC-2221**
- IPC-6016**
- IPC-6018**
- Bellcore TR78**

DAPC is ITAR (International Traffic in Arms Regulations, USA) Certified.

DAPC is also registered under the Controlled Goods Registration Program (CGRP). This is a Canadian Nationwide Security Plan that has been sanctioned by the US Department of State. Only Canadian PCB companies registered under this program can build printed circuits boards (controlled goods) for US Defense items controlled by ITAR. This is known as the Canadian Exemption to ITAR. US companies are not required to have an export license to send data and prints to Dynamic & Proto Circuits, nor are they required to have an import license for the incoming product. US companies must however be registered under ITAR and provide to DAPC the approval document.

This ITAR Canadian Exemption is listed under section 126.5 of the ITAR. For more information on ITAR please visit [www.pmdtc.org](http://www.pmdtc.org).



**Dynamic & Proto Circuits Inc**

869 Barton St  
Stoney Creek, Ontario  
L8E 5G6

**Tel: 866.643.9900**

Tel: 905.643.9900

Fax: 905.643.9911

Email: [dynamicinfo@dapc.com](mailto:dynamicinfo@dapc.com)

[www.dapc.com](http://www.dapc.com)