

Supplier Quality Requirements

Quality Department

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Table of Contents

1	Purpose.....	4
2	Scope	4
3	Definitions	4
4	Responsibilities	4
5	Codes	4
6	Related Documents	11
7	Addendum	12

1 Purpose

The purpose of this procedure is to define the quality codes that ZMicro flows down to our suppliers.

2 Scope

These Quality Codes apply as defined on each ZMicro issued purchase order.

3 Definitions

N/A

4 Responsibilities

Quality Assurance is responsible for controlling the content of the quality codes.

Purchasing is responsible for flowing down the pertinent quality codes to our suppliers.

5 Codes

As a supplier to ZMicro, you agree to comply with the additional terms and conditions listed below with respect to any product, process, or service provided to ZMicro. These requirements are superseded or amended only by specific requirements transmitted to the supplier at the time of purchase.

AS Suite – flow down on all orders 1 thru 9

QA001 Quality/Inspection System

The supplier shall maintain a quality/inspection system that conforms to ISO 9001 or AS 9100 to ensure provided products, processes and services meet ZMicro's requirements. This includes products manufactured, processes performed by, and services provided by, the supplier, and those procured by sub-tier suppliers. Third party registration by an accredited Registrar will be accepted as proof of compliance. ZMicro reserves the right to verify said system.

QA002 Sub-Tier Suppliers

The supplier shall flow-down applicable requirements, transmitted to the supplier by ZMicro, to sub-tier suppliers. When required, the supplier shall use customer-designated or approved sub-tier suppliers, including process sources.

QA003 Nonconforming Products, Processes or Services

The supplier shall obtain approval from ZMicro for the disposition of nonconforming products, processes and services.

QA0004 Counterfeit Parts Prevention

The supplier shall ensure that materials used in products provided to ZMicro are authentic and that products contain no counterfeit parts.

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 ZMicro for approval prior to shipping the deliverable products. Verification records and results shall include copies of x-ray and digital photographs.

QA005 Changes Affecting Quality

The supplier shall inform ZMicro of any changes to its processes, facility, equipment, sub-tier suppliers, etc., that could affect the quality of product provided to, processes performed for, or services provided for ZMicro. 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/advertised characteristic of the product or service being delivered shall not be made without prior written approval from the Buyer.

QA006 Test Specimens

The supplier shall provide test specimens for design approval, inspection/verification, investigation or auditing if applicable

QA007 Record Retention

The supplier shall maintain records of inspections, testing, and process controls required by ZMicro. These records shall remain available to ZMicro for not less than 10 years.

QA008 Right of Access

ZMicro, its customers, and appropriate regulatory authorities, shall be provided access to applicable areas of facilities and documentation at any level of the supply chain to perform verification and validation activity when necessary.

QA009 Awareness

The supplier shall ensure that appropriate personnel are aware of:

- Their contribution to product and service conformity.
- Their contribution to product safety.
- The importance of ethical behavior.

QA010 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.

QA011 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.

QA012 Test and Calibration

Test and Calibration laboratories must be accredited to ISO/IEC 17025, General requirements for the competence of testing and calibration laboratories.

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.

QA013 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 ZMicro. The Buyer reserves the right to verify any or all of the characteristics documented on the FAI report at the seller's facility.

QA014 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 ZMicro. 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.

QA015 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.

QA016 Supplier 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.

QA017 Certificate of Conformance

The Supplier 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.

QA018 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.

QA019 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.

QA020 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.

QA021 Test Data

When testing is applicable, 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, ZMicro PO number and Lot number.

QA022 Test Data - Cables

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.

QA023 Specialized Tooling

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

QA024 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.

QA025 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.

QA026 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.

QA027 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.

QA028 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 Certificate of Conformance (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.

QA029 Packaging and Handling

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. At minimum, the supplier shall package all material in a manner that ensures protection against corrosion, oxidation, deterioration and physical damage during shipment. 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. In addition, when materials delivered are lot-controlled (and multiple material lots are shipped) each lot shall be identified.

QA030 Service Bulletins

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

QA031 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).

QA032 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.

QA033 Foreign Object Damage/Debris (FOD)

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

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

QA034 Training

It is understood that all supplier personnel will be properly trained for the tasks being performed.

QA035 Workmanship Requirements

Workmanship Requirements apply to the PO. Seller is responsible to identify and conform to the applicable section(s) of Buyers drawing regarding Engineering Criteria, Workmanship & Drawing Clarification on all end item deliverables at the latest revision in effect at the issue date of the PO.

6 Related Documents

N/A

7 Addendum

Quality Code Reference Guide for New numbers to Old numbers

New No.	Description	Old No.
QA001	Quality/Inspection System	Q-3, Q-4
QA002	Sub-Tier Suppliers	New
QA003	Nonconforming Products, Process or Services	Q-16
QA004	Counterfeit Parts Prevention	Q-26
QA005	Changes Affecting Quality	Q-30
QA006	Test Specimens	New
QA007	Record Retention	New
QA008	Right of Access	New
QA009	Awareness	New
QA010	Code of Ethics	Q-28
QA011	Government Inspection	Q-1
QA012	Test and Calibration	Q-5
QA013	First Article Inspection	Q-6
QA014	First Article Inspection / Plan - Critical Parts	Q-7
QA015	Source Inspection	Q-8
QA016	Supplier Corrective Action	Q-9
QA017	Certificate of Conformance	Q-10
QA018	Traceability Requirements	Q-11
QA019	Certificate of Materials(s) and Process(es)	Q-12
QA020	Electrostatic Sensitive Devices	Q-13
QA021	Test Data	Q-14
QA022	Test Data - Cables	New
QA023	Specialized Tooling	Q-15
QA024	Rework Report	Q-17
QA025	Seller / Distributor	Q-18
QA026	Buyer Review	Q-19
QA027	Age Sensitive Materials	Q-20
QA028	Special Processes	Q-21
QA029	Packaging and Handling	Q-22
QA030	Service Bulletins	Q-23
QA031	Welding Process Requirements	Q-24
QA032	Supplier Part Identification	Q-25
QA033	Foreign Object Damage / Debris (FOD)	Q-27
QA034	Training	Q-29
QA035	Workmanship Requirements	New