



CYGNUS

Electronics Corporation

www.cygnuscorp.com





Cygnus Electronics at a glance

Incorporated in 1996, Cygnus Electronics Corporation is one of the leading Electronic and Cables Manufacturing Services companies in North America.

Our manufacturing and design facility occupies 30000 square feet and is headquartered in the Greater Toronto Area which allows us to service the North American and European markets with efficiency.

Using our state of the art facilities, Cygnus provides a broad range of services including turn key, prototype, design, testing, component recovery and repair just to name a few. Our customers include Original Equipment Manufacturers(OEM), Value-Added Resellers(VAR) and Industrial users.

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Cygnus Electronics Contract Manufacturing Services

Cygnus manufactures a wide range of electronic printed circuit boards from 0201 to BGA's, MicroBGA and Through Hole Assemblies in the industrial, medical, and computer sectors.

All of our manufacturing specialists are **IPC** certified, earning certificates in electronic assemblies such as IPC-A-610C (class levels 1,2, and 3). Cygnus' goal is to provide quality products to the marketplace using stringent quality controls. As a company we are striving to accomplish this by:

- Meeting and exceeding industry standards
- Quality product design
- Customer service
- Superior Performance

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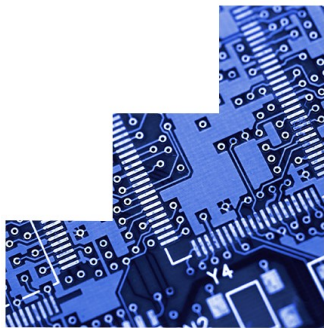


To 'Make' or to 'Buy' that is the question

One of the biggest strategic decisions facing any business is whether to outsource manufacturing operations. We recognize this and have attempted to develop a process to ensure that the transition to an outsourced model is transparent, seamless, and trouble-free.

Over many years, Cygnus Electronics has developed a partner program which works for companies contemplating outsourcing as well as those companies which have already taken the decision to outsource their electronic manufacturing requirements.

Our partner program is designed to ensure we move at the pace with which our customers are comfortable, resulting in an efficient transfer of production activities.



Are you a design company looking for an electronics manufacturer?

The selection of your contract manufacturing partner needs very careful consideration. At Cygnus Electronics we have extensive experience of working with companies like yours which focus on design as their core competence.

As a result of providing electronics manufacturing services for over 10 years, we understand what you need from a manufacturer, and the key role that we can play in adding value to your business.

As a result, we have developed a suite of added value services aimed at:

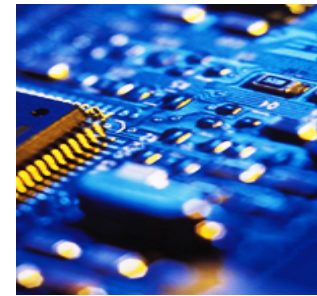
- Reducing time to market
- Designing cost out of the manufacturing process
- Providing peace of mind for you and your stakeholders

Are you looking to outsource a family of products?

As an experienced user of contract electronic manufacturing services you will be aware of the added value benefits that using a specialist company such as Cygnus can bring to your business.

However, we are no ordinary EMS provider. We have a track record in providing electronic manufacturing services to customers in the high technology sector, where product reliability is a pre-requisite. This includes the industrial, medical, and computer sectors.

Cygnus Electronics is able to co-exist with your own factory, manufacturing specific families of products which could free up your factory to focus on the products which are best suited to your current needs.



Are you happy with your existing EMS Provider?

We aim to build long-term strategic relationships with our customers. Business relationships between manufacturing partners and their customers can break down from time to time for a variety of reasons. At Cygnus Electronics, we try to minimize these situations by ensuring the relationship is built upon solid foundations from the outset.

In the real world, problems do arise from time to time but we reduce the effect by tight account management which may flag potential problems at an early stage.

We have been honing our electronic manufacturing services for over a decade – the facts speak for themselves.



Added Value Solutions

We can provide engineering support at every stage of the product life cycle.

From the early stages we can advise on:

- Design and layout of complex multi-layered printed circuit board assemblies.
- Critical parameters for the manufacturing process.
- Design for Testability
- Vendor selection and development
- PCB finishes and process consumables
- Lead-free compatibility
- Early prototype build and design analysis
- Product returns analysis



PCB Assembly

Cygnus Electronics is a full-service contract electronics manufacturing company featuring complete solutions for Printed Circuit Board Assembly.

We can offer you:

- Fast turnaround prototyping
- DFM, DFT, and DFP first off building analysis
- High mix, low/medium volume
- Lead-free soldering capability
- 0201 to uBGA SMT placement
- AOI (Automated Optical Inspection) and X-Ray Inspection
- Through-hole PCB Assembly
- In-circuit test with up to 1024 nodes
- Analog, Digital, RF and Functional test development, operation and debug
- 24" x 24" flying probe test
- ESS vibration and pressure testing
- Workmanship to IPC-610 class 3 or MIL STD 2000 equivalent

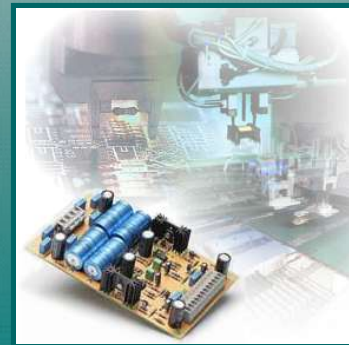


Final Product Assembly

Whether you require board level assembly only, sub-module or final product assembly.

We can provide a tailored service to:

- Assemble your printed circuit boards into finished product box assemblies
- Press-fit connectors into high-density PCBs and backplanes
- Carry out potting, encapsulation, and heat shrinking
- Carry out semi-automated wire wrapping of complex assemblies



Test Solutions

Cygnus Electronics can provide a total test solution. We use process monitoring tools, Automated test equipment, Specific To Type equipment and various early life failure screening techniques to maximize test coverage.

Our capabilities include:

- In-circuit test with up to 1024 nodes
- Vacuum, pneumatic, and mechanically actuated test fixtures, completely manufactured in-house to transform Gerber data into accurate and reliable Test fixtures for automated test equipment (ATE) and functional Bench-top testers.
- Analog, Digital, and RF Functional test equipment. Using a Fairchild Factron 303, we are able to test a large volume of assemblies in a short period of time.
- JTAG – Boundary Scan
- System Test



QA and Workmanship

We operate a dedicated in-house IPC training scheme in order to maintain consistently high levels of product quality.

To support our quality policy, we have implemented and maintained an efficient Quality Control Program, which allows us to fully comply with the requirements of ISO9001:2000. Our commitment is to consistently meet or exceed all agreed upon and contractually documented requirements for high quality and cost effective manufacturing through:

- The management team fully supporting and providing the necessary resources for the implementation and continual improvement of Cygnus' QMS (Quality Management System)
- The management team reviewing the QMS' accomplishment of objectives and its effectiveness on a regular basis. Changes are made to meet new objectives, demands, and requirements.



ISO 9001:2000

Cygnus Electronics is registered by Intertek to ISO 9001:2000.

- What does this mean for you?

Quality and Consistency – ISO registration is one of the highest marks of a quality assurance system. Cygnus Electronics can assure it's OEM's, VAR's and their clients that It's products and services will consistently meet and exceed their expectations.

- What is ISO?

International Organization for Standardization - Headquartered in Geneva, Switzerland and made up of experts from over 90 countries including Canada and the U.S., who work cooperatively to establish standards for businesses to follow in their operations. ISO 9001:2000 is the most comprehensive quality system standard.



Account Management

Outstanding service and support distinguish Cygnus as a true partner in the manufacturing process. To ensure that each customer's needs are fully met without exception, we custom-design a production process to fit their unique objectives within each of these process categories.

Rounding out our product services is Cygnus' expertise in delivering inventory management systems to optimize our OEM partner's objectives.

Cygnus' manufacturing services account team, guided by your dedicated account manager, will deliver added value above and beyond the quality of our product and procedures. It's a distinction that embodies the Cygnus business philosophy. It's a distinction you will notice when Cygnus serves as a nearly seamless extension of your own operations. A distinction that can only be achieved through a true partnership.



Lead Free Assembly

Cygnus Electronics has taken the initiative to setup a complete lead-free process; including a new wave solder lead-free machine using SN100 Alloy.

Our production staff have been trained to the IPC lead free standard by EPTAC (Electronic Process Training and Consulting Corporation).





Test Fixture

Cygnus Electronics can provide a total test solution. We use process monitoring tools, Automated test equipment, Specific To Type equipment and various early life failure screening techniques to maximize test coverage.

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Cygnus Electronics's ability to Manufacture test fixtures , whether Functional or In Circuit test fixture from the ground up helping OEMs achieving over 99.99 test accuracy. Each testing method has advantages and disadvantages ICT and FCT .

ICT excels at:

Locating manufacturing defects such as solder shorts, missing components, wrong components, and open connections.

Performing many tests without power applied to the device under test (DUT), thus avoiding most conditions that could damage an assembly.

Minimizing test programming effort as the programming consists of concatenating software component models and switching test instruments onto each part via a bed-of-nails (BON) fixture.

ICT shortcomings are:



Test fixtures tend to be expensive due to the need for an electrical connection to each electrical node of the circuit. Hundreds of spring action pins (pogo pins) are often necessary.

Usually ICT does not test continuity through connectors, so connector faults are often not identified. Functional test (FCT) verifies that a PCB assembly functions properly by providing stimulus to an assembly and verifying the response.

Functional tests are designed to assure that circuitry functions within specifications.

Testing is usually done "at speed" through DUT connectors and/or BON fixture. The number of pogo pins typically needed for a functional test fixture is significantly less than an ICT fixture.

FCT excels at:



Identifying functional defects within a printed circuit board assembly

Assessing functionality while applying marginal power supply voltage and/or current

Appraising functionality of DUT while applying a range of input stimuli amplitudes or currents

Determining DUT power consumption during operation

FCT shortcomings are:

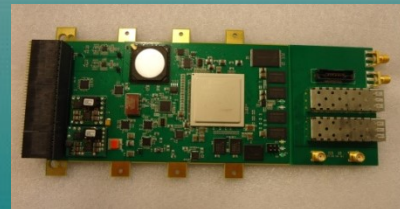
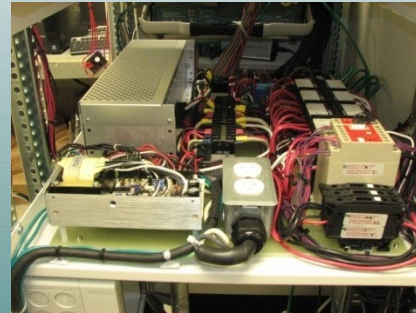
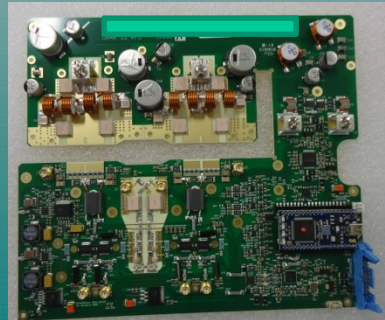
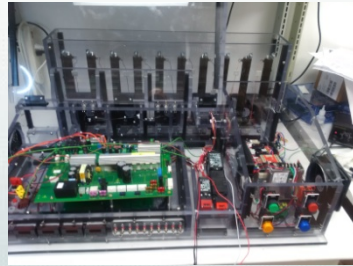
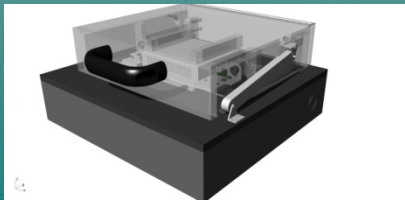
Test programs require a thorough understanding of the DUT performance, thus programming costs are typically higher than ICT. But, graphical programming significantly reduces the cost to implement functional tests.

FCT often utilizes high speed instrumentation to characterize signals from the DUT. High speed equipment is more expensive than instrumentation intended for low speed measurements.

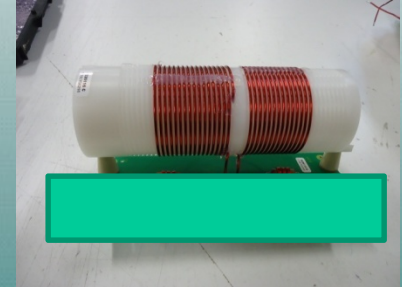
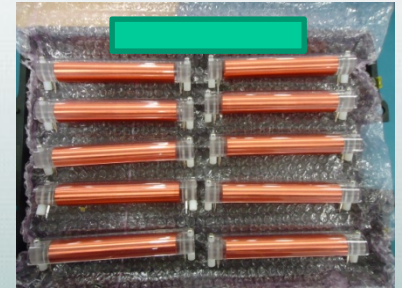
Testing through connectors can cause reliability issues as connectors wear. Bloomy mitigates this with sacrificial interposer cables.



Photo Gallery



Chokes Assembly





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