

A component level view of a typical LCD panel

THOMAS ELECTRONICS SERVICE GROUP (ESG) has been providing high quality and high yield repair solutions for Liquid Crystal Displays (LCD) to Australian and international clients since 2000.

Combining years of relevant experience with state-of-the-art equipment, Thomas ESG is the premier Australian service provider of technical support for LCD display systems and products. The company services a wide spectrum of industries including, but not limited to, defence, aerospace and bio-medical.

Thomas ESG's in-house engineering resources, coupled with state-of-the-art infra-structure, are second to none in Australia.

Specialists in LCD Repairs

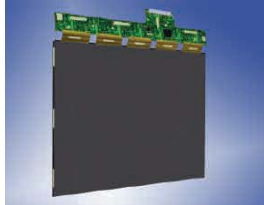
Thomas ESG procedures are developed to provide efficient results, covering all levels of repair from routine maintenance to complete overhauls. When all work has been completed the end-product is identical in form, fit and function to a new one.

Cost-effective overhauls, repairs and refurbishments are available for a wide range of LCD products and systems. A wide range of platforms and applications are supported, including consumer electronics, aircraft displays and weaponry simulators.

Specialised solutions are also available for unique client requirements.

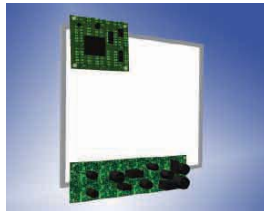
Technical Capabilities

- Tab Replacement
 - Chip on Flex (COF)
 - Chip on Glass (COG)
- Polariser replacement
- Electronic component repair
- Backlight replacement



Driver (TAB) Repairs and Replacements

When lines appear across a display panel, this usually means that there is a fault with one or more drivers (tabs) in the unit. At ESG, tab-bonding equipment enables the faulty tabs to be isolated and replaced accordingly.



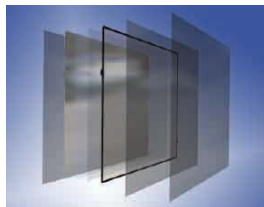
Electronic Repairs

Where faults are ascertained to be with the electronic comp the display panels, ESG is able to repair or replace the faulty el thereby refurbishing the panel back to working condition.



Backlight Replacements

In LCDs, backlights are integrated onto the edges of the display. A diffuser is placed behind the display to evenly channel illumination across the panel. Dimming or insufficient illumination is usually indicative of defective backlights in the panel. By replacing the backlights, ESG is able to refurbish the panel to its original lighting level.



Polarisers Removal and Replacements

Polarisers are thin films layered onto both sides of LCD panels. Scratches appearing on LCD panels are usually scratches etched onto the polarisers. Using state-of-the-art equipment the polarisers can be replaced and restored to new condition.



TOTAL SOLUTIONS

- Unparalleled Technical Expertise
- Comprehensive National-Wide Coverage
- Real-Time Online Service Support
- Integrated Call Centre Facilities
- Integrated Logistical Support
- Quality Assurance

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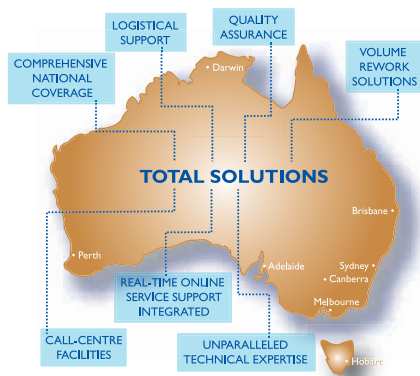
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TOTAL SOLUTIONS IN SERVICE AND REVERSE LOGISTICS



Thomas Electronics of Australia commenced operations as a manufacturer of monochrome television tubes in 1956, and has since gone on to become the Australian leader in electronic display systems and avionics engineering. Since 1990, Thomas Electronics Services Group (ESG) has been providing high quality, high yield repair for electronic display products in Australia. Today, we are the largest third-party repairer of electronic display products in the southern hemisphere, with the technical expertise and logistical infra-structure to handle high-volume repair in support of original equipment manufacturers and corporate end-users.

Combining years of experience with a good underlying knowledge of the relevant technologies, we are the premier solution provider of pre and after sales technical support for electronic display products.

- Unparalleled Technical Expertise
- Volume Rework Solutions
- Comprehensive National Coverage
- Call-centre Facilities
- Real-time Online Service Support
- Integrated Logistical Support
- Program Management
- Quality Assurance



Thomas ESG is committed to the delivery of **high volume, fast turnaround repair/analysis solutions** for defective liquid crystal display (LCD) and cathode ray tube (CRT) products, plasma displays, projectors, laptops and other electronic consumer products. In addition we also offer the following services:

1. High-volume on-site and return-to-depot rework
2. Reverse logistics management
3. New product technical support and consultancy
4. Electronic sub-assembly
5. Product testing facilities

With a clientele that includes the major original equipment manufacturers (OEM) as well as corporate and industrial end-users, Thomas Electronics Services Group is fully committed to the delivery of world class products and services.

Unparalleled Technical Expertise

At Thomas Electronics Services Group (ESG), we offer unparalleled technical expertise, integrated logistical support, comprehensive coverage and a full range of after-sales technical support.

Our repair procedures are developed to provide efficient and cost-effective results at both component and board levels. Our in-house engineering resources, honed from years of experience, coupled with state-of-the-art equipment, are second to none in Australia. The list of products that we support includes, but is not limited to:

- | | |
|---------------------|-------------------------------------|
| ■ LCD/CRT Monitors | ■ LCD TVs |
| ■ Plasma TVs | ■ DSTN |
| ■ Monochrome Panels | ■ Projectors |
| ■ Laptop Computers | ■ Personal Digital Assistants (PDA) |
| ■ Plasma Panels | ■ LCD Panels |

Our in-house engineering resources also enable us to customise repair, rework and refurbishment solutions to cater to clients with ad-hoc requirements.

To consistently maintain and upgrade the world class level of technical support and services that our clients have come to expect from us, we are constantly looking to invest in newer and better technologies and equipment. Our current facilities include a class 3.5 and class 3500 (US standards 100 and 100,000 respectively) clean room, as well as state-of-the-art equipment for LCD and plasma panel repairs.

Comprehensive Nation-Wide Coverage

Thomas ESG is the largest third party repairer of electronic display systems in the southern hemisphere, and we offer comprehensive coverage via our extensive network of satellite workshops and authorised agents all across Australia.

- Branch offices in Melbourne and Brisbane and agents in all other Australian capital cities
- Real-time computer system to provide up-to-date information on job status and inventory level
- National call-centre to co-ordinate prompt responses to service calls

Real-Time Online Service Support

Thomas ESG is committed to establishing an industrial leadership role in customer reporting. To that end, we have progressively been implementing and upgrading the ACCPAC online accounting system for use in our day-to-day operations. All jobs are tracked throughout each phase of the repair process.

The system is periodically customised for Thomas ESG's specific business management requirements and has been able to dramatically increase efficiency throughout all administration and reporting procedures.

Features include:

- Remote system accessibility for service providers and inter-state offices
- Real-time technology to provide accurate up-to-the-moment information in job status or inventory
- Refinement of workflow processes
- Automation of work and reporting processes

Automated warranty, fault analysis and service reporting can also be adapted to meet specific client requirements.

Some of the Clients Supported by Thomas ESG

- | | |
|------------------------------------|--------------------|
| ■ IBM | ■ Hewlett Packard |
| ■ Benq | ■ Sony |
| ■ AOC-TPV | ■ Eizo |
| ■ Hyundai ImageQuest | ■ Samsung |
| ■ Mitsubishi | ■ Sun Microsystems |
| ■ LG Electronics ... and many more | |

In addition, Thomas ESG is currently one of the designated support facilities for electronic display units used by the Australian Defence Force, as well as the New Zealand Defence Force.

Integrated Call-Centre Facilities

Located in our Milperra head office, the Thomas ESG call-centre is a dynamic and professional set-up designed to handle high volume service and enquiry calls.

The call-centre utilises state-of-the-art equipment for call processing, identification and routing on specified parameters. Clients can choose to have ESG act as their proxy customer interface via the call-centre, which will further enhance the support process for end-users.

Integrated Logistical Support

Thomas ESG provides a one-stop solution to cater to all after-sales support requirements of clients, including, but not limited to:

- End-user after-sales interface
- Spare parts management
- Buffer stocks management
- Returned Material Authorisation (RMA) management
- Rework and refurbishment projects
- Warehousing and inventory management
- Equipment disposition

State-of-the-Art Facilities

Clean Room Environment

- 16 sq metres of Class 3.5 (US standards 100)
- 100 sq metres of Class 3500 (US standards 100,000)
- Up to 65" LCD panels

State-of-the-Art Equipment

- Plasma screen repairs
- Tab bonding
- Polariser replacement

Quality Assurance

As part of our continual drive to deliver products and services meeting global benchmarks, Thomas ESG maintains a list of quality certifications from the various relevant industry regulators.

The following is the list of the industrial certifications currently held by Thomas ESG:

1. Société Générale de Surveillance (SGS)
 - ISO9001-2000 Certification
2. Australian Department of Defence
 - Defence Recognised Supplier - Strategic Capabilities
 - Authorised Maintenance Organisation (AMO)

Our business is the delivery of quality service and we take pride in the provision of customised and cost-efficient solutions for both OEM clients and end-user customers.

