IPC MARKET RESEARCH

Study of Quality Benchmarks for Electronics Assembly 2017

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Strengthening & Advancing Electronics Manufacturing Globally

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Introduction

Detailed Results*

Appendices

*** 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:
    - Zero KM (Infant mortality, dead on arrival)
    - Within 1-year warranty
    - 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)