



Supplier Quality Codes

**Quality Dept.
Z Microsystems, Inc.**



Revisions					
Rev	ECO#	Description	Date	Prepared	Approved
A	D1605	Initial Release	1/20/14	R. Elliott	J. Howell
B	D1653	Remove "(including this Quality Clause Q30)"	3/7/14	R. Elliott	J. Howell
C	D1738	Modified Q-6 and Q-7 to include reference to the AS9102 standard, added clarification on Q-22 with regards to packaging, unified font on entire document to Arial size 10	6/3/14	J. Howell	R. Elliott A. Melgoza
D	D2116	Additions to Q-21: CoC identifying the specification designation/number and revision of standard used to perform the special process. The CoC must clearly indicate adherence to said specification. The supplier is required to use no revision earlier than the revision of the standard called out on the drawing or PO but is allowed to use a more recent revision if available. The revision must be stated on the CoC along with any Class No. call-out.	6/17/15	R. Elliott	J. Howell A. Melgoza
E	D2368	Q-21 added – "also indicating class, grade, etc. when specified. "and " the most recent revision of the standard called out on the drawing or PO."	3/9/16	R. Elliott	J. Howell A. Melgoza
F	CR-00393	Q-14 Test Data had this addition, "The Seller shall submit results of the product testing in a form of documented data containing actual and specification values/requirements. The test report should include supplier, results, author, date and ZMicro PO number. Example i.e., .PCA testing, continuity testing, pull testing, etc.	3/7/17	R. Elliott	J. Howell A. Melgoza
G	CR-00682	Under code #14 deleted the Example and added: The following reports are required for Cables - Continuity testing, Pull testing. If requested test reports are required for PCB's &/or PCA's.	8/11/17	R. Elliott	J. Howell R. Garber
H	C3-00212	Added Q28 - <u>Code of Ethics</u> Ethical behavior is expected. This behavior should be good for business and involves demonstrating respect for key moral principles that include honesty, fairness, equality, dignity, diversity and individual rights.	9/26/17	Rick Elliott	John Howell Rob Garber Angelica Melgoza



These Quality Codes apply to the extent identified on **Z Microsystem's** Purchase Order.

Q-1. Government Inspection

Government inspection is required prior to shipment from your plant. Upon receipt of this order, promptly furnish a copy to the Government Quality Representative who has been delegated quality assurance functions on this procurement so that appropriate planning for Government inspection may be accomplished. The Government representative shall also be notified forty-eight (48) hours in advance of the time articles or materials are ready for inspection or test.

Q-2. Reserved for Customer requirements

Q-3. Quality System ISO 9001

The Seller's Quality System shall conform to the requirements of ISO 9001. Third party registration by an accredited Registrar will be accepted as proof of compliance

Q-4. Quality System

The Seller shall have a Quality System acceptable to the Buyer. The Buyer reserves the right to verify said system.

Q-5. Calibration

The Seller's Calibration System shall conform to ANSI/NCCL Z540-1 or ISO 10012-1. Third party registration by an accredited registrar will be accepted as proof of compliance. The seller's signed certification of Calibration must state traceability to National Standards, tool, gage or equipment number and Order number.

Q-6. First Article Inspection

The Seller shall perform a First Article Inspection (FAI) on one item from the first lot of fabrication, or as required by the Buyer. The FAI shall be conducted and documented in accordance with the most current revision of the AS9102 aerospace FAI standard. The first article item shall be clearly identified by a tag attached to the item or a label applied to the bag, and a copy of the FAI report shall accompany the First Article part upon deliver to Z Micro. The Buyer reserves the right to verify any or all of the characteristics documented on the FAI report at the seller's facility.

Q-7. First Article Inspection / Plan - Critical Parts

The Seller shall submit an Inspection Plan Report to the Buyer within 14 days of purchase order award. The Inspection Plan Report shall list the intended methods used to verify compliance to the specific drawing dimensions, values and/or requirements. The Seller shall perform a First Article Inspection (FAI) on one item from the first lot of fabrication, or as required by the Buyer. The FAI shall be conducted and documented in accordance with the most current revision of the AS9102 aerospace FAI standard. The first article item shall be clearly identified by a tag attached to the item or a label applied to the bag, and a copy of the FAI report shall accompany the First Article part upon delivery to Z Micro. The Buyer reserves



the right to verify any or all of the characteristics documented on the FAI report at the seller's facility. The First Article requirements and Inspection Plan as set forth apply only to the first production lot and to any new revisions. Once the first article is accepted by ZMicro, the Supplier shall not deviate from the process without authorization of the Buyer.

Q-8. Source Inspection

Source Inspection shall be conducted by the Buyer at the Seller's facilities or where designated in this Order prior to shipment. Inspection/test and/or in-process inspection/test of the articles specified in this Order shall be performed by the Seller and shall be witnessed by the Buyer's Quality Representative. Prior to fabrication start, the Seller and the Buyer shall determine the process steps at which Source Inspection shall be conducted. The Seller shall notify the Buyer of the scheduled inspection/test five (5) days in advance. The method of product release shall be a stamp or signature by the Buyer's Quality Representative on the Seller's shipping or inspection documents.

Q-9. Seller Corrective Action

In response to Buyer-initiated corrective action requests, Seller shall advise Buyer of root cause determination, corrective action taken to prevent recurrence of reported problems and/or discrepancies, and effectivity dates of the planned corrective action(s). Seller shall maintain a corrective action system that determines the effectiveness of such corrective actions, and that prevents shipment of nonconforming articles without prior approval from Buyer.

Q-10. Certificate of Conformance

The Seller shall furnish a Certificate of Conformance with each delivery attesting that each item of hardware and/or software conforms to all requirements of the Buyer's specification and purchase order and that all required test and inspections have been performed.

Q-11. Traceability requirements

The Seller shall provide means of end item traceability. The Seller may use the original manufacture Lot/Date Code/Serial number or their own method for identifying the end item product as required for proper traceability. Multiple Lot/Dated coded material cannot be combined on a single shipper and must be packaged separately. Each Lot/Date coded batch must have a corresponding shipper. Serialized shipments must have the serial numbers listed on the shipper and on the corresponding intermediate packaging. Duplication of Lot/Date Code/Serial numbers is prohibited.

Tape and reel products only may contain a maximum of two Lot/Date Codes per reel and shall be listed on the corresponding shipper and on the immediate packaging.

Q-12. Certification of Material(s) and Process(es)

The Certificate of Conformance shall list raw material and/or process specification(s) used in the manufacturing of the item(s). The Seller shall retain original Material and/or Process certifications, upon request such certification(s) shall be made available to Buyer within 48 hours.

Q-13. Electrostatic Sensitive Devices

Devices delivered under this Order are Electrostatic Sensitive. The Seller shall assure that these devices are packaged and identified to provide adequate electrostatic protection.



Q-14. Test Data

The Seller shall submit results of the product testing in a form of documented data containing actual and specification values/requirements. The test report should include supplier, results, author, date and ZMicro PO number, Lot number. The following reports are required for Cables - Continuity testing, Pull testing. If requested test reports are required for PCB's &/or PCA's.

Q-15. Specialized Tooling

Specialized ZMicro tooling is required to perform this order. Contact ZMicro Buyer.

Q-16. Nonconforming Material

For hardware built to a Z Micro (Buyer) engineering drawing the Seller may submit a waiver request to the Buyer for acceptance of nonconforming hardware. The request shall address root cause and corrective action to prevent recurrence of the non-conformance and may recommend a disposition. Seller shall not ship parts until Buyer provides written authorization. A copy a nonconformance report (NCR) form shall accompany the part(s). The affected parts shall be clearly identified with a label with the NCR number.

Q-17. Rework Report

In the event the item is returned with a reported functional failure, the Seller shall test, evaluate and rework as required. The Seller shall provide when required a complete detailed rework report including test results, evaluation findings and description of all work performed.

In the event that the item is found to be fully functional and the failure/discrepancy could not be duplicated, the Seller shall state the CND (Can Not Duplicate) condition on the test and evaluation report.

Q-18. Seller / Distributor

Should the Seller be a distributor supplying material not of its own manufacture, the manufacturer shall be as identified on the Buyer's Order when specified. The Seller shall list the manufacturer on the Certificate of Conformance or shipper with each shipment.

Q-19. Buyer Review

During the performance of this Order, the Buyer reserves the right to review; verify and/or analyze the Supplier's Quality and or Inspection System and Manufacturing processes at the Supplier's facilities. The Buyer's representative shall notify the Supplier forty-eight (48) hours in advance of the intended review start date and duration. Buyer's inspection/acceptance of product prior to shipment is not required unless otherwise specified in this Order.

Q-20. Age Sensitive Materials

The Seller shall submit with each shipment for materials subject to aging, shelf life information including manufacturer's lot or batch number and/or date code, and expiration date. A minimum of 80% shelf life must remain at time of receipt.

Q-21. Special Processes



The Seller and any of its subcontractors performing special processes, such as welding, non-destructive testing, heat treating, plating, soldering, etc. shall submit a CoC identifying the specification designation/number and revision of standard used to perform the special process. The CoC must clearly indicate adherence to said specification also indicating class, grade, etc. when specified. The supplier is required to use the most recent revision of the standard called out on the drawing or PO. The revision must be stated on the CoC along with any Class call-out.

Q-22. Packaging & Shipping

The Seller shall clean, preserve, and package each item on this order, using special packaging when required and specified. When not specified, the Seller may use specially designed shipping containers and/or good commercial practices as deemed necessary to prevent shipping damage. All packages shall be clearly identified with a label. As a minimum, the label shall contain the following information: Part number, revision, date of manufacture, and Buyer's Order Number.

Q-23. Service Bulletins

Seller shall notify and provide Buyer with copies of all Service Bulletins affecting the hardware delivered on this Purchase Order.

Q-24. Welding Process Requirements

Seller shall meet or exceed the requirements set forth in ANSI/AWS D17.1:2001, Specification for Fusion Welding for Aerospace Applications. (Any references to MPS No. 7116 noted on Buyer's drawing are for Buyer's internal use only).

A, B, and C class designations noted on the Buyer's drawing shall equate to the class designations noted in ANSI/AWS D17.1:2001 except for radiographic inspection. Class A designations on Buyer's drawing shall require penetrant inspection in lieu of radiographic inspection unless inspection technique is already called out on drawing. All other requirements for class A welds per in ANSI/AWS D17.1:2001 still apply. Weld requirements without class designations shall be processed as Class C.

Seller and its subcontractor(s) shall permit the Buyer's Quality Representative(s) to perform a survey to verify compliance with welding requirements. If Seller subcontracts welding services, the weld requirements specified in Buyer's drawing and purchase order shall be flowed down to its subcontractors and Seller shall ensure compliance with the weld requirements by its subcontractor.

Seller shall specify on its Certification of Conformance, or on a separate welding certification, the applicable weld specification(s) and class of weld(s).

Q-25. Supplier Part Identification

The Seller shall mark parts with their cage code (preferable) or assigned (five number) vendor code near part number and revision status in accordance with the identification application requirements on the engineering drawing.

Q-26. Material Authenticity/Counterfeit Parts

- A. The supplier shall maintain a Material Authenticity program that aligns and is consistent with the intent of SAE AS5553, Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition.
- B. The Supplier shall not misrepresent used or reclaimed parts as new.
- C. Supplier shall comply with original manufacturer's handling, storage and shipping procedures.



- D. Supplier shall provide to the buyer certificates of conformance and supply chain traceability. Supply chain traceability identifies the name and location of all supply chain intermediaries beginning with the component manufacturer through the direct source of the component(s) for the Supplier. Examples of traceability documents indicating proper component transfer from one company to another in the supply chain include but are not limited to: packing slips; receiving documents; Purchase Order / Subcontract; and shipping documents. Certificates of Conformance from non-franchised distribution sources are not adequate to meet the supply chain traceability requirements.
- E. Supplier shall flow down these requirements to all of their sub-tier suppliers.
- F. If evidence of supply chain traceability to the OCM/OEM is not available, Supplier shall submit all components to verification for authenticity prior to shipment. Verification shall include the following:
1. Supplier shall submit the results of all verification records and results to Z Microsystems for approval prior to shipping the deliverable products. Verification records and results shall include copies of x-ray and digital photographs.

Q-27. Foreign Object Damage/Debris (FOD)

Supplier shall have in place a process to eliminate FOD from any product(s) delivered to Z Microsystems.

FOD is defined as: Foreign Object Debris (FOD): A substance, debris or article alien to a system which would potentially cause damage.

Foreign Object Damage (FOD): Any damage attributed to a foreign object that can be expressed in physical or economic terms which may or may not degrade the product's required safety, cosmetic and/or performance characteristics.

Examples:

- Metal or wire clippings, solder balls and debris lying in the vicinity of electrical terminals, circuitry, connectors, components, etc.
- Tools, hardware, or debris left in the vicinity or migratory path of a system or product during assembly
- Static Charge
- Dust or other dirt in manufacturing cell
- Component parts
- Broken down tape, plastic, paint, etc.
- Moisture
- Dropped, broken, or missing tooling

Q-28. Code of Ethics

Ethical behavior is expected. This behavior should be good for business and involves demonstrating respect for key moral principles that include honesty, fairness, equality, dignity, diversity and individual rights.