

The Importance of Electro Static Discharge (ESD) Control in the Supply Chain

As Electronic devices have become faster and smaller, their ESD sensitivity has increased, impacting productivity and product reliability. As a consequence, sound ESD controls are required to minimise the risk of damage during handling and assembly. ESD damage is not always terminal; it often weakens a device to the point where it still passes final test, but fails shortly afterwards. ESD damage costs the electronics industry many millions of pounds a year, so effective control measures must be taken during all stages of manufacture, supply and assembly.

George McBrown, Managing Director of G&B Electronic Designs Ltd explains how they tackle the problem.

G&B is a contract manufacturer and designer operating within the Medical Devices Directive 93/42/EEC and having an ISO 13495:2003 registered quality system. We design, manufacture and CE-mark non-invasive medical products for our customers, so it's vital that we have robust ESD control procedures throughout the manufacturing process: from receiving goods into the factory, through storage, kitting, assembling, test, packing to shipping. Our ESD control programme ensures that our safe handling capability is maintained in line with the demands of the very latest product technologies. All ESD sensitive devices are processed within an electrostatic discharge protected area (EPA), where specialised equipment and processes ensure adequate product protection. Our ESD controls include the following:

- Workstations and storage shelves having dissipative surfaces connected to a common ground
- Personnel connected to ground via wrist straps
- ESD control seating, footwear and flooring
- ESD protective overalls
- All unnecessary static generators are removed from the EPA
- Entry tests for all persons entering the EPA
- Humidity control
- Regular auditing of internal processes and procedures
- Specialised training for staff on awareness of ESD principles and procedures.

To maintain effective ESD control, G&B relies on companies such as RS to supply quality products like wrist straps, bench mats, heel grounders and packaging materials as well as offering an efficient measurement instrument calibration and repair service. *[Editor's note: the full range of RS ESD handling products can be found in the catalogue Book 2, Section 34, from page 2-1870 onwards. ESD test equipment is featured in Book 4, Section 16, from page 2-446 onwards].*



G&B Managing Director, George McBrown overlooking the final assembly of Printed Circuit Boards

Clearly, the benefits of good in-house procedures are wasted if the components are received damaged; therefore, sourcing components only from approved suppliers such as RS is essential. In order for our suppliers to achieve Approved Status they must demonstrate to G&B good in-house procedures and control over their source of supply.

We do not view ESD control as an inconvenience nor as a barrier to process efficiency. It is so firmly embedded into our culture and working practices that it is now second nature to everyone involved in the procurement and manufacturing of our clients' products. ESD damage can mean the difference between a product attaining its design life or requiring repair sooner than expected. In high-reliability applications, such as medical equipment, it could mean the difference between life and death.

G&B Electronic Designs Ltd is a contract manufacturer offering Design Services from PCB and mechanical design through to prototype and volume production, and have been a customer of RS for 26 years. Our approvals extend to EN 13495:2003 covering Class 2 Medical Devices, which demands high reliability procedures to ensure the safety of patients using the medical products they make.



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RS Components Gains ESD Programme Certification for Third Consecutive Year

RS is currently the only distributor in Europe certified to the electrostatic discharge (ESD) management standard ANSI/ESD S20.20, so we are extremely proud to have recently gained re-certification for the third consecutive year from BSI Management Systems, the accredited body appointed to undertake certification on behalf of the Electrostatic Discharge Association of America.



ANSI/ESD S20.20 covers the requirements necessary to design, establish, implement and maintain an ESD control programme for activities that manufacture, process, assemble, install, package, label, service, test, inspect or otherwise handle electrical or electronic parts, assemblies and equipment susceptible to damage by ESD greater than or equal to 100V Human Body Model. In addition to ANSI/ESD S20.20, RS also complies with the requirements of the parallel European standard EN 61340-5-1.