



External Manufacturer (EM) Quality Performance and Failure Data Reporting Process Requirements for Core Printed Circuit Board (PCB)

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Overview

This document defines quality performance and failure data reporting process requirements to be followed by external manufacturers (EM) for PCB products identified by Oracle part number in a Product Award Letter (PAL) as Oracle Core material. This document also defines Oracle Worldwide Operations Supplier Engineer's (SE) roles and responsibilities in this process.

Audience

Operations SE's (Advanced Process & Technology Team), Supplier Program Managers (SPM) and Oracle EM's that purchase PCB products designated "Core" in Oracle PAL's

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1 Support

1.1 EM

The EM is responsible for assigning resources to support quality management and reporting for Oracle core Printed Circuit Board (PCB) items purchased by the EM for use in builds of upper level assemblies in the EM's manufacturing process. The EM shall designate a Key Point of Contact as the primary interface with Oracle to support resolution of day-to-day issues and negative quality performance relating to core PCB items. A backup Point of Contact and escalation path contact information shall also be provided by the EM.

The EM's designated Key Point of Contact for Oracle core PCB product is the first point of contact if an issue concerning a core PCB item is escalated at the EM or by the EM to Oracle, and is responsible for documenting and communicating, in the appropriate manner, any issues or quality incidents. The EM initiates the investigation within their own manufacturing and inspection/test processes, documents the issue and results of EM's initial investigation, and provides that information, as part of EM's documented notification of the issue, to the designated Oracle Supply Chair Operations (SCO) Advanced Process and Technology Team Supplier Engineer (APTTSE) and Sourcing & Procurement Engineering (S&PE) Component Engineering (CE).

Responsibilities of the designated EM Key Point of Contact include:

- Ensuring timely reporting of quality data/metrics for Oracle core PCB items as required by this specification.
- Supporting core PCB quality meetings with Oracle as required.
- Engaging other resources within the EM's organization as necessary to provide information in a timely manner to assist in characterizing quality issues and associated impact on EM's ability to meet Oracle quality, cost, or material availability requirements as inputs to Oracle assignment of priority for root cause corrective action (RCCA) investigation actions.

1.2 Oracle

The SCO APTT SE's responsibilities include:

- Ensuring that EM's using Oracle Core PCB's effectively implement and execute the quality data reporting processes defined in this specification to enable efficient coordination of the closed loop RCCA process between the EM, Oracle, and Oracle Core PCB Suppliers from initial problem reporting through final validation of RCCA effectiveness at the EM.
- Ownership to create and maintain Core PCB quality review forums with EM's, engaging EM's and Oracle S&PE Component Engineering as needed to identify, analyze and resolve PCB quality issues.

S&PE Component Engineering is responsible for Quality Management of Oracle approved Core PCB suppliers, including:

- Timely communication of the Core PCB quality performance and failure data provided by Oracle EM' to the applicable Core PCB suppliers
- Creation and ownership of Non-Conformance Corrective Action Tool (NCAT) records based on evaluation of Core PCB quality performance and failure data reports.

- Driving Core PCB suppliers to provide Failure Analysis and Root Cause Corrective Action responses in compliance the FA/RCCA timelines stated in Oracle's agreements.
- Review and approval of FA and RCCA responses provided by Core PCB suppliers.
- Providing EM with feedback on effective dates of RCCA implemented by Core PCB suppliers for quality issues reported by the EM, and using EM's quality data as input to assessment of the effectiveness of Core PCB supplier's RCCA.

Oracle SCO APTTSE and CE backup personnel and escalation contact information shall be provided to the EM.

2 Quality Reporting

2.1 Core PCB Supplier Performance Overview Report

The EM must provide a monthly Quality Performance Overview Report covering each Oracle part number (PN) purchased from any Oracle Core PCB Supplier and consumed by the EM in the last 3 months (at minimum), or as otherwise requested by the Oracle APTTSE. This report must be updated and uploaded to an Oracle external Beehive workspace (to be identified by the Oracle APTTSE) no later than 10 calendar days after the end of the latest month the report covers. This reporting requirement applies from the start of P1.0 NPI builds through sustaining life of each Core PCB part number. The Quality Performance Overview Report must include the following information for each P/N supplied to the EM by any Oracle Core PCB Supplier:

- Oracle P/N's
- Part Description's (as listed in Oracle's Fusion and/or Oracle's drawing)
- Total quantity of each part used in each month that is covered by the report
- Total number of failures for each Oracle P/N each month that are the liability of the Core Supplier.
- Total number of failures each month for each part that are the liability of the EM
- Core Supplier Caused Defects Per Million (DPM) for each month for each PN, calculated as quantity of a given PN failed due to Core Supplier caused non-conformances in each month, divided by the total quantity of that PN consumed in EM's process that month, multiplied by 1,000,000.
- Core Supplier Caused DPM, 3 month total, calculated as quantity of a given PN failed due to Core Supplier caused non-conformances for the entire 3 month period covered by the report, divided by the total quantity of that PN consumed in EM's process in those 3 months, multiplied by 1,000,000.
- Core Supplier DPM Target and DPM Minimum Acceptable Quality values for each part number per Oracle's Product Award Letter (PAL) agreed with the Core PCB supplier. The Oracle APTTSE will provide these DPM values for the EM's use on the report. During NPI, where no PAL has yet been finalized, the Oracle APTTSE may provide interim guidance on the DPM values to be used.

2.2 Core PCB Itemized Failure Detail and Returned Material Data Reporting

The EM must provide a report, updated monthly, covering the details of each failure occurrence for each Oracle PN purchased from the Oracle Core PCB Supplier and consumed by the EM in the last 3 months (at minimum), as well as any older failed core PCB items still residing in EM's Material Review Board (MRB) inventory, or as otherwise requested by the Oracle CPCBSE (Component PCB Supplier Engineer). This report must be updated and uploaded to an Oracle external repository SecureSite (to be identified by the

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Oracle CPCBSE) no later than 7 calendar days after the end of the latest week the report covers. This reporting requirement applies from the start of P1.0 NPI builds through sustaining life of each Core PCB part number.

This detailed report must include the following failure data, corresponding EM MRB Inventory status, and failure return logistics/return material information (RMA) information associated with all items supplied to the EM by the Oracle Core PCB Supplier that have been rejected at the EM's facility:

- Failure Date
- EM Site where the failure occurred
- Oracle P/N
- Part Description (as listed in Oracle's Fusion and/or Oracle's drawing)
- Serial Numbers (S/N(s)) (Where Serialization is required for the affected item(s). If not a serialized item, provide Date/Lot code of affected item(s) if applicable)
- Project (name of the top system-level)
- Failure Type (Cosmetic, PCB, Functional, and so on, categories to be agreed to by the Oracle OCE prior to reporting)
- Quantity Failed
- Failure Stage (Point in EM process where failure was discovered, for example, Incoming Inspection, Assembly, Test, and so on)
- Brief description of the defect
- EM's Unique Failure Identifier (EM's Failure Record number/Control number associated with the rejection)
- Global Unique Test Identifier (GUTI) or other test identifier (if applicable, but typically not applicable to PCBs)
- NCAT number (if applicable – Oracle CE to advise NCAT number when available)
- Fault (EM or Core Supplier) (Initially enter best assessment of fault, may be changed based on further info obtained via FA/RCCA investigation and as finally agreed between EM, Oracle, and Core PCBA Supplier)
- Disposition (Return to Vendor (RTV), Scrap, Rework, or TBD. Indicate whether at EM or Supplier Expense)
- Failed Item Location (MRB, RMA Shipped, Other – Specify)
- Date Item Entered MRB
- MRB Aging (Number of Days in EM's MRB location, Leave blank if not in MRB)
- Date RMA Requested from Oracle Core PCB Supplier
- Date RMA Provided by Oracle Core PCB Supplier
- RMA Number issued by Oracle Core PCB Supplier
- Date of shipment from EM for any item(s) dispositioned RTV to the Oracle Core PCB Supplier
- Carrier and Freight Tracking number for any item(s) RTV to Oracle Core PCB Supplier, or any item(s) shipped elsewhere for FA at Oracle CE's request

2.3 Reporting Templates

Refer to document 7320831, WWOPS Supplier Management: Core Mechanical Supplier Quality Reporting Template, for examples of report templates that may be used by the EM as a basis for developing a format for the two Core PCB Supplier Quality Reports required per sections 2.1 and 2.2 above. Variations in EM's reporting format are acceptable as agreed by the Oracle APTTSE and CE, as long as the minimum applicable data elements specified in sections 2.1 and 2.2 are included in the reports. Titles of reports may be changed to reflect Core PCB Supplier quality content.

3 Quality Incidents

In the event of a major quality incident the EM shall notify the designated Oracle APTTSE, OCE, and the Oracle Operations Program Manager(s) for the affected platform(s) via e-mail and provide the detailed failure information per Section 2.2 for the part in question within 24 hours of detection of the incident (Minus RMA and return freight related info, which can follow as soon as available). In addition to this information the EM shall supply the quantity of on-hand inventory, as well as the outstanding quantities on open purchase orders (PO's), and due dates required for quantities on open PO's.

To qualify as a major quality incident the issue must meet all of the following requirements:

- DPM must be above Minimum Acceptable Value documented in the PAL
- The failure mode must have resulted in a reject quantity greater than 3
- The quality incident must have a notable impact on manufacturing and/or the EM's ability to meet required ship dates

Issues that do not meet these requirements only require reporting in the weekly report as described in Section 2 above.

4 FA Reports

The support model for sending the failed components for FA, and communicating FA results, must conform to the following:

- The EM must verify failed components do not meet specification requirements and return the failed parts, with accompanying failure information, to the Core PCB Supplier the failed parts were purchased from. Note: EM must include clear photos of any failures due to physically apparent damage or cosmetic issues in the failure information provided to the Core PCB Supplier to facilitate prompt initiation of FA/RCCA by the supplier in advance of receipt of the failed parts at the supplier's location.
- EM requests for FA results and RCCA to be provided by an Oracle Core PCB Supplier must come through the Oracle APTTSE. Such requests by EM are not to be made directly to the Oracle Core PCB Supplier. The Oracle APTTSE consults with the Oracle CE to determine the form, content, and level of detail that is necessary and appropriate to be provided to the EM in response to the EM's request while maintaining compliance with any confidential disclosure agreement (CDA) agreements between Oracle and the Oracle Core PCB Supplier. (As a minimum, to support EM validation of RCCA effectiveness, the EM will typically need to be provided information as to PO/Line Item/Date when initial quantities of an item where RCCA has been implemented by the Oracle PCB Supplier are shipped to the EM).

Document History

REV	DATE	DESCRIPTION OF CHANGE	CHANGE ORIGINATOR
01	02/02/16	Initial Release	N/A
02	11/09/21	Update organization names, remove reference to Agile & replace with Fusion. Remove reference to Beehive.	N/A
03	5/2/24	Remove reference to Beehive on Page 6, add updated alias for help.	N/A
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