

**APPENDIX A**

**QUALITY ASSURANCE REQUIREMENTS  
FOR SUPPLIERS**



a **KRATOS** company

**QUALITY ASSURANCE REQUIREMENTS  
FOR SUPPLIERS**

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## QUALITY ASSURANCE REQUIREMENTS FOR SUPPLIERS

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**Q001 GOVERNMENT SOURCE INSPECTION**

Upon receipt of this order, supplier shall furnish a copy to the government representative who normally services your facility. If no representative is immediately available, the nearest Defense Contract Management Command office (DCMC) shall be provided this contract. DCMC shall be given a minimum of 5 working days advance notification for source acceptance testing/inspection. Evidence of source inspection shall accompany each shipment.

**Q002 MSI SOURCE INSPECTION**

The Supplier shall furnish to MSI, at no cost, such facilities and equipment, and perform inspections and tests as required, to provide evidence of product/service conformance. MSI shall be given a minimum of 3 working days advance notification for source acceptance testing/inspection. Evidence of source inspection shall accompany each shipment.

**Q003 CERTIFICATE OF COMPLIANCE**

Shipments made against this Purchase Order shall contain a statement of compliance by the Supplier. This statement shall attest specifications, drawings and purchase order requirements have been met. It shall certify that material supplied by the contractor is the material specified on the order; that physical and chemical test reports of raw materials used are on file and are available for contractor's review either at the Supplier's plant or at those of the Suppliers' vendor. Special processes shall meet the applicable specification indicated on the drawings, purchase order, and/or statement of work. Special Processes may include but not be limited to the following: plating, heat treating, chemical films, X-ray, magnetic particle and penetrate inspection, soldering, encapsulation, fusion welding, resistance welding, gap welding, electron beam welding, electron beam welding, printed circuit boards, foundries, brazing, etc. Material received without this information may be subject to rejection.

**Q004 IDENTIFICATION/SERIALIZATION CONTROL**

Part or type number shall identify each part, component, or assembly procured on this Purchase Order. Where control of individual or multiple articles is required, one or more of the following detailed identification methods shall also be used: Serial Numbers, Lot Number, Date Codes. Buyer may define the method of traceability to include specific serialization.

**Q005 QUALIFICATION REPORTS**

As defined in this purchase contract and prior to shipment of first pieces, the Supplier must submit Qualification Reports supporting drawings/specification requirements.

**Q006 ISO 9001/AS9100**

The Supplier shall maintain a certified Quality Management System with the requirements of ISO 9001 or AS9100. Other QMS standards may be approved by MSI if coordinated prior to performance of the Purchase Order.

**Q007 Not Used**

**Q008 INSPECTION/TEST RECORD RETENTION: LIFE SPAN or 7 YRS.**

Seller and Seller's Subcontractors shall maintain verifiable objective evidence of all inspections and tests performed, results obtained, and dispositions of non-conforming articles. These records shall be identified to associated articles, including heat and lot number of materials, unit or lot serialization when applicable, and shall be retained by the seller and made available for review to Buyer and/or authorized representatives/customers of the Buyer upon request. Records shall be retained in a safe, accessible location for a period of life of the article or minimum of seven (7) years, whichever is greater.

Records held for the required retention period (life of the article or minimum of seven (7) years shall not be destroyed without Buyer's written concurrence. Contact Buyer for concurrence. Additional retention/storage time, if required by Buyer, will be subject to negotiation.

**Q009 NOT USED**

**Q010 SCREENING DATA**

Each shipment of solid-state devices shall be accompanied by objective evidence of screening in accordance with MIL-STD-883. Specific parameters for testing and acceptable quality levels (AQL) are identified in the purchase order.

**Q011 STATIC PROTECTION**

Parts that are susceptible to damage by static shall be packaged and handled as to afford protection from static damage. Material shall be individually packaged in a resealable bag/container that shields the device from Electrostatic Discharge. Twisting the leads together as a means of static protection is prohibited. Methods of protection shall comply with acceptable Industry/DOD standards.

**Q012 MIL-PRF-31032/ IPC-6013 Class III (C)**

Printed wiring boards shall be manufactured and supplied in accordance with MIL-PRF-31032 or IPC-6013 Class III (C)

**Q013A APPROVED SOURCES FOR SPECIAL PROCESSES (BOEING)**

Seller and/or seller's subcontract process sources shall be an approved processor or shall use approved processors as required by D1-4426, "Approved Process Sources". A list of approved processors and associated processes are available from Buyer's Procurement Agent or at:

<http://www.boeing.com/companyoffices/doingbiz/d14426/index.html>

This clause shall be included in Seller's subcontracts for work performed under this purchase contract for specified processes.

A Certificate of Conformance and/or equivalent Process Certificate, signed by an authorized agent of the Processor/Seller shall be maintained by Seller. The certificate shall include purchase contract number, part numbers, Trace Numbers (as applicable), Process Specification number with revision, processing date(s) and name and address of the Processor(s) performing each of the D1-4426 Process(es).

Buyer approval of any Processor shall not relieve Seller of Seller's requirement to comply with the terms of this purchase contract.



**Q014 MIL-PRF-19500 (SEMICONDUCTOR DEVICES: Transistors, Diodes, ETC.)**

Suppliers shall certify that Manufacturers who offer the product described by the specifications noted herein have provided written certification, signed by the company or corporate official who has management responsibility for the production of the products: (1) that the product being supplied has been manufactured and tested in accordance with this specification and conforms to all of its requirement, and (2) that all products are as described on the certificate which accompanies the shipment.

**Q015 SHELF LIFE, CURE/MOLD/MANUFACTURING DATE**

Supplier shall indicate shelf-life expiration. No material will be accepted with greater than one-fourth shelf life expended. The cure, mold or manufacture date, and shelf life when applicable, shall be supplied with each shipment of material. Information supplied shall be in accordance with the Specification referenced on the Blueprint or in the Purchase Order. Each container shall be marked with the appropriate information.

**Q017 TEMPERATURE CONTROL REQUIRED**

The product identified has a temperature control requirement and needs to be packaged and stored in accordance with manufacturers recommendations. Manufacturer and MSI Operations (stockroom/mfg floor) are required to control according.

**Q018 PRESERVATION/ PACKAGING REQUIREMENTS**

All parts, components, materials that carry contractual protection requirements shall be preserved and packaged in accordance with the specifications' requirements. When not specifically identified, all items shall be protected from damage during shipment. Preservation/Packaging material shall be of such design as to protect items from shipping and handling damage regardless of the type of carrier used. Parts, components, material, subassemblies, assemblies shall be unit packaged unless otherwise specified on the purchase order. Material subject to oxidation shall be protected against deterioration during storage and shipment. Material displaying signs of shipping damage or suspect functionality due to improper packaging will be rejected and returned to the vendor.

**Q019 MIL-M-38510 (MICROCIRCUITS)**

Suppliers shall certify that Manufacturers who offer the product described by the specifications noted herein have provided written certification, signed by the company or corporate official who has management responsibility for the production of the products: (1) that the product being supplied has been manufactured and tested in accordance with

this specification and conforms to all of its requirement, and (2) that all products are as described on the certificate which accompanies the shipment.

**Q020 MIL-PRF-39018 (CAPACITORS)**

Suppliers shall certify that Manufacturers who offer the product described by the specifications noted herein have provided written certification, signed by the company or corporate official who has management responsibility for the production of the products: (1) that the product being supplied has been manufactured and tested in accordance with this specification and conforms to all of its requirement, and (2) that all products are as described on the certificate which accompanies the shipment.

**Q021 MIL-STD 1520 - CORRECTIVE ACTION AND DISPOSITION SYSTEM**

It is the policy of Micro Systems, Inc. to reject material and supplies that do not conform to contractual requirements. Acceptance of nonconforming material is the sole prerogative of Micro Systems, Inc. Unless otherwise specified, Micro Systems, Inc. retains final authority for material review and disposition of material notified as nonconforming.

**Q023 TRACEABILITY DOCUMENTATION**

The Supplier shall, in the performance of this purchase order, provide and maintain a system of traceability on this product. Documentation shall provide evidence of product conformance, traceable to its origin of manufacture.

**Q024 QUALITY ASSURANCE PROGRAM PLAN**

The Supplier shall prepare and submit a quality program plan in accordance with the flow down requirements of this purchase contract.

**Q025 QUALIFIED PARTS LIST**

Supplier shipment to MSI against this purchase order shall constitute their certification that the items supplied were manufactured by a qualified parts list (QPL) facility.

**Q026 CALIBRATION COMPLIANCE WITH ISO 10012-1, and/or ANSI/NCSL-Z540-1**

For delivery of items requiring evidence of conformance through test and measurement, the Supplier shall maintain and use suitable measuring and test equipment in accordance with ISO 10012-1, and/or ANSI/NCSL-Z540-1. Test/Measuring equipment shall be

calibrated at acceptable intervals against appropriate standards to ensure supplied items conform to contractual requirements.

For delivery of items that they themselves require calibration, the Supplier shall furnish a Certificate of Conformance with the procured item stating the item/equipment has been calibrated and has traceability to National Institute of Standards and Technology (NIST)

**Q027 TEST/INSPECTION DATA**

Shipments made against this Purchase Order or work order, must include copies of final inspection and/or test reports, witnessed by the Supplier's Quality System, reflecting conformance to applicable specification requirements. Each report shall at least include the Supplier's name and location, part number, revision, serial number, date of test/inspection, parameters measured/tested with specified limits, recorded quantitative data against each identified parameter.

**Q028 MIL-DTL-5541**

Apply Chemicals in accordance with MIL-DTL-5541, Type 1 or 2, Class 1A or 3, as specified by the drawing.

**Q029 Not Used**

**Q030 QUALITY STANDARDS OF WORKMANSHIP**

The Supplier is responsible for complying with the standard of workmanship specified in this Purchase Order. Workmanship must satisfy the minimum requirements of acceptable industry standards and specifications applicable to the Purchase Order. The system shall assure conformance to customer flow-down requirements, including key characteristics, throughout all phases of design, fabrication, inspection and test. If the Supplier's workmanship is considered inadequate the Supplier shall be required to correct deficiencies. Non-compliance may require the Supplier to develop a Standards of Workmanship Manual meeting the above requirements.

**Q031 ACCEPTANCE TEST PLAN/PROCEDURE**

The Supplier shall generate an Acceptance Test Procedure (ATP) that is consistent with the requirements of the contract and verifies the product meets its' specified requirements. It will identify quantifiable parameters assuring items meet the highest reliability consistent with their design. The ATP shall include Test Data Sheet(s) for

identifying and recording data. A copy of the ATP shall be provided to the buyer for review and concurrence prior to shipment of the first lot of material. Each deliverable item shall be tested to the ATP, and the resulting data forwarded with the product.

**Q032 CONFIGURATION CONTROL**

The Supplier shall deliver the revision of product specified on the Purchase Order, SOW, associated blueprint and/or specification. There shall be no change in configuration resulting from repair actions, a change in material, components, or dimensions without the written permission of Micro Systems, Inc.

**Q033 AS9102 SUPPLIER FAI**

The Supplier is required to furnish verification of First Article Inspection compliance as specified on the Purchase Order. First Articles Inspection Reports (FAIRs) shall be delivered with the first article item. Compliance shall be determined by inspection to drawings, specifications and Purchase Order requirements.

First Article Inspection Reports will be performed in accordance with AS9102 and the 3 forms specified in AS9102. FAIRs shall contain (as applicable);

Dimensional (variables) data sheet – every design characteristic (AS9102 paragraph 5.5.2) must have its own unique characteristic number, for example, each drawing dimension/characteristic must be ‘bubbled’ and the bubble number shall have a corresponding entry on the dimensional data sheet.

Certificates of Compliance for raw materials, other materials and components.

Certificates of Compliance (or other documentation) for special processes such as welding, plating and painting.

Routers/Travelers/Shop Orders or other documents that record the manufacture, fabrication, assembly, processing, inspection and test of the FAIR item(s).

Suppliers are encouraged to contact MSI Quality Assurance with any questions about the AS9102 FAIR prior to beginning work.

**Q033A MSI FIRST ARTICLE/FIRST PIECE INSPECTION (FAI/FPI)**

The Supplier is required to furnish one unit to MSI from the first production lot to verify compliance with P.O. requirements. As required by the P.O., build sheets and

inspection/test data shall be submitted with the item. Compliance shall be determined by inspection to drawings and specifications.

**Q034 MARKING PERMANENCY**

All marking shall meet the permanency requirements of MIL-STD-202 Method 215, MIL-STD-130, or equivalent industry standard.

**Q035 MATERIAL SAFETY DATA SHEETS**

Material Safety Data Sheets must be supplied with each shipment of this product.

**Q036 SOLDERED ELECTRICAL AND ELECTRONIC ASSEMBLIES**

Supplier must meet the standards specified for Soldered Electrical and Electronics assemblies as defined in ANSI/J-STD-001 (Class 3), IPC-A-610 (Class 3) and IPC-A-620 (Class 3)

**Q037 DESIGN REVIEW**

Design Review for this program will occur during the Production Readiness Review, as scheduled.

**Q038 OTHER QUALITY ASSURANCE REQUIREMENTS**

Refer to the body of the Purchase order for additional Quality Assurance requirements.

**Q040 IPC-A-600/6010 SERIES, CLASS 3**

Printed wiring boards shall be manufactured and supplied in accordance with IPC-A-600/6010 series, Class 3, High Reliability Electronics Products.

**Q041 IPC-A-600/6010 SERIES, CLASS 2**

Printed wiring boards shall be manufactured and supplied in accordance with IPC-A-600/6010 series, Class 2, Dedicated Service Electronic Products.

**Q042 IPC-A-600/6010 SERIES, CLASS 1**

Printed wiring boards shall be manufactured and supplied in accordance with IPC-A-600/6010 series, Class 1, General Electronics Products.

**Q043 CUSTOMER/GOVERNMENT/REGULATORY SOURCE SURVEILLANCE**

Supplier shall afford right of access and shall be subject to surveillance and inspection of processes, systems, procedures, and facilities by a Customer, Government, and/or Regulatory representative. Supplier shall furnish to the representative, at no cost, such facilities and equipment, and perform tests as required, to provide evidence of process controls.

**Q044 GOVERNMENT INSPECTION AT MICRO SYSTEMS, INC**

Items received from suppliers are subject to government inspection upon receipt at Micro Systems, Inc.

**Q045 MSI SURVEILLANCE**

MSI reserves the right to perform a Quality Assurance Survey to verify that the Supplier meets the quality processes specified on the Purchase Order. The Supplier shall be subject to surveillance and inspection of products, systems, processes/procedures, and facilities by a Micro Systems, Inc. representative. The Supplier's Quality System is subject to audit and re-verification.

**Q046 IPC-A-610, CLASS 3**

Standards of workmanship for manufacture of electronic assemblies under this program shall, as a minimum, meet the requirements of IPC-A-610, Class 3, Acceptability of Electronic Assemblies.

**Q047 IPC-A-610, CLASS 2**

Standards of workmanship for manufacture of electronic assemblies under this program shall meet the requirements of IPC-A-610, Class 2 or better, Acceptability of Electronic Assemblies.

**Q048 IPC-A-610, CLASS 1**

Standards of workmanship for manufacture of electronic assemblies under this program shall meet the requirements of IPC-A-610, Class 1 or better, Acceptability of Electronic Assemblies.

**Q049 NO CHANGE POLICY**

The Seller/Vendor shall understand that during performance of this work there shall be no changes to:

Product design or configuration.

Procurement of item specification.

Place of manufacture, processing technique, and/or outside processing source(s).

The Seller's/Vendor's inspection techniques and/or Acceptance Test Procedure (ATP)

**Q061 PREFERENCE FOR DOMESTIC SPECIALTY METALS**

The Seller/ Vendor shall supply/procure/employ specialty metals defined/qualified by DFAR 252.225-7014, as prescribed by 225.7002-3(b)(1).

**Q062 IPC/WHMA-A-620, CLASS 3**

Standards of workmanship for manufacture of cable and wire harness assemblies under this program shall, as a minimum, meet the requirements of IPC/WHMA-A-620, Class 3, Requirements and Acceptance for Cable and Wire Harness Assemblies.

**Q063 IPC/WHMA-A-620, CLASS 2**

Standards of workmanship for manufacture of cable and wire harness assemblies under this program shall, as a minimum, meet the requirements of IPC/WHMA-A-620, Class 2,

Requirements and Acceptance for Cable and Wire Harness Assemblies.

**Q064 COMPONENTS WITH SOLDERABLE LEADS OR SURFACES**

Solderable component leads or surfaces (including wire) must meet the requirements for solderability per MIL-STD-202 Method 208 and/or ANSI/J-STD-202 (solderability Tests for Component Leads, Terminations, Lugs, Terminals, and Wires). Leads, pins, and terminals of components or parts susceptible to oxidation shall be protected by adequate packaging to minimize oxidation during storage and shipment.

**Q065 PROTECTION OF MOISTURE SENSITIVE DEVICES**

Electronic components susceptible to damage from elevated temperatures through re-flow soldering shall be handled, packaged, and shipped in accordance with the standard IPC/JEDEC J-STD-033. Moisture Sensitive Device components shall be protected from moisture contamination by dry packaging in moisture barrier bags with desiccant, a humidity indicator card, and moisture-sensitive caution labels. The components shall also be identified to their appropriate moisture classification level (1-6) for floor life/soak level.

**Q066 RAYTHEON QUALITY NOTE “SF” APPLIES TO THIS PURCHASE ORDER**

Items delivered under this purchase order shall conform to the latest revision of Raytheon specification 61494 for printed wiring boards. Notify the Buyer for a current copy of the specification.