

Supply Chain Quality Requirements

The following requirements apply to all SUPPLIERS of components and materials purchased by Microboard. Exceptions for a particular clause are identified within the clause.

- A. The SUPPLIER shall grant Right of Access to Microboard, our customers, and to any regulatory authority, to all applicable areas of all builds at any level of the supply chain involved in the order and to all applicable records with one working day notice.
- B. The SUPPLIER shall notify Microboard of any changes that affect their ability to meet specified purchase requirements of the purchased product/service. Additionally, changes to ownership, executive management, and Manufacturing facility location need to be reported to Microboard as related to Microboard and our customers.
- C. Changes in materials, processes, procedures, design interfaces, or software which affects the form, fit, function, safety, reliability, maintainability, testing, weight, or any other requirement or specified/implied characteristic of the product being delivered shall not be made without prior written approval from Microboard. SUPPLIER shall submit approval requests in writing to the Microboard. No changes can be made until Microboard provides written approval of the change request. Examples (not all inclusive) of events which the SUPPLIER shall evaluate for product impacts: Change of Equipment, Facility / Equipment Relocation, Material Change, Process Change, Die change, Substrate / Carrier Change, Process variables, settings or profiles, Manufacturing location Change, Design Change, Supplier Change.
- D. The SUPPLIER shall maintain a Quality Management System (QMS). Preferred QMS systems include ISO-9000, ISO-13485, AS9100, or any other equivalent, industry recognized system.
- E. The SUPPLIER shall ensure the competence of personnel through continued training, including any certifications that may be required in order to assure product Quality. Training records are to be maintained and available for Microboard review for products and processes that relate to components and materials supplied to Microboard.
- F. The SUPPLIER is expected to maintain an average minimum Quality level of 98.5% and On Time Delivery (OTD) rate of 95%.
- G. At any time, Microboard reserves the right to issue Supplier a Corrective Action Notice. In the event that Supplier does not implement effective corrective actions, Microboard reserves certain legal rights, up to and including termination of agreements.

- H. Microboard, and/or our customer, may elect to perform verifications and/or validations such as on-site Source Inspection on the purchased product or service, prior to delivery by the Supplier. The SUPPLIER shall grant right of access to all appropriate personnel, as described in Section A of this document.
- I. Since Microboard does not grant MRB Authority for product repair, the SUPPLIER shall notify Microboard whenever parts are rejected and are dispositioned for repair. The SUPPLIER can perform rework at will without having to notify Microboard for approval.

Repair is defined as the act of restoring the functional capability of a defective article in a manner that precludes compliance of the article with applicable drawings or specifications.

Rework is defined as the act of reprocessing non-complying articles, through the use of original or alternate equivalent processing, in a manner that assures compliance of the article with applicable drawings or specifications.

This requirement pertains to custom parts only. COTS (Commercial Off the Shelf) electronic components are exempt from this requirement.

- J. The SUPPLIER shall maintain test and inspection records for all delivered lots. The term of the record retention shall be specified in the Microboard P.O. If no term is specified, the vendor shall maintain all Quality records for a period of not less than ten (10) years.
- K. A custom product is defined as one that is designed by or for and sold exclusively for use by Microboard's end customer. It can include COTS product that has been modified to meet the specific customer need. It is the Supplier's responsibility to define custom parts at time of quotation or purchase order. SUPPLIERS of custom components shall provide Microboard with a First Article Inspection Report (FAI):
- With the First shipment of a new part
 - When there is a revision change to an existing part, or
 - Whenever an existing part/revision has not been built or shipped to Microboard in more than 2 years.
- L. The FAI shall be modeled after the AS9102 format although an FAI of the vendor's choosing is acceptable provided that the P.O. does not specifically call out an AS9102 format. If the P.O. requires an AS9102 FAI, the ONLY acceptable format for the FAI shall be the AS9102 format. This requirement pertains to custom parts ONLY. COTS electronic components are generally exempt from this requirement unless the Microboard P.O. specifically invokes it.

- M. The SUPPLIER shall perform an appropriate level of inspection and test. For custom product, 100% outgoing inspection is required unless defined to the contrary by P.O., testing shall be performed only at a 100% level. Test sampling is not acceptable. This requirement does not pertain to COTS components which shall be inspected and tested in accordance with industry standard commercial practices and to ensure Microboard's quality requirements are met.
- N. A Certificate of Compliance (C of C) shall be provided with each shipment of product. As a minimum, the C of C shall define the manufacturer's name and part number, Distributor name and PO number (if purchased through a distributor), the part revision (if the part is rev controlled), the quantity, the Microboard P.O. number, the Date Code and/or Lot Code, the part serial numbers (if parts are serialized), a statement detailing the compliance of the parts to the relevant drawings, specifications, etc., a RoHS declaration (for RoHS components), along with the name, signature, and date of the person authorizing the release of the material.
- O. Suppliers of electronic, electromechanical or mechanical parts or components shall have a Counterfeit Electronic Component Detection and Avoidance system in place to prevent the introduction of counterfeit components into the supply chain. The system shall be modeled after AS5553, including all paragraph 3.1 requirements, Revision D from April of 2022 reference 3.1 which requires a control, which states "The organization shall develop and implement a risk-based counterfeit EEE parts control plan which identifies the organizational processes used for risk identification, mitigation, detection, avoidance, disposition, and reporting of suspect counterfeit or counterfeit EEE parts and/or assemblies containing such EEE parts." The control plan shall include, but is not limited to, the processes described in 3.1.1 through 3.2. In the case of electronic or electromechanical components utilizing COTS components, the system shall also be compliant with DFARs 252.246-7007.
- P. To better control counterfeit electronics, SUPPLIERS are not permitted to ship electronic components that are not from Original Component Manufacturers (OCM) and/or Franchised Distributors (FD) that were formerly shipped to a different customer and were subsequently returned to the OCM and/or FD. Exceptions may be made on a case-by-case basis, with written approval from Microboard's customers, via Microboard's Purchasing Department.
- Q. Conflict Minerals (3TG) Requirements - Microboard Processing Incorporated (Microboard) is fully committed to support the initiatives set forth by the Dodd-Frank Act, to ensure that T3G "conflict minerals" (Gold, Tantalum, Tin, and Tungsten) used in components which we purchase from our SUPPLIERS do not directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo (DRC) or adjoining countries, committing atrocities and human rights abuses. Microboard requires our SUPPLIERS to support this initiative by:

1. Agreeing to conduct your business in conformance with the Responsible Business Alliance (RBA) **Code of Conduct** version 8.0 (2024) requirements, and subsequent updates as they are released. A copy can be found at: [Code of Conduct \(responsiblebusiness.org\)](https://responsiblebusiness.org)
 2. Exclusively sourcing from smelters / refineries which have been independently audited and certified as “conflict-free” of the T3G minerals.
 3. Implementing a system that allows you to determine the origin of conflict minerals in the products that you manufacture or contract to manufacture, and reported as required by United States law or Microboard’s customers.
 4. Ensuring continued compliance with any new laws or requirements from regulatory bodies as they are implemented.
- R. Unless stated to the contrary in the P.O. or provided drawings, workmanship criteria for printed circuit assemblies and cable/harness assemblies shall be in accordance to IPC-A- 610, and IPC-WHMA-A-620, class 3, respectively.
- S. Many Microboard programs are subject to ITAR rules and regulations; therefore, all documentation supplied by Microboard shall be treated in accordance with the requirements defined by the various ITAR CFR’s. For the latest ITAR regulations, SUPPLIERS are encouraged to visit the US Department of State Directorate of Defense Trade Controls web page at <https://www.pmddtc.state.gov/>.
- T. SUPPLIERS who use sub-contractors to perform some/all aspects of the overall build of custom products are responsible for flowing down all Microboard requirements to the sub-tier SUPPLIERS. The SUPPLIER that Microboard issued the P.O. to is ultimately responsible for the compliance of the finished part to all Microboard requirements.
- U. SUPPLIER personnel shall be made aware of the following:
1. Their contribution to product/service conformity
 2. Their contribution to product safety
 3. The Importance of Ethical Behavior:
- V. Additional requirements for Printed Circuit Board SUPPLIERS are specified in Microboard Form DOC 32.0- Panel Design Requirements for Printed Circuit Board Suppliers, for each P.O.
- W. Without prior approval from Microboard Purchasing, Supplier shall not ship any components or parts:
- a. older than 3 years (as evidenced by the components date and/or lot code);
 - b. that are surface mount technology provided loose in bags or in tubes;
 - c. on reels with mixed date codes or lot codes (reels must contain unique date and/or lot codes);

X. Any special requirements not addressed in this document shall be detailed in the Microboard P.O.

Change History			
Revision	Date	Author	Description
2.3	7/15/2025	B. Poland	<ul style="list-style-type: none"> Inserted new Section C to more clearly describe Supplier requirements when making changes
2.2	2/28/25	B. Poland	<ul style="list-style-type: none"> Added Change History log Moved age limit requirement to Section V Added additional requirements to Section V including tube exclusion and mixed reel exclusion
	2/19/25	J. Blakeslee	<ul style="list-style-type: none"> Defined COTS Reformatted Section H Added "and/or Lot Code" to Section M Repaired jumbled section lettering and moved Section W to end.