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* Averages, medians, 25th percentile and 75th percentile data are shown for most measurements. Each set of detailed results includes the subjects listed on following two pages.
Measurements Covered in this Study

Production
- Percentage of components placed that were:
  - SMT
  - PTH
- Inventory accuracy as a percentage of components on hand:
  - SMT components
  - PTH components
- Product types produced (percent of responding companies)

Quality Control
- Percentages of products utilizing assembly inspection methods:
  - Automated optical inspection (AOI)
  - Automated x-ray inspection (AXI)
- Percentages of products utilizing electrical assembly test methods:
  - In-circuit test (ICT)
  - Manufacturing defects analyzer (MDA)
  - Flying probe
  - Boundary scan
  - Final functional test
- Average first-pass yields:
  - In-circuit test (ICT)
  - Manufacturing defects analyzer (MDA)
  - Flying probe
  - Boundary scan
  - Final functional test
- Average yields at final inspection
- Average first-pass yields at final inspection
- Internal yields of key processes:
  - Surface-mount
  - Wave solder
  - Selective solder
- Defect rate in defects per million opportunities (DPMO):
  - At testing
  - At final inspection
- Facility's yield or DPMO targets
- Average cost of poor quality (COPQ) to gross sales:
  - Rework
  - Scrap
- Percentage of board assemblies that required touch-up after wave soldering
- Percentages of products utilizing selected tests
- Percentages of companies utilizing selected quality control methods
- Frequency with which companies evaluate SPC control limits

Customer Satisfaction
- Measurement system in place to assess the customer satisfaction (percent of responding companies)
- Rate of customer returns in parts per million (PPM):
  - PCB assemblies
  - System build items
  - Cable and harness
  - Other
- Percentage of RMA returns during the last calendar year
• Percent of printed circuit assemblies (PCAs) shipped “dock-to-stock”
• Average rate of on-time customer deliveries during the last calendar year
• Rate of customer-returned items that failed:
  o Zero KM (Infant mortality, dead on arrival)
  o Within 1-year warranty
  o After 1 year

Supplier Performance
• Track supplier performance (percent of responding companies)
• Percent of on-time deliveries from PCB suppliers
• Percent of on-time deliveries from component suppliers
• Lot reject rate

Certification
Percent of responding companies that have received, are in process of obtaining, and have no plans to obtain the following certifications:
• ISO 9001
• ISO 14001
• ISO 13485
• AS 9100
• QS 9000
• TS16949
• TL 9000
• QSO 80000
• FDA 820 Registration
• ITAR
• IPC Qualified Manufacturer List (QML)
• IPC Qualified Product List (QPL)