



Considerations Regarding Repairing Test Equipment

Many changes have occurred over the past twenty years in metrology equipment and the industries that support the equipment that have impacted the owners' ability to repair their test equipment. As an inspection, measuring and test equipment (IMTE) owner, you should be aware of these forces when making equipment service decisions.

Overall, the evolution has made it more difficult to get repairs on test equipment. These changes include:

- **Technology:** Increasingly, equipment has used more advanced technology. Multi-layer circuit boards and microprocessors have replaced simpler components. While these components have superior reliability, they are easier replaced than repaired. Economically, the replacement of these expensive components is not wise and a replacement of the whole instrument may be warranted.
- **Outsourced Support:** Many companies have outsourced the support functions for their older equipment. They no longer hold the parts, equipment or procedures to support product lines they no longer sell. They typically will grant the service support to a third party or in a worst case, they make no provisions for support.
- **Equipment Cost:** A larger portion of IMTE requiring service is inexpensive test equipment used in production operations by production personnel. This was an inevitable result of process controls and quality programs instituted over the past twenty years (SPC, ISO 9001, etc.). Beyond fuses or batteries, the cost of repairing these items usually exceeds the cost of replacing the unit.
- **Immediacy:** Most companies do not maintain float equipment, that equipment that can be shared within the company when equipment is out for service. Just-In-Time, FIFO and all the other forces that drive a company to ship yesterday means you cannot wait for equipment to return. Vendors and resellers are willing to ship test equipment overnight to meet your more urgent schedule.
- **Knowledge gap:** A knowledge gap exists for accomplishing repairs. While skilled technicians do remain, a flood tide of forces is making it difficult to obtain the knowledge to accomplish the repairs. These forces include the mergers/acquisitions and eliminations of many historical providers; the downsizing and changes in their workforces; the inability to provide electronic documents on forty year old designs; the exporting of the design and manufacture of the equipment; the adoption of company policies that calibration and repair information is proprietary; wholesale elimination of product lines within companies; and the smaller number of top technical people being spun off from the military. All these forces contribute to a widening gap in providing repair support.
- **Societal changes:** Any observer can see that we are a throw-away society. No matter how much we recycle, we no longer repair TVs when we can pick up a superior model at 75% of the cost of the original unit. These same forces are in effect in the IMTE marketplace. On nearly half the quotes we obtain for major replacement parts, we get quotes advocating replacement of the whole instrument provided without even asking.
- **Used equipment market:** The advent of EBay and many other used equipment vendors and equipment rental firms means that replacement equipment is readily available. This has impacted the repair market.
- **Equipment variety:** A metrology lab fifty years ago could have a handful of instruments, which is not the case today. The variety of equipment and the required parts to support is a challenge for many. This is reflected in the fewer number of service centers run by the major IMTE manufacturers. Maintaining parts for antiquated technologies is not the business they support.